A national health policy / by Harry Roberts.

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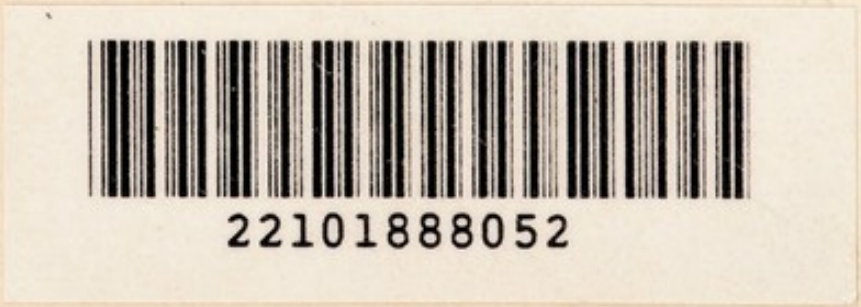
HARRY ROBERTS



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"The great cruelty of the English lies in permitting evil rather than in doing it."—MURALT, *"Lettres sur les Anglais."*

"There is nothing really offensive in honesty of purpose provided that it be decently clothed in a certain degree of whimsicality."—AUSTIN HOPKINSON.

"In place of ruthless self-assertion, social progress demands self-restraint; in place of thrusting aside or treading down all competitors, it requires that the individual shall not merely respect, but shall help, his fellows; its interest is directed not so much to the survival of the fittest as to the fitting of as many as possible to survive. It repudiates the gladiatorial theory of existence. It demands that each man who enters into the enjoyment of the advantages of a polity shall be mindful of his debt to those who have laboriously constructed it, and shall take heed that no act of his weakens the fabric in which he has been permitted to live. . . .

". . . Most men are agreed that the proportion of good and evil in life may be sensibly affected by human action. . . . So far as we possess a power of bettering things, it is our paramount duty to use it and to train all our intellect and energy to this supreme service of our kind."—T. H. HUXLEY.

"Sanitary reform, that phrase so little understood, includes most of the civilising influences of humanity."—BENJAMIN DISRAELI.

"If there be a saving way at all, it is obviously this: substitute health and happiness for wealth as a world ideal; and translate that new ideal into action by education from babyhood up."—JOHN GALSWORTHY.

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BY

HARRY ROBERTS

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A NATIONAL HEALTH POLICY

INTRODUCTORY

THIS small book has a limited, though definite, purpose. It is not a text-book of practical sanitation, nor is it a Parliamentary Bill. It is an attempt to summarise the more important principles which politicians and legislators must observe in dealing with problems of health if their efforts are to have any practical value. The writer of the book believes himself to be free from all party political bias; his attitude to this, as to other political questions, being a purely realist one. The facts, whatever they are, have to be recognised and taken into account by all conscientious reformers, whether they label themselves Tory, or Liberal, or Socialist. It is, of course, open to any one to deny the accuracy of the facts stated, or the correctness of the inferences drawn from them, though the writer believes that most of them are beyond criticism. His personal experience is based on some thirty years spent in general medical practice, partly among the very rich, partly among the mixed classes making up a typical rural district, partly among the very poor in the slums of East London.

To the written and spoken words of others he is much indebted. At no time have so many able men in the medical profession given their attention and their thought to the problems of medical politics. Sir George Newman, Dr. W. A. Brend, and Lord Dawson may, perhaps, be specially mentioned in this connection; but there are many others. Many members of the laity also have made useful contributions to the subject, but these inevitably lack that flavour of reality which comes only

from first-hand contact with individual sickness and with actual environmental conditions.

The subject-matter of this book consists of three parts. One part is devoted to a discussion of those fundamental principles of biology on which an intelligent health policy must perforce be built; another deals as briefly as possible with the principal environmental cause of disease at the present day in England; whilst the third part discusses the right methods of organisation of what we may call remedial work, and the medical and sanitary *personnel* involved in its execution. Little attempt is made to keep these departments of the problem apart. They are, by their very nature, interrelated, and a certain amount of overlapping is inevitable.

No attempt is made at completeness, for the subject is almost limitless. The book may, however, be of some help to those who are giving their minds to the subject from the political standpoint, as indicating a scale of relative values that it is hoped will assist in directing into the most important channels much energy that is at present being diverted into courses relatively insignificant.

Modern medicine, remedial as well as preventive, is basing itself more and more on actual observed facts, both natural and experimental. The evil influence of Plato on all but the highest minds is largely responsible for the stagnation of medical science during more than a thousand years. The methods of intuition and guessing are all very well for geniuses; to ordinary, dull-minded persons they serve but as an excuse for intellectual laziness. Abstract and metaphysical conceptions of disease and its processes have their use, but until they have been passed through the crucible of scientific method they are poor guides to practice. So long as medicine rested on such foundations, it was open to every doctor, and, indeed, to every layman, to make his own guess and have his own theory. And so long ago as the tenth century it was remarked that " the patient

who consults a great many physicians is likely to have a very confused state of mind." More recently, a distinguished French physiologist has pointed out that " the therapeutics of any generation are always absurd to the second succeeding generation." There is every reason to believe that such sayings as these will be decreasingly applicable.

The general public is strangely ignorant of the true function of the doctor, and of his real potential value to the individual and to the State. The evil is that, human nature being what it is, a large number of doctors take their cue from public opinion, and are more concerned to gain the confidence of the ignorant, and to collect their fees, than to do justice to their craft and maintain the integrity of their profession. Such men have absorbed, as though it were the whole art and science of medicine, the shrewd and, in its proper proportion, good enough advice of an eleventh century physician of the school of Salermo : " On the way to see the sick person, the doctor should question the messenger who has summoned him upon the circumstances and the conditions of the illness of the patient ; then, if not able to make any positive diagnosis, he will at least excite the patient's astonishment by his accurate knowledge of the symptoms of the disease, and thus win his confidence. . . . When he enters his patient's dwelling, he should not appear haughty or covetous, but should greet with kindly, modest demeanour those that are present ; and then, seating himself near the sick man, accept the drink which is offered him, and praise in a few words the beauty of the neighbourhood, the situation of the house, and the well-known generosity of the family—if it should seem to him suitable to do so." Here, with suitable modifications of the environmental remarks if practising in Bethnal Green or Shoreditch, we have an adequate definition of that " bedside manner " which has so long served many as an effective economic substitute for knowledge. Convention and etiquette, even of this type, probably have a long life in front of them ;

but, with the growing education of the public, they will not much longer be accepted as substitutes for skill.

Briefly to summarise the practical proposals advanced in the following pages, it is contended that, of varying degrees of value though many ameliorative measures, such as Maternity Clinics, Sanatoria and Health Insurance may be, they are but the merest Partingtonian trifling with the actual ocean of disease which confronts us. The overwhelmingly urgent need is to provide an altogether better environment for the rising generation. This can be done only by ruralising our manufactories ; that is, by limiting the size of our cities, by bringing industrial life into the small, dead-alive towns that already exist, and by constructing at least a hundred new towns of the garden city type.

The next most pressing need is that of so organising the medical profession and medical education that the whole of its skill and sanitary knowledge may be at the disposal of all in proportion to need. The true education of the public, not only in matters directly bearing on health, but as to the necessity of keeping the population within bounds and the methods by which this may be attained, is no less vital.

Instead of pottering with preventible illness by means of dispensaries and drugs and doles, sound statesmanship would prevent what is preventible, and utilise all available skill and knowledge in curing quickly what is curable.

Whilst the proposals made in this book involve a considerable extension of the State's activity, the writer has no belief in the mere act of nationalisation, either of material wealth or of human services, as an automatic solvent of economic or hygienic ills.

Still, even the extremest individualist will agree that there is no escaping from the expediency of making social provision of, at any rate, such actual necessities of individual and racial life as are, in the nature of things, beyond the potential reach of most of the individuals themselves. The nationalisation of services is a more

delicate matter, and involves a careful realistic consideration of the motives of human action. It needs a very sentimental eye to enable one to take a complacent view of the probable results of relying entirely on the motive of public spirit as a substitute for that of economic gain, though, as time goes on, this may become increasingly possible. Fortunately there are other motives to which appeal may be made. Natural man has a strong impulse towards construction ; and, being a social animal, is very sensitive to the opinion of his fellows. In pride of craft, intellectual curiosity, and the love of praise, we have three forces by which great things may be built. But it is only by realistic methods and by the recognition of actuality that we shall progress, not forgetting that " there is a natural body, and there is a spiritual body."

THE PHILOSOPHY OF HEALTH

It is impossible to construct a sound health policy unless we have a sound conception of what health is. Many people, and these not all unlettered ones, still have a vague idea that health is some kind of commodity which can be bought at the chemist's or produced and distributed by means of Acts of Parliament. Without philosophy, all conscious human effort is doomed to futility, and a clear view of the meaning of health is as essential to a comprehensive and coherent philosophy, as a coherent philosophy is to an intelligent conception of health. So long as we go on acting on the negative view that not to be ill is to be healthy, we shall inevitably go on pottering with drugs and other old women's and old doctors' remedies instead of adopting lines of constructive action, with a view to making life fuller and more in accord with our ideals of what it might be. So-called practical—more truly described as wooden-minded—persons are wont to scoff at ideals. Being for the most part very unimaginative folk, they are quite unable to distinguish between genuine ideals and those which are merely affected. But it is on ideals that all human progress depends—possibly all progress throughout animate creation. Apart from ideals, such terms as health, and beauty, and even wealth, are almost meaningless. And to talk of " Health for health's sake " is about as silly as the equally common cries of " Art for art's sake " or " Wealth for wealth's sake." It is the particular ideal of human life which an individual or a nation holds that determines for that individual or that nation the explicit meaning of health. The Greek ideal of harmony is one of the most definite of these conceptions, and one which, with trifling modification, still appeals to many of us. But, in any event, health is a state of mental and bodily fitness for our ideal life

in the best environment we can devise for that life. Naturally, therefore, its meaning varies somewhat among different individuals and different nations; though, of course, all have much in common.

Ideals largely determine our mental habits and attitudes; and they play a large part in sexual selection. In that way they help to fix the direction of the race by tending to the perpetuation of those qualities and traits which most appeal to us. Almost unconsciously we select, as the fathers or mothers of our children, those whom we should most wish them to resemble. After all, true ideals are no artificial product. They are, by their very nature, mere developments of our primal instincts and impulses. It is those which have not this biological root that are spurious, melodramatic, and rightly to be ridiculed. For such can have no sustained influence on action and play no part in determining our instinctive manifestations.

Yet, although ideals are rooted in our inherited impulses, their forms are largely determined by external circumstances; that is, by a deliberate or accidental education. Here we see the fundamental importance of sound education in any practical health policy. Legislation, without popular sanction, can go but a little way, seeing how largely it depends for its effectiveness on the ready and intelligent co-operation of the individual. In a complicated society such as ours, the fear of consequences as a motive, even when operative—and it is becoming decreasingly so—is self-regarding in the narrowest sense, and therefore wasteful and ineffective all round. It is on the inculcation of active ideals of human life that we must rely if the future is to be full of hope and promise. Even on the most elementary and crudest plane, nothing is possible so long as parents, through ignorance, resent the advice of the school doctor and the most necessary regulations of the sanitary authority. But so long as narrow egoism and crude selfishness persist—and they may long outlive general ignorance—the thoughtful and the

social-minded must be protected from the thoughtless and the wanton, even if the process of compulsion has to operate, regardless of the untenable dogma that all men are equal. But it is to be hoped that compulsion, as distinguished from approved regulation, will be necessary in dealing with but a small minority of the people. At present it is used, and almost necessarily used, in dealing not only with the instinctively unsocial and the ignorant, but also with the merely passive, the people without "energy" or enthusiasm. Now, passivity, in as large a degree as ignorance, is a result of defective education. In most cases—though, of course, not in all—the difference between the "energetic" person and the torpid is that the former has greater enthusiasm, and more conscious and potent ideals, which serve constantly to release and to direct along specific lines reserves of energy which are often no greater in amount than those hoarded, though never spent and enjoyed, by the apathetic. The difference is not so much in potential energy as in the using of it. Given a sound education and a sufficiently inspiring environment, the great majority of people can be made into true health enthusiasts—in the Greek sense, not the home-spun, masticate-your-food - seventy-two - times, Indian - club, deep-breathing sense. Better, as Professor Saunders said, "to be a Socrates with a headache than a perfectly healthy pig." Health missionaries of the health-for-health's-sake school are calculated to drive sane people to places and pursuits regardless of physical undesirability, in which a better sense of proportion is fostered and the social spirit thrives.

Whilst it is most desirable that into the mind of every one should be instilled all that is known of the fundamental principles, the recognition and observance of which are essential to healthy life, nothing is more undesirable than the growing habit of studying disease and trifling with the technique of medicine. To have a clear notion of the fundamentals of health is one thing, and a sound and valuable one; to allow one's mind

pruriently to peep down the byways of disease, concentrating on liver and intestine, and all those other organs which Nature has wisely and deliberately hidden, is another and highly objectionable one.

This decadent habit is very general. It is confined to no one class. In Mayfair the colon and the appendix, and the fruits of psycho-analysis, are thrown across the dinner table; and at the street doors of Stepney the passer's ear is assaulted by echoing boasts of ulcers, multiple miscarriages, and growths and deformities proudly claimed as unique.

Medical science is still very inexact. It is still grossly adulterated with superstition; and at times one is driven to wonder whether the practice of medicine for gain should not be made illegal. But one has only to reflect on the brainless imbecility which characterises the writings and utterances of fully nine-tenths of the numerous health-fad and health-reform movements among the laity, and the depraving effect on the popular mind induced by their propaganda, to become convinced that the more closely the whole business of disease, its cause and its treatment, is confined to a small specialised class, the better.

There were probably always morbid and neurotic persons with ill-balanced minds and muddy temperaments who loved to brood on their physical corruption, and doubtless they bored the healthy members of their households just as effectively as their successors do to-day. But it is certain that there has never been a time when the ordinary conversation of the streets, and the clubs, and the dinner table, was so largely concerned with visceral eccentricities.

No more ridiculous aphorism was ever uttered than the one which affirms: "To the pure all things are pure." The pure are pure until they touch impurity, and no longer. The sanctimonious obscenity of the cultivated classes is the lineal successor and inevitable outcome of the prudery which is its natural parent. It is difficult to say which of these two kinds of priggish

dirtiness is the more tedious or the more obstructive to a clean and wholesome way of life. Let us pray that the gods may send us some new Whitman to sound once more the clarion call of robust life, free alike from the prudery of the impotent and the prurience of the unsuccessful.

Real health, the sort of health which we ought to aim at, the only sort that can possibly appeal to the imagination, is a very different thing from the mere absence of nameable disease. Real health implies positive attributes, just as beauty does, or virtue. Nobility does not consist in abstaining from picking the blind man's pocket, nor beauty in the absence of repulsiveness.

So, also, health should suggest exuberance, spring, eagerness, buoyancy. And this is why all the sanitation, all the ventilation, and all the doctors and hospitals cannot, by themselves, make a healthy nation. They are all essential conditions, but without something more their fruit never ripens.

Our native impulses need not only to be kept usable, but to have reasonable opportunities of being used. A man or a society cannot be described as healthy, even in the sound physician's sense, if insecurity, envy, uncharitableness and hopelessness hold the field.

It is futile to talk about national health unless we are proposing to deal not merely with such things as hospitals, or even houses, but with unemployment, factory production, education and art.

And our political aim should be, in health, as in everything else, to endeavour to provide every man, woman, and child with an environment in harmony with the fundamental laws of their being ; and an education calculated to develop to their highest point all the native faculties capable of yielding happiness to their possessor without unduly spoiling the happiness of others.

Health, then, implies a wholeness, a unity, a harmony. But the perfect health that we should set before

ourselves as an ideal aim is more than this. The establishment even of complete harmony between what, for convenience, we may call our physical selves and our environment is not enough. Man differs from a cabbage in that he is capable of conscious preferences. And there undoubtedly exist individuals for whom an almost perfectly harmonious environment is afforded by the typical slum. And if slum conditions are to be the environment in which human beings are to live, it is undoubtedly the descendants of those individuals who alone will survive. They will be the fittest. Few of us, however, accept these persons as representative of the sort of men and women for whom we are planning. The environment at which we should aim is one in harmony with man's highest capacities as we conceive them. It is impossible, in the light of what we now know, to keep the mind and body, the psychology and physiology of man, in separate water-tight compartments. We cannot, therefore, wisely consider a problem of hygiene in its general aspect, without taking into account education, beauty, and recreation. A blind man may be free from disease, but a race of blind men does not coincide with our ideal of a healthy race. So also with a man with muscles incapable of pleasant and natural effort, or with a mind stunted from disuse. A healthy environment cannot, therefore, be contemplated merely from the standpoint of air-space, drainage, unadulterated food, or even mortality rates. The biological point of view is the only sound view ; and the best environment is that which best fits with the pleasant and satisfying exercise in due proportion of those natural impulses of man which we know to be necessary or conceive as admirable. The prison cell and the workhouse ward are reasonably clean and free from germs, but they are not healthy homes. Nor are uniform rows of cubic boxes, such as house the bulk of our artisan population, even though these boxes were ever so well drained and ventilated. For beauty is no conventional fad of a small band of superior persons.

It is as biologically related to us as are carbo-hydrate and proteid. Sound hygiene, therefore, must be based on the study of human nature, and its postulates must vary with our increasing knowledge of human nature—mental and bodily. Perfect health implies not only perfect resistance to harmful stimuli, but perfect response to desirable ones. It implies, to quote Hinton : " that keen sense of life which makes it a luxury to draw our breath ; that exhilarating feeling which makes toil a pleasure " ; and, we may add, that feeling of confidence and hope which makes up the essence of enthusiasm. An environment that provides no outlet for constructive thought, that provides no restful and satisfying fitness and beauty, that stultifies originality and makes hope farcical, is an unhealthy environment, no matter how low may be the infant death rate nor how completely infectious disease may have been stamped out.

SOME POLITICAL CONSIDERATIONS

THERE are certain fundamental principles which lie at the base of all efficient political policy. In the first place, that which is aimed at, and the method of reaching it must be not merely desirable but practicable as well. Secondly, it must be remembered that all political action is no mere automatic product of the abstraction called the State, or even of those materialisations of it, called Parliament, county councils, borough councils, and the rest ; but is originated, executed, and administered by individual men and women. Emerson truly says that " an institution is the prolonged shadow of one man." The worship of the " State," in which some people indulge, offering sacrifices in abundance at its altar, is as barbarous as the worship of the sun or the wind, and far less capable of imaginative interpretation. All force, all initiative, all thought, being thus the contributions of individual men and women, it is essential, if a policy is to succeed, that it shall not lessen individual effort, enterprise, and enthusiasm, or stultify natural human motives. This is especially important when, as in this matter of health, we are dealing, not with mere repressive action, but with positive and constructive action. To disregard the nature of the human instruments of our policy is to make failure certain. The abstract theories of a Trade Union Committee, or, for the matter of that, of a committee of diplomats, as to the spirit in which their policy should be carried out, unless the standpoint of those who will actually do the work is taken into full account, will lead nowhere. Love of humanity is all very well, but without pride of craft it butters no parsnips. Standards of professional honour, professional privacy, and professional responsibility are no mere matters of etiquette.

Again, if a national health policy is to be really practical and sound, it must be based on sound know-

ledge. The attitude of informed persons to the problems of health and disease has recently experienced a degree of change which may reasonably be termed revolutionary. The new knowledge which has led to this development has been mainly contributed, not by the physicians, surgeons, and hygienists, in the narrower senses of those terms, but by the physiologists and psychologists. What we may call the biological view of the nature of man is replacing the old static view. The discoveries that have been made by physiologists, such as Leonard Hill, Hopkins, Bayliss, and J. S. Haldane are of the utmost importance, both to private individuals and to public administrators. Clearly, for example, a ventilation policy, based on the theory that impure air is the danger, will be entirely different from one based on the theory, which we now know to be the true one, that it is not so much impurity as stagnation and moisture which make the air of an enclosed room unhealthy. The discovery of the importance of vitamines, again, very seriously modifies our notions of what constitutes an adequate and health-giving dietary. The intimate relation which is found to exist between our emotional states and the activity of our ductless glands, together with a realisation of the vital part which the secretions of the latter play, can but completely alter our sense of the relative importance of all sorts of hygienic measures, personal and public.

The moral of all this is, that behind any worthy national health policy must be a body of carefully chosen doctors and physiologists, familiar with, and closely in touch with, the results of modern research. It is on the advice and reports of such an expert body that health legislation should be mainly based; the part of the politicians being confined to the consideration of financial and other possibilities and difficulties. And it is essential that the reports and advice of the scientists shall be published in such a form that they may be read and understood by the public. Only in this way can the ignorance and prejudice, which are

so general where health matters are concerned, be overcome. This is more than ever important for a party like the Labour Party, which must, if it is not to belie its principles, carry public opinion with it.

Indeed, it is not an exaggeration to say that the most urgent of all health reforms, without which all others will be of comparatively little avail, is the education of the public. Very little in this way is done in England ; much more is done in America. By systematic lectures, by leaflets, by posters, and by official paragraphs in the newspapers, the public should be kept informed of the latest additions to our knowledge, and of their significance and application. It is always difficult to carry out a public health policy, however urgent may be the necessity, among savages and native races. A large section of our own people present in this matter little less difficulty. And with us there is this added danger ; that prejudices, natural enough in the absence of information, are played upon by demagogues and demagogic newspapers to further their own ends. Against this sort of thing there is no weapon but knowledge. Moreover, as I have said, no matter what provision may be made by the State or by its subordinate administrative bodies in the way of environment and of collective regulation, the value of such provision can only be fully obtained if individual men and women intelligently and enthusiastically co-operate.

And the more thoroughly we go into this health question, the more we come to see that the old clear-cut division between so-called preventive medicine and curative medicine—between the functions of the sanitarian and the clinician—cannot be upheld. For purposes of convenience a certain rough-and-ready division may be made ; but it is essentially artificial, and must be qualified by infinite links and over-lappings. If we mean business, the whole medical profession must become one organised entity. Take the case of the doctor visiting a sick child in the slums, and diagnosing the cause of its illness as consisting in all sorts of un-

sanitary conditions, beyond the power of its parents or the doctor to remedy. Is it not ridiculous that between this doctor and the administrative body dealing with public hygiene there is no link whatever? Overcrowding should be as notifiable as consumption. Elsewhere in this book is suggested a scheme whereby all the medical and hygienic forces in each district may be co-ordinated and made effective. What is the good of a doctor visiting a patient suffering from malnutrition, overcrowding, damp walls, or industrial fatigue, if all that he is allowed to do is to say a kind word and prescribe a bottle of medicine? A health policy which permits this sort of farce is nothing but fraud and quackery. The poor ignorant victim may be satisfied with the meaningless decoction of drugs provided; but neither the doctor nor any other educated person will.

The proper meaning of public health is, as Professor Winslow, of Yale, puts it: "The science and art of preventing disease, prolonging life, and promoting health and efficiency through organised community efforts for sanitation; the control of infection; the education of the individual in the principles of personal hygiene; the organisation of the medical and nursing service for the early diagnosis and preventive treatment of disease; and the development of social machinery which will insure to every individual in the community a standard of living adapted to the maintenance of health."

If ever the Labour Party comes to undertake the organisation of the public health services on fundamental, radical lines, it will find its greatest obstacle, not in the vested interests of the medical profession, nor even in the tight clasp of the ratepayer's purse, but in the ignorance and fatalistic passivity of a large section of its own supporters. The conservatism of even the wildest Socialist, where his own personal habits are concerned, is often disconcerting, even if amusing. And it is a rather startling fact that probably three-quarters of our people are still living, so far as scientific know-

ledge goes, in the thirteenth century, if not earlier. On the other hand, a successful code of hygienic life cannot be created *in vacuo*, and applied like a poultice to men and women.

A health policy, like every other policy, has to be based, if it is to be effective, on the inherent impulses of man. And in these we have a very broad foundation. The self-preservative, the maternal, and the herd or social, instinct, between them, provide all the driving force we need. But our instincts act only within limits, and it is to the disregard of these limits that much political failure is due. Sentimentalism is a deadly sin, and the spelling of Humanity with a capital H is at the root of much cruelty as well as hypocrisy. Human love is finite ; so is human imagination, and, consequently, sympathy. We all know how sympathy and pride tend to become attenuated as we get further and further away from ourselves and our families. Most of us experience a very real pride in the more successful achievements of ourselves ; and many of us not much less in those of our families and of our personal friends. Most of us are capable of considerable elation over the fine deeds and possessions of our town or village ; some, though less, over those of our county, and—especially in moments of stress or danger—of our native land. There, for most of us, our social instinct, for all practical purposes, ends ; though a few extend their sympathies wider yet.

It is nearly always easy to appeal to the self-preservative instinct. And history shows how readily, where justice rules, man responds to an intelligent appeal to his civic pride. Love of country can rarely be counted on as a motive for daily acts and efforts in normal times.

Now all this is very relevant to political organisation, whether we are immediately concerned with health or wealth. There are, it is true, certain great administrative generalities which depend very little for their success on the intelligent and willing co-operation

of individuals. Thus, it is quite possible and practicable to lay down rules limiting overcrowding, to carry out measures of isolation in infectious disease, to arrange and carry out great schemes of drainage and the like, providing that the majority opinion favours them, even though a large minority of the persons affected may neither approve of them nor understand their purpose. But a true health policy goes very much further than this, both in kind and in degree; and for its effective carrying out necessitates the active and intelligent, as well as enthusiastic, collaboration of the bulk of the people.

A health policy will, of course, cost money. It would be the merest folly to suggest that this is irrelevant; though up to the full measure of our national production, it might well be argued, it would be impossible to spend too much on a health policy in its widest sense. For the full life which health strictly signifies is pretty much all there is to be got out of this planet by man. Short of that limit, the argument that vitally important health measures "cannot be afforded" is foolish. As Mr. G. R. S. Taylor puts it, "the quickest way of saving money on public health to-morrow is to spend it to-day. Whatever it costs to build a healthy nation is a profitable investment."

But, if we are going to talk in terms of money, we must not imagine that the expenses are all on one side. It has been estimated that, directly and indirectly, tuberculosis alone costs this country £100,000,000 a year; and in America, where elaborate investigations into this matter have been made, it is estimated that sickness and death cost the country £600,000,000 a year, and that at least one-third is preventable; the ratio of preventability being "the fraction of all deaths which would be postponed if existing medical knowledge were applied to a reasonable extent."

I have said that a sound policy must be realist. By this I mean, not merely that it should not be a sentimental one, nor merely that it must disregard the

popular clamour of the ignorant—the quieting of which, unfortunately, forms the motive of a large part of our well-sounding, but ill-doing, legislation. A much subtler danger lies in the misinterpretation of experience. In his admirable book, " Health and the State "—a book, by the way, which every one interested in the politics of health should read and study—Dr. W. A. Brend gives numerous illustrations of this sort of fallacy. Here are a few examples. The mortality of typhus in England and Wales, which, in 1869, stood at the figure 4,281, fell in 1872 to 1,864, in 1879 to 533, and in the period 1907 to 1914, to 11. As Dr. Brend says, had some protective inoculation against typhus been introduced in 1870, the fall would certainly have been attributed to it. As a matter of fact, this is generally claimed as a victory for improved sanitary methods; and it has been officially stated that " the disappearance of typhus is one of the greatest triumphs of modern medicine." How mistaken this view is, is shown by the fact that typhus disappeared from the West Highlands and West Ireland at the same time, and at about the same rate, as it did in England, yet no sanitary reforms took place in those areas. The marked decline of tuberculosis in Edinburgh which followed the establishment of the elaborate tuberculosis dispensary in that city was naturally claimed as a direct result thereof. But the fact that an equal fall in the incidence of the disease took place at the same time in Aberdeen, where no similar activity occurred, shows the fallaciousness of the conclusion.

A large number of supposed preventive and therapeutic measures which have the sanction of, possibly, a majority even of doctors, are equally founded on inadequate premises. Take the custom of the fumigation of rooms occupied by persons suffering from infectious disease. Dr. Wolcott, the Medical Officer of Health for Massachusetts, carried out a series of experiments, lasting more than a year, in order to test the efficacy of this method of disinfection. He smeared cotton-wool

with infective material derived from the noses, throats, and ears of patients in the contagious disease wards, and with material from suppurating wounds, and placed these on tables, chairs, floor, and mantelpiece of a room, which was then fumigated with every known material of fumigation—sulphur, formaldehyde, etc. The room was then sealed up and left for varying periods. He found that not a germ was injured.

These instances might be multiplied indefinitely.

At any given stage of human knowledge, a certain amount of sickness is preventable, whilst a certain amount may be classed as unavoidable. With the progress of knowledge, various diseases, previously rightly placed in the second class, are transferred to the former. Malaria and yellow fever have been reclassified in this way. Consumption is well on the way to transference. Others, including our present most deadly enemy, cancer, still remain among the unavoidables, though here, also, we may hope that the knowledge of its causation will be won before long.

A national health policy must concern itself with both groups. It is clearly a waste of energy and effort to devote to the relief or individual cure of preventible disease time and money, and skill, which might better be devoted to removing its causes. This does not mean that those whom we have allowed to fall victims, even to preventible diseases, are to be left to their fate. But it does mean that our principal effort should be directed to stopping the leak. If, as is an established fact, consumption could be reduced to a tithe of its present magnitude, by diverting half our crowded city populations to small industrial towns of the garden city type, it is clearly madness to go on allowing fresh industries to be established and fresh houses built in those great spreading wens which are gradually eating up our country and our race. No subsequent expenditure on sanatoriums, cod liver oil, and funerals, will make good the national loss which our momentary greed will have cost us. King Edward's remark, " If disease is pre-

ventable, why not prevent it ? " must be the obvious and immediate thought of every person of common-sense.

In the middle of the last century, one of the colleagues of that great pioneer of sanitation, Chadwick, said : " The human family has now lived in communities more than six thousand years, yet they have not learned to make their habitations clean. When we have learned that lesson, we shall have conquered epidemics." And another colleague wrote : " The vigour of their own lives is the best security men have against the invasion of their organisation by low, corpuscular forms of life. In unhealthy places, the exclusion of one form of disease is of little advantage, for other priests minister at the altars instead and sacrifice the victims. Man has as much power to prevent as to cure disease. It will be the duty of the Government, the municipal corporations, and all classes of citizens, to render the towns of this country, and every establishment where large numbers are collected together, perfectly adapted to the wants of the human organisation and compatible with the full enjoyment of health."

These were almost revolutionary doctrines then, commonplace as they are to-day ; and they were by no means accepted, even in theory, straight away. Still, things do move, and truth does tend to prevail. And bad as things are to-day, our death rate for 1921 was only about one-half that of 1870, and the death-rate from the group of infectious diseases of the " fever " class has dropped since Chadwick's day from 980 to 25 per million. It is, of course, to this class of illness that our most vigorous sanitary policy has been directed.

Important as philosophy is, in these, as in all other matters, it is interesting to note that it is not always embodied in those whom the world styles philosophers. Thus, speaking of these very sanitary proposals to which we owe so much, Herbert Spencer wrote : " These impatiently agitated schemes for improving our sanitary condition by Act of Parliament are need-

less, inasmuch as there are already efficient influences at work gradually accomplishing every desideratum."

Fortunately, philosophers of that school were not sufficiently influential entirely to prevent reforms, and the consequent halving of our death-rate represents about 300,000 lives saved annually.

There are, no doubt, Herbert Spencers living to-day who believe that these results are the measure of our possibilities ; who argue that little more remains to be done. But competent medical opinion is agreed that Mr. Fisher's statement, that 42 per cent. of the deaths of persons in the United States could be prevented, or postponed, " if the knowledge now existing among well-informed men in the medical profession were actually applied in a reasonable way and to a reasonable extent," applies equally to this country. There is every reason to believe, for instance, that the disease of tuberculosis, which still accounts for about one-tenth of all our deaths, could be practically stamped out by the application of our present knowledge. But so long as we choose to house our people in slums, and keep them in fundamental ignorance, what can we expect ? In 1920, an investigation was made into the dietary of a number of families living in the slums of Glasgow. It was found that one quarter of the families were getting less calories a day than the average inhabitant of famine-struck Vienna in the same year. That is to say, a little above the number required to maintain life motionless in bed, and less than half the number required by a man doing ordinary work.

But probably the most overwhelmingly convincing pronouncement on the present physique of our people is that of the report on the medical examination of recruits for the army, issued by the Ministry of National Service. Out of 2,425,184 examinations of men of military age, 871,769 resulted in the man being placed in Grade I., 546,276 in Grade II., 756,859 in Grade III., and 250,280 in Grade IV. Taking these figures at their face value, it would appear, therefore, that the neces-

sary inferences with regard to the men examined are as follows :

1. Thirty-six per cent. were placed in Grade I., *i.e.*, approximately only one in every three had attained the full normal standard of health and strength, and was judged capable of enduring physical exertion suitable to his age. The remaining 64–65 per cent., or two out of every three examined, over a million and a half in the aggregate, did not reach this standard.

2. Between 22 and 23 per cent. were placed in Grade II. ; *i.e.*, approximately one in five did not reach the standard of Grade I., and were judged to be capable only of undergoing such physical exertion as does not involve severe strain.

3. Between 31 and 32 per cent. were placed in Grade III. ; *i.e.*, approximately one in every three presented marked physical disabilities, or such evidence of past disease, that they were not considered fit to undergo the degree of physical exertion required for the higher grades. They may be regarded for practical purposes as the " C3 " men of the army nomenclature, whose physical condition became during the War a household word, which bids fair to become a standing addition to our phraseology, at least during the life-time of the present generation.

4. Rather more than 10 per cent. were placed in Grade IV., *i.e.*, approximately one in every nine or ten were judged to be totally and permanently unfit for any form of military service.

" It seems probable, therefore," says the Report, " that the men examined during the year under review may be regarded, in the aggregate, as fairly representing the manhood of military age of the country in the early part of the twentieth century from the standpoint of health and physique, and that deductions, founded upon the observations made at the medical examination of these men, may be legitimately looked upon as a trustworthy criterion of the national health of the period."

As Mr. George Bernard Shaw, in an address on the Nation's Vitality, says :

" If we take the number of babies conceived in the womb of the women of this nation, and who ought to be born, we have 938,000. The number that succeeds in getting born is about 800,000. This is not a good beginning. It means that 138,000 have not sufficient vitality to get themselves born ; it also means that the mothers were not properly fed and properly instructed. Of the 800,000 who do manage to enter the world, 100,000 die before they are one year old. This means dirty milk or no milk at all—slums, bad food, ignorance. We lose 100,000 before one year of age ; we drop another 100,000 before the age of fifteen, just when they are becoming industrial producers and available for military service ; and of the remainder who do grow up we find that another 100,000 have to be rejected for military service because they are unfit ; that is 57 per cent. destroyed in peace for the $2\frac{1}{2}$ per cent. destroyed (in one year) by the whole German army firing shot and shell at them."

ARE WE SUITED TO CIVILISATION?

WILLIAM JAMES, in his "Talks to Teachers on Psychology," tells of "a certain work of an American doctor on hygiene and the laws of life and the type of future humanity. This book contained an awful prophecy about the future of the muscular system. Human perfection, the writer said, means ability to cope with the environment; but the environment will more and more require mental power from us, and less and less will ask for brute strength. Wars will cease, machines will do all our heavy work, man will become more and more a mere director of nature's energies, and less and less an exerter of energy on his own account. So that if the *homo sapiens* of the future can only digest his food and think, what need will he have of well-developed muscles at all? And why," pursued the writer, "should we not even now be satisfied with a more delicate and intellectual type of beauty than that which pleased our ancestors? With our future food, itself prepared in liquid form from the chemical elements of the atmosphere, pepsinated or half-digested in advance, and sucked up through a glass tube from a tin can, what need shall we have of teeth or stomachs even? They may go along with our muscles, or our physical courage, while, challenging even more and more our proper admiration, will grow the gigantic domes of our crania, arching over our spectacled eyes, and animating our flexible little lips to those floods of learned and ingenious talk which will constitute our most congenial occupation."

The fact is that the laboratory-made man is, fortunately, just as impossible a creature as the "Return-to-Nature" man of another school. The problem of hygiene is no clear-cut, type-conscious, revolutionary one, but one concerned with careful adaptations, cautious experiments, and that blend of conservatism

and growth which is one of the universal stigmata of life.

The difficulties of domesticating wild animals, that is, taking them from their native quarters and conditions and placing them in an environment essentially different, are well known. Nor, in most cases, are the difficulties much reduced when the animal is captured in infancy, before it can have conscious knowledge of what it has lost.

With the exception of a comparatively few animals, the results are not only obvious psychic misery, but physical illness and often death. In a lesser degree, gardeners experience similar difficulties in dealing with plants normally growing in other climates and other soils.

The truth, of course, is that the mental and physical structure of every animal and plant has been gradually evolved through countless ages in correlation with the external conditions native to each species.

To this rule, man is no exception. The present mind and body of man were arrived at through a process of selection and elimination carried on over a period of tens of thousands of years, when the struggle of the individual with nature was much more direct and untempered than it is to-day.

In a degree apparently out of all proportion to anything that has occurred in the case of other animals, man, however, found himself the possessor of a marvellous power of constructive imagination, which enabled him to assume semi-divine powers. Therefore, instead of accepting, with trifling modifications, the environment which nature had provided, he was able to alter the conditions of his life to suit his fancy.

The result is what we mean by civilisation.

Now, measured by the clock of the gods, civilisation is a very recent matter, far too recent for the fundamental, physical and mental nature of man to have become seriously changed to fit it.

The processes of selection and elimination—the only

means we know whereby species are changed—have not yet led to the formation of a human species fully adapted to the new environment. This fact is, to a large extent, cloaked by the development of elaborate traditions, codes, and conventions, handed on, not through heredity, but by word of mouth and pen from one generation to another.

The infant taken from Belgravia and suckled by a cave-woman would not differ very materially from our primitive ancestors. It is only imaginatively, and by accumulated conventions, that man has become a little lower than the angels. His inherent impulses and native reactions are still uncommonly like those of simpler forms of life.

Impulses and instincts which have a definite biological value so long as an animal continues to live in the circumstances under which its structure was evolved may, unless guided by tradition, become extremely dangerous, both to itself and its fellows, when it is living under totally different conditions.

Thus, the instinct of the child to collect and eat sweet foods is clearly a self-preservative one among the fruits of the forest, yet a most dangerous one in the environment of a sweet-shop. The impulse to seek protection from the weather and the cold air, hygienic as it is when the cool and somewhat draughty cave measures the limit of attainable fugginess, becomes almost lethal in its effects when acted on by the occupants of air-tight slum tenements.

All this may seem obvious; yet it is but lately that doctors and hygienists have begun seriously to realise how essential it is that the conditions of our civilisation shall not too completely replace those "natural" conditions to which we are truly adapted.

Now that such a large proportion of human work is carried on within four walls, the principles on which our domestic architecture is based call for radical alteration. So long as man spent from twelve to sixteen hours each day in the open air, the comparatively enclosed condi-

tions in which he lived the remaining eight hours or so did not much matter.

For the modern town-dweller the case is altered, and an entirely new type of home is called for.

Architects and hygienists must put their heads together, with a view to the construction of dwelling places to which sunlight has full access, and bathed at all times with cool moving air. Sleeping places of the open verandah type must replace the stuffy bedroom, so that, if we are unable to spend our days amidst natural conditions, our nights, at any rate, may undo some of the evil.

In matters of food, again, we are learning the necessity of returning to a simpler and more natural life. The recent discoveries showing the fundamental importance of the so-called vitamines teach us that fresh milk, vegetables, and fruit cannot be replaced by the tinned product or the tabloid.

But far and away the most important modification in the conditions of life, brought about by civilisation, is the removal, and, one hopes, the increasing removal, of many of those lethal forces which made necessary in primitive times a powerful reproductive instinct adequate to keep pace with them. The force of the reproductive instinct itself remains almost as powerful as ever. But it is no longer adapted to the situation which the reduction in the death-rate has brought about. It may be true, as a large number of people, especially Socialists, allege, that the world is still capable of adequately feeding its existing population, and even a considerably increased one. But these people fail to realise what is the real capacity of the human population to increase when hygiene has done its best to reduce the death-rate, and the motives for voluntary restriction are removed. The population of England and Wales in 1801 was under nine millions. In fifty years it was over 18 millions, even with the death-rate as big as it then was. Were even that rate of increase continued the population of England and Wales in 300

years from now would be over $2\frac{1}{4}$ thousand millions. Now it is just conceivable that within that period of time scientists will have discovered methods of food production directly from elements contained in the atmosphere and in the crust of the earth which would make the existence of this crowded nest of human ants possible, at any rate, so far as mere nutriment is concerned. But, leaving aside the unwisdom of gambling on the possibility of future discoveries to this extent, few who care for what we agree are the finer things of life can contemplate such conditions without disgust. Surely it is quality of life rather than mere quantity at which we should aim. Even were the unpleasant old ideal of England as the workshop of the world still a practicable one from an economic point of view, we have accumulated sufficient experience to teach us that it is not hygienically workable. Continuous factory, or even city, life, even in the most up-to-date conditions, is not a healthy life for a normal man. The further we get away from the open-air surroundings to which man's structure is truly adapted, the further we get away from real mental and bodily health. Urban life may be tolerated for a generation or so, but town populations need persistent renewal from the country if they are to continue. The country-bred constitute most of the successful city men, whether they are financiers, or managers, or foremen.

But, as a matter of fact, a population as dense as that of England at the present time, apart from all questions of further increase, can, in the present state of knowledge, be supported only so long as other countries produce more food than they need, and find it more profitable to let us make manufactured goods for them in exchange for their surplus than to make these goods for themselves.

Now it is obvious that country after country, from which we have been accustomed to obtain food and raw materials in exchange for manufactures, is tending both to manufacture for its internal consumption those goods

which it formerly imported, and to need for its own population an ever larger amount of the food which it grows. We, in consequence, are likely to become increasingly dependent on the food we grow ourselves. And the necessity for limiting the growth of our population will become even more urgent than it is at present. Fortunately, we are displaying signs of that power of adaptation to the new circumstances of civilisation, of which we have had such repeated manifestations in the past. Everywhere a growing proportion of the educated classes is deliberately intervening in order to produce such a modification in the consequences of natural forces as the new time and new conditions demand for our welfare. The law which Malthus first clearly enunciated, after being derided for a century by the shallow and the sentimental, is found in reality to embody a truth from which there is no escaping. Nature's method, whereby thousands are spawned that one individual may luckily survive, strikes the modern man, presumptuous though it may seem, as capable of improvement. Consequently, the birth-rate in Hampstead, which in 1881 stood at thirty, fell in thirteen years to seventeen, to the advantage of all concerned. Unfortunately, neither the new gospel nor the prudence based on hope, on which the gospel relied for its practical application, has yet spread to the poor and uneducated, where they are more needed. And so we find the birth-rate in Shoreditch, which in 1881 was practically identical with that in Hampstead, remaining at the same figure thirty years later. But the practice of the limitation of births will spread. Even the curate on £70 a year is becoming satisfied with a family of six or seven at most ; and, in spite of the hysterical protests of a few celibate bishops, who call on a progressively reluctant people to breed more and quicker, the birth-rate steadily declines. Doctors, who have for long been converts in their own domestic lives, now openly support Malthusian practice, and even the very deans are joining up. Poverty and ignorance—the very

circumstances that go with a heavy infant mortality—are the conditions which offer the greatest resistance to a moderated birth-rate.

The Registrar-General gives figures showing the births in 1911, classified by social grade, and also shows the infant mortality rates for each group :

	Births per 1,000 married males under 55 years.	Mortality in the first year of life.
Upper and middle class ..	119	76·4
Intermediate	132	106·4
Skilled workmen	153	112·7
Intermediate class	158	121·5
Unskilled workmen ..	213	152·5

Many people who object on religious, æsthetic, or sentimental grounds to the processes of conception and fertilisation being other than automatic, and feel somehow that reason, prudence, and consideration for others are indecent in connection therewith, try to convince themselves that the recent fall in the birth-rate among the educated and well-to-do classes is a natural result of better food, a more active mental life, and a larger number of bedrooms. No facts can be adduced to support this contention. The average slum-dweller, who has little to gain and little to lose by prudence or its neglect, and is, moreover, ill-informed as to the measures necessary to prevent conception, lets nature take its course. The upper and middle classes are little, if any, more ascetic in their conduct than, and are, for the most part, quite as potent and fertile as, their poorer neighbours ; they are merely better informed and have more to gain by the exercise of forethought.

Need we wonder at the popular alarm at the fact that the well-to-do are limiting the size of their families, although the poor still breed like rabbits ?

Dr. Heron, speaking of London, summed up the facts thus : " In those districts where the professional classes are most numerous, and where many domestic servants are kept, there the married have fewest children. In

districts where there is overcrowding, where there is a superabundance of the lowest type of labour, where child-employment is most prevalent, where infant mortality is greatest, where pauperism is general and pauper lunatics are plentiful, where signs of bad environment like phthisis are prevalent—there the birth-rate is highest."

In Scotland it is found that crofters, miners and labourers have on an average twice as many children as do solicitors and doctors. In Philadelphia a recent inquiry showed that the birth-rate per 1,000 was 18 in the expensive residential districts, 21 in the well-to-do districts, 24 among the American-born factory workers, and 42 among the worst paid immigrants. And an investigation made a few years ago into the class birth-rates of Paris and Berlin educed the fact that in very poor districts the birth-rate was some 50 per cent. higher than among the comfortably placed, and more than double the birth-rate of the very rich. In 1921 the birth-rate of Hampstead was 15·6, and of the City of Westminster 13·6, whilst that of Poplar was 27·6, and of Shoreditch 29·3. But whereas the infant mortality of Hampstead, which in 1913 was 68·6 per 1,000 births, had been reduced to but 65 in 1921, that of Shoreditch, which in 1913 was 150·8, had been reduced by nearly one-third in 1921. In these figures many will see an element of national danger; and Professor McDougall pessimistically concludes that "it is the paradox and tragedy of high civilisations that, in the present and in all preceding ages, its tendency has been to destroy or eliminate just those mental superiorities by which it has been built up, and which are essential for its maintenance and further progress." On the assumption that it is the least desirable section of the community, from the eugenic point of view, that tends to increase out of all proportion to the better-to-do classes, even after the difference in death-rate has done its worst—or, as eugenists may think, its best—it is not unreasonable to argue that in the steady reduc-

tion of the infantile death-rate among the rapidly multiplying poor, we are facilitating the decadence of our civilisation. There is no getting away from the truth of Galton's observation that "our human civilised stock is far more weakly through congenital imperfections than is that of any other species of animal, whether wild or domesticated." But, before we can entirely agree with these pessimistic critics, we must ask and answer several questions.

In the first place, is disease a satisfactory instrument for effecting the survival of the fittest? Secondly, are class divisions a true measure of racial desirability? And, thirdly, in any event, is there not some more desirable method of maintaining the health of the race than the method of infanticide, even though the latter, in its cruder form of exposure, was advocated by Plato and Aristotle, and formed part of the actual laws of Solon and Lycurgus?

Before the days of caste distinctions involving great differences in the conditions under which the several classes pass their lives, disease may have had a certain racial value. Given equal conditions, it may be assumed that on an average it would be the weakliest children, at any rate those least fitted to their environment, that would be the first to die, and certain of the deaths which at present take place during the first month of life may be assumed to come under this heading. They, presumably, are largely due to inherent lack of vitality. But the interesting fact about the mortality of infants in their first month is the relatively small difference in rate between the rich and the poor; between Hampstead and Shoreditch. It is only afterwards, when the great differences in the environment of the several classes have had a chance of acting, that the enormous increase in the mortality rate of the poor shows itself. Moreover, no doctor who has had experience of maternity practice in the slums of our cities can have failed to be struck with the high average of vigour and obvious healthiness among the children even of the

poorest at the time of their birth. As a fact, most of the disease which accounts for the higher mortality rate among the city poor is related directly to the artificial conditions under which they are forced to live. There is no reason to suppose that the dock labourer of Poplar is a more degenerate or weak-minded person than the agricultural labourer. Yet the infant mortality of the farm labourer class is little or no higher than that of the well-to-do classes of the town.

If we rear 100 chicken in a large orchard it is easy enough to keep away disease. It is by no means so easy when we attempt to rear them in a sunless building, 20 feet by 10. Nor do the majority of diseases pick out, even in the slums, the feeblest in body or in mind. They pick out those who are particularly susceptible to them. It is well known that many native races tend to disappear when brought into contact with the diseases of civilisation, and no stretch of imagination can enable us to conclude that these people's unfitness is thereby proved. They were fit enough in the environment they enjoyed before we corrupted it. One might as well lament the absence of such eliminators as earthquakes as look askance at the efforts of hygienists to diminish the mortality among the children of the poor.

There is, however, no getting away from the fact that the richer classes, relatively to the poorer classes, tend to die out or to be swamped. Thus the Report of the National Birth-rate Commission points out that, whereas among the upper and middle classes we had 119 births in 1911 for every 1,000 males under fifty-five years of age, among skilled workmen the number was 153, and among unskilled workmen 213. And, although the infant mortality rates among these three groups was 76, 112, and 152 respectively, the initially higher birth-rate of the lower classes was not so reduced by a heavier infant mortality as to bring their respective birth-rates into approximate equality with the wealthier classes.

But is this such a very serious matter after all ? Pro-

fessor McDougall seems to recognise in it the forerunner of the inevitable disappearance of our civilisation. In his "Group Mind," he writes: "Looking at the course of history widely, we may see, in the differentiation of the social classes by the social ladder and in the tendency of the upper strata to fail to reproduce themselves, an explanation of the cyclic course of civilisation." Here the fallacy arises from the ludicrous postulate. His conclusion is based on the idea that members of the well-to-do classes are persons who, by native superiority, have been enabled to climb some physical or psychic ladder equally available to their less capable countrymen. Nothing but the completest inexperience can account for any one's supposing that there is a social ladder up which any slum-born child may climb if he has reasonable ability and will. And only the habit of confining one's companionship to men distinguished in the arts and sciences, carefully avoiding clubs and country houses, and other haunts of the well-to-do classes, can make it possible for an intelligent man to assume synonymity between a full purse and superior capacity of mind or body.

After elaborate inquiry, the National Birth-rate Commission, whilst agreeing that the birth-rate in Great Britain is strongly selective, the nett as well as the gross surplus of births over deaths varying (as a rule) inversely with the social position of the family, while the physical and mental inferiority of the most fertile social strata, except in the mining districts, is indisputable; still comes to the conclusion that "the greater part of this class inferiority is probably due to bad environment, and deprecates the tendency to identify the economic *élite* with the psycho-physical *élite*. The Commission does not, of course, seek to deny the inheritance of both mental and physical characters, and it recognises that legislation which ignores the facts of variation and heredity must ultimately lead to national deterioration; but it cannot accept the hypothesis that the broad distinctions between social

classes are but the effects of germinal variations, and is satisfied that environmental factors which cannot be sensibly modified by individuals exposed to them, however gifted, often prevent the utilisation of natural talents."

So that our hope should be, not that the rich may have more children, but that the poor may follow their example and have less.

The Commission summarised its findings as follows : "We consider that the following propositions are definitely established—

"1. That the birth-rate has declined to the extent of approximately one-third within the last thirty-five years.

"2. That this decline is not, to any important extent, due to alterations in the marriage rate, to a rise of the mean age at marriage, or to other causes diminishing the proportion of married women of fertile age in the population.

"3. That this decline, though general, has not been uniformly distributed over all sections of the community.

"4. That, on the whole, the decline has been more marked in the more prosperous classes.

"5. That the greater incidence of infant mortality upon the less prosperous classes does not reduce their effective fertility to the level of that of the wealthier classes. We consider that the following propositions, although based upon evidence less substantial than that upon which conclusions 1 to 5 rest, are also sufficiently well established.

"6. Conscious limitation of fertility is widely practised among the middle and upper classes, and there is good reason to think that, in addition to other means of limitation, the illegal induction of abortion frequently occurs among the industrial population.

"7. There is no reason to believe that the higher education of women (whatever its indirect results upon the birth-rate may be) has any important effect

in diminishing their physiological aptitude to bear children."

It would, of course, be idle to dispute the statement of Herbert Spencer: "The law that each creature shall take the benefits and the evils of its own nature has been the law under which life has evolved so far. Any arrangements which, in a considerable degree, prevent superiority, or shield inferiority, from the evils it entails—any arrangements which tend to make it as well to be inferior as to be superior—are arrangements diametrically opposed to the progress of organisation and the reaching of a higher life." But the question is, What is superiority, and what is inferiority? In a primitive state, with law embryonic and tradition weak, the question would not be difficult to answer. The physically strong and the cunning would be the superior; the gentle and the honest the inferior. To some extent that holds good to-day; but, owing to the elaborate development of the social code, backed by laws, policemen, and Maxim guns, the superiority of physical, or even mental, strength as factors tending to class distinction and survival is not so obvious. Even when the individual manages to scramble up the social ladder, out of the class of his parents into the class of the financially prosperous, it is by no means always through the possession of qualities which most of us admire, or even of qualities beneficial to the community as a whole. Callousness, greed, and crude egoism often play at least as considerable a part as do talent, industry and social enthusiasm. But the majority of the well-to-do do not owe their position to their own climbing efforts; their father, or their grandfather, or some more remote ancestor, did that for them; and only a small proportion of the descendants of the prosperous ever fall back into the pit. Our social and legal code keeps them up; and both history and the known facts of heredity show us that there is little more reason to expect physical or mental superiority among the children of the rich than among children of the poor. This truth is largely

cloaked by the effects of the altogether different environments in which the children of the two classes are brought up. But I think that if 100 babies from Stepney and 100 from Mayfair were removed at the moment of birth and brought up under similar conditions, one would be hard put to it at the end of fifteen years to pick out the blue-blooded from the red.

People commonly overlook the enormous part of our heredity which is not conveyed in the germ plasm but in social tradition. For the one is as vitally a continuum as the other. A child suckled and trained by a wolf would be as unlike what we understand by a human child as a solitary wasp is unlike a member of a hive. Actually, of course, the experiment is impracticable, so essential a factor in life is our social heritage. Man is uniquely placed in this matter in that he is born helpless, with a minimum of detailed instincts ; and that for a period extending over years he is dependent upon the care of his elders, his generalised instincts during all this period being capable of adaptation to almost any ends that society may dictate. Education and habit in man take the place of those elaborate and minutely detailed instincts which in many animals—most remarkably, perhaps, among insects—are actually transmitted in the germ plasm, and thus form part of the creature's equipment independently of education or other social influence.

The fact that, unlike almost every other species, man can live and thrive in practically every climate from the Equator to the Pole ; can nourish himself with an almost infinite range of foods from rice to whale blubber ; and can house himself with reasonable success in snow hut, or slum tenement, or covered nest in the trees, but serves to illustrate the marvellous power of mutual adaptability between his internal organism and his physical environment. In every case this adaptation is made generally effective through tradition. Whether or not individual experience is directly inheritable, in the old sense of transmission through the

germ plasm, it is certainly transmitted in the no less effective way of family or racial tradition.

In spite, however, of its supreme importance, the process of handing on the ever-developing social heritage of our race is commonly treated by our statesmen, and regarded by most of the public, as a mere matter of teaching the arts of reading, writing and arithmetic, together with, among our more advanced and progressive spirits, a certain amount of calisthenics, Morris-dancing, and watery ethics. Here it is that the well-to-do classes get such a pull. Tawdry, by the side of what is desirable and possible, as even ordinary middle-class education is, yet, compared with that ladled out in their homes and schools to the great bulk of our people, it has a value which makes any difference in germ plasm insignificant between the different classes. Before our eugenists are allowed to get on with their castrations and sterilisations (though even these may be necessary in dealing with aments), therefore, there is plenty of work to be done in improving and rendering available to all the institutions and accumulated knowledge which form a part of the heritage in which we have common claims and common right. The enclosure of "commons" is a trifle compared with the enclosure of civilisation which we have allowed to take place. And the restoration to the people of their heritage, material, intellectual, and æsthetic, is about the earliest step that is necessary in a sound health policy. To extend one's boundary wall round the common land, or to cut off the right of way with barbed wire, is evil enough; but to shut out the sunlight and the fresh air, and to corner life-giving knowledge accumulated through the centuries, is a sin difficult to be forgiven.

OVERCROWDING DISEASE

WHEN a gardener sows an ounce of lettuce seed in a drill but a few feet long, unless he drastically thins the seedlings as soon as they appear, he will raise no plants worth eating. Most of the young lettuces will die. A few will survive as thin, spindly specimens, and one or two will possibly reach the flowering stage. No doubt vegetable pathologists would find that some of the plant victims died in one way ; others in another ; and, according to the symptoms presented, different disease-names might be given to them. But, from the gardener's point of view, there would be but one disease, the disease of overcrowding. For it is that which would be the common cause of the sickness and death. The poultry farmer who attempted to rear a few hundred chickens in some twenty square yards of ground would be in much the same position as the gardener.

A similar state of affairs confronts the human community. And wherever human beings are densely herded together, as in the slums of our cities, we find sickness and death directly resulting therefrom. Here, also, according to the symptoms presented, the several victims are said by the pathologists to be suffering from this, that, or the other disease. But, if we are out to remedy matters and not merely from idle curiosity, we shall not bother our heads too much about these fine distinctions. There is one cause and one cure for more than half the disease that ravages the urban poor. And it is only the fact that in the past our efforts have been mainly individual and palliative, rather than general and preventive, that we have come to look upon most of these different ways of being ill as distinct and detached phenomena.

Let us consider one or two of the chief groups into which overcrowding disease has been classified. About

one-tenth of all the deaths which occur in this country are from tuberculosis. This disease is responsible for about one-half of all the deaths that occur in the prime of life, that is, between twenty and forty-five years of age, and it is mainly the result of urban poverty. As showing the direct causative, as well as consequent, relation between tuberculosis and poverty, the Charity Organisation Society of New York gives the following figures as a result of the social study of thirty-five families suffering from this disease :

" Classifying these thirty-five families in an attempt to relate their economic dependency to their tuberculous condition, we find that—

" (*a*) Prior to tuberculous infection, twenty-one families were apparently self-supporting ; eight families were occasionally dependent ; six families were chronic dependents.

" (*b*) After tuberculous infection : One family still apparently self-supporting (received sanitation outfit only) ; twenty-seven families received occasional relief ; seven families were chronic dependents (*i.e.*, received some regular allowance, which was main support of family)."

In four years, nearly half as many deaths occur from tuberculosis in this country as our total deaths in the four years' war with Germany. But this mortality rate is distributed by no means evenly over the country. In London and the big county boroughs it is more than double that in the rural districts. And within London itself it is from two to three times as frequent in the crowded central districts of Finsbury, Shoreditch, Bermondsey, and Stepney as it is in the outer and less crowded districts of Hampstead, Lewisham, and Wandsworth. And even within the crowded districts themselves, the mortality in the one- and two-roomed tenements is over double that in the tenements of three or more rooms. Dr. Addison, the late Minister of Health, says that in one London borough only eighty-six out of 482 consumptive patients, whose conditions

were investigated, had a bedroom to themselves ; whilst nearly all the remainder shared not only a room, but a bed with some one else. And, in another case, only 134 patients out of 766 had a bedroom to themselves, and 453 of the remainder shared a bed with one or more members of the family.

A poultry farmer who found his stock dying day by day under parallel conditions would scarcely be so whimsical as to tackle the problem by organising "Overcrowding Dispensaries and Clinics," where his fowls might be weighed weekly ; or even to send away the ailing fowls, a few at a time, for a month or two's stay at a healthier farm, only to return them to their old crowded yard. For all our tuberculin inoculations and sanatoria lead us nowhere. Of course, it is good that every one should spend at least three months of his life in healthy conditions, but to regard that as an adequate reparative measure for the evils of twenty or thirty years of slum life is the merest trifling. Even so far as the individuals themselves are concerned, the effect of a short spell of sanatorium life does little to postpone their death. Messrs. Elderton and Paten, who made an elaborate study of the relative statistics, found that the mortality among sanatorium patients showed no appreciable improvement on that of patients in pre-sanatorium days. It is, of course, true that some persons are more susceptible than others to the invasion of the tubercle bacillus. But the conditions under which the bulk of the poor live in cities make nearly every one susceptible. It is the combination of over-crowding, sunlessness, and poverty, that is responsible for the greater part of the tuberculosis death-rate. Dr. Burrell, one of the physicians at the Brompton Hospital, says that one always finds a constant relationship between overcrowding and consumption. And he points out that a man is made susceptible, not only by the actual overcrowding, but also by the dirt, the lack of good or even sufficient food, and the misery and absence of hope which go with it.

Let us consider another manifestation of the overcrowding disease, as summarised in the infant and child mortality rates. About one-sixth of all the deaths which occur each year in England take place in the first year of life. But here, again, as with tuberculosis, this infant death-rate is not spread evenly over the country. In Shoreditch it is nearly double that of Hampstead. In the county boroughs it is in most years nearly double that in the rural districts. The differences in child mortality during the second and third years of life between the cities and the rural districts, and between the crowded slums and the well-to-do suburbs, are very much greater, often amounting to 300 per cent. That these great differences in infant and child mortality are not due—as many complacent people would like to believe—mainly to the degeneracy and ignorance of the poor, is shown, firstly, by the fact that in the first month of life, when the effects of inherent degeneracy would be most obvious, there is little to choose between the mortality rates of the slums, the suburbs, and the villages ; and by the equally convincing fact that the infant mortality rate among the country workers, who cannot be accused of a higher degree of culture than their urban cousins, is no higher than among the well-to-do suburban residents. Sir John Gorst says : " I have seen magnificent children living in hovels condemned as unfit for human habitation in the West of Ireland, models of health and vigour. The explanation was that they lived almost entirely in the open air. The children of gypsies and vagrants, who live in tents on commons, though filthy and untaught, are far healthier in their free, open-air surroundings, than the corresponding class in the slums of the city."

It is the combination of overcrowding in the smoky atmosphere of cities, with general poverty and hopelessness, that makes up the real cause of the greater part of these deaths. In 1915 the infant mortality in Birmingham among the very poor was 200 per 1,000 births, as compared with 50 among the middle class

and rich. If further illustrations are necessary, the following figures may serve. They show the contrast, not between the worst areas and the best, but between bad areas and fairly decent artisan areas :

BIRMINGHAM (5 Years).

	Bad Area.	Fair Artisan Area.
Death-rate	21·1	12·3
Birth-rate	32·8	.. 24·0
Infant mortality rate	171	.. 89

LIVERPOOL (5 Years).

	Bad Area.	Populous Artisan Area.
Death-rate	27·5	.. 17·8
Birth-rate	38·9	.. 29·5
Infant mortality rate	164	.. 123

MANCHESTER (5 Years).

	Bad Area.	Populous, Mainly Artisan Area.
Death-rate	23·86	.. 12·93
Birth-rate ..	29·01	.. 21·77
Infant mortality rate	166·3	.. 111·57

LONDON (5 Years).

	Bad Area.	Mainly Artisan Area.
Death-rate	18·6	.. 12·4
Birth-rate	32·1	.. 23·4
Infant mortality rate	147	.. 83

ABERDEEN (1911 and 1912 Combined).

	Rubishaw.	Greyfriars.
Death-rate	10·2	.. 16·3
Birth-rate	16·2	.. 34·1
Infant mortality rate	83	.. 170

It is sometimes argued that it is the employment of women in factories that is the basic cause of the high infantile mortality of the towns ; but Dr. Robertson found that in Birmingham, when the father's earnings were less than £1 a week before the war, the infant mortality averaged 191 if the mother was unemployed, and was only larger by 12 if she was employed in a

factory. On the contrary, if the father was earning over £1 a week, the infant mortality dropped to 123 even if the mother was employed at a factory. A comparison of the statistics for Salford and Birmingham over a period of years is very convincing as to the secondary part which the employment of women plays as compared with the home environment and the total earnings. A typical instance of this misconception was afforded by Dr. Saleeby, who, in a lecture delivered in 1918, pointed out that in Bradford, in spite of the splendid organisation and efficiency of its Public Works and Infant Welfare Department, the infant mortality rate was 132 in 1916; while in Connaught, where there were poverty and bad conditions, and little or no public effort, the infant mortality was only about 50. He goes on to say: "But the Connaught babies have healthy mothers with an extreme minimum of syphilis, who stay at home and feed them as no science can feed them, and the babies live," while in Bradford "practically all the mothers go out to work."

The following table, however, comparing the infant mortality in Bradford and Sheffield, in view of the fact that in Sheffield the mothers did not go out to work during the war, illustrates the fallaciousness of these conclusions:

INFANT MORTALITY RATE IN SHEFFIELD AND IN BRADFORD.

1909–13 Average 5 years: Sheffield 124, Bradford 121
1914–18 Average 5 years: Sheffield 121, Bradford 124

If it should be thought that the heavy infant mortality of the slums does, at any rate, leave a population of children relatively fitted for the horrible conditions in which they have to live, a study of the following table may prove instructive. A series of groups of registration districts are taken, of varying degrees of unwholesomeness, strictly reflected in the infantile mortality rates—that is, the number of deaths in the first year out of every 1,000 children born. The table

shows in respect of each of these districts the mortality of children between two and three years of age. It will be seen that the cumulative effect of the environment on the survivors is even greater than than shown by the mortality during the first year of life :

Infantile Mortality.	Mortality between 2 and 3 years of age.
84	9·7
96	8·8
105	10·4
115	10·7
125	11·8
135	12·8
144	14·3
154	16·0
165	18·4
175	21·7
185	23·9
194	26·3
204	25·7
214	29·4
225	36·7
237	40·4

Thus, while the infantile mortality in the worst districts is nearly three times that in the better districts, the 2-year-old death-rate in the former is well over four times that in the healthier districts.

Nor does the effect of overcrowding and urban poverty conditions generally end with childhood. Between the ages of forty and fifty the death-rate in the unhealthy districts is from two to three times greater than in the healthy ones. Dr. Ashby points out that : " It is a fallacy to think that it is only the fittest of the infants who survive. Many of the healthiest succumb, and many of the weakliest survive, and the elimination is by no means selective." And, in any case, as has been truly said, " the protection of the weak is the protection of the strong from deterioration."

The whole matter is well summed up by Professor R. T. Hewlett thus : " The following is a statement of the total number of deaths from various conditions, in children from one to five years of age, during 1917. They are arranged in the order of their relative importance as causes of death : Pneumonia (all forms), 8,942 deaths ; measles, 7,432 ; tuberculosis (all forms), 4,587 ; bronchitis, 2,600 ; whooping-cough, 2,539 ; diarrhœa, 2,457 ; diphtheria, 2,208 ; rickets, 546 ; and scarlet-fever, 382. Altogether these represent well over 30,000 deaths, the majority of which are from preventible causes.

" The mortality of young children, similarly to that of infants, is greater in the towns than in the country ; is higher in the industrial towns than the residential towns ; and is also higher in the slums than in the districts occupied by the well-to-do people. For example, children in a country district like Tunbridge Wells have a mortality rate of 12 compared with Middlesbrough 70 and St. Helens 69. One town, more or less residential in character, like Southend-on-Sea, has a child mortality rate of 12 compared with Liverpool 50 and Wigan 48. In the town of Middlesbrough the child death-rate from 1911–1914 was two and a half times as great in the industrial portion of the town as it was in the residential districts. These figures repeat themselves over and over again in every part of England—industry, slums, and poverty, are associated with a high rate of child mortality.

" The well-to-do classes have fewer children and manage to rear the majority of them ; labour has many children, and many of them die. It has been argued, fallaciously, we think, that the survival of the children of the one class and the non-survival of those of another is merely the survival of the fittest ; but let the doctor, the lawyer, and the squire, move into the unhealthy slum with their families, and let the artisan occupy their country residences—then the incidence of infant mortality would not be greatly altered. The slum

would continue to claim its toll of child life, and the child in the country would continue to flourish. It is environment rather than the factor of parentage that makes or wrecks the health of a growing child, provided always, of course, that it is not suffering from inherited disease."

But it is not the tuberculosis rate, or the infantile mortality rate, or any other sectional division, that we need exclusively to consider. In 1913 it was found that the death-rate in the one- and two-roomed homes of Bradford was more than double that in the four-roomed homes, and three times that among those who occupied five rooms and over; and in spite of the low wages and bad housing of the agricultural labourers, the general death-rate in the rural districts of South England is little more than half that of the county boroughs of the North.

Mr. H. J. Wilson, Superintending Inspector of Factories in Scotland, has published a table giving statistics obtained from the medical examination of recruits, together with others collected by himself, which show differences in height and weight of workmen of purely agricultural origin, who had spent the whole of their period of growth in rural districts, and craftsmen and labourers born and brought up in industrial towns. Here are some of the results:

	Average Height.	Average Weight.
Country-bred men	5 ft. 9 in.	12 st. 4 lb.
Public school men	5 ft. 9 in.	11 st. 1 lb.
Sheffield grinders	5 ft. 4½ in.	9 st. 10 lb.
Birmingham brass-workers.	5 ft. 6½ in.	9 st. 8 lb.
Glasgow labourers	5 ft. 2 in.	8 st. 12 lb.

The Census of 1911 showed that half a million of our people occupied one-roomed homes, two millions occupied two-roomed homes, and four and a half millions had only three rooms. In Scotland, nearly half of all the homes contain no more than two rooms.

All these figures go to show how intimate is the con-

nection between the mortality rate, mal-development, bad housing, and overcrowding. The exact nature of the connection, however, is not so obvious. Is it the bad housing and overcrowding which cause the increased mortality; or are the overcrowding and high mortality both the fruits of some other evil tree—poverty, for instance, or mental, or physical degeneracy, or ignorance? It is certain that the proportion of weak-minded, unintelligent, and careless persons is greater in the slums than in the suburbs, for failure tends to gravitate there. But in the light of what we now know of the principles of heredity, this can account for but a tiny part of the difference in healthiness. Moreover, inherent hereditary feebleness would, as already pointed out, produce its maximum effect on the mortality rate in the first few weeks of life, before environmental conditions had had time to make very much difference. But we learn from the Registrar-General's returns that the deaths from developmental conditions in the first month of life, per 1,000 births, amount to about 22 among the middle and upper classes, to about 30 among textile workers, miners, and unskilled workmen, and 25 among shopkeepers. The relatively small differences between these figures is easily accounted for by the additional care which the well-to-do are in a position to give. They certainly do not point to any startling class superiority or inferiority in congenital vitality, when we remember that the total deaths among infants in their first year per 1,000 births among miners and unskilled workers are just about double those among the middle and upper classes. It is clear that some factor other than heredity is mainly responsible. Nor, for reasons already stated, can differences in education afford the main solution. We are thus driven to the conclusion that healthy life in town conditions is impossible for man as he is constituted, unless it is accompanied with housing accommodation well above the average, with a reasonable amount of education, teaching one how to adapt one-

self to unnatural circumstances ; and with considerable leisure and financial means to carry this teaching into practice. In plain words, whilst it is possible to live and bring up a family healthily in a house with a decent garden in Hampstead or Lewisham, if one has an income of £500 or £600 a year, all the sanitary inspectors and public health legislation in the world cannot make it practicable to do the same in a one- or two-roomed tenement in the slums on £2 a week.

It is therefore utterly futile to discuss schemes for the improvement of the national health unless we are prepared, as a primary consideration, to provide every family in the country with a decent home, affording the minimum conditions in which a healthy life is even possible. Before going into further detail, it may be as well to consider what are the fundamental conditions that mark out an unhealthy and a potentially healthy home respectively.

It may be said at once that the mere physical fact of overcrowding, that is to say, of three or four people spending several hours a day within a few feet of one another, is not necessarily hostile to health, objectionable as it may be from a psychological point of view. Nor, apart from infectious disease such as phthisis, is there likely to be any great harm from the contamination of the air with human breath, unless doors and windows are hermetically sealed—æsthetic considerations aside. Indeed, it is probable that, given plenty of money and leisure, a perfectly physically healthy life could be lived by a small, intelligent family in two rooms, each 14 feet square, if these rooms were scientifically and hygienically constructed as a complete home in accordance with modern knowledge. But it is not such people who are called upon to live in the slums. The occupants of one- and two-roomed tenements are people too poor to make structural alterations in them ; too poor to get away from them for a breath of decent air, even had they the leisure ; too poor to equip them as they might be equipped. Moreover, these

dreadful homes are almost always situated in the most crowded parts of towns, without gardens, bathed in an atmosphere so smoke-laden that the sun either fails to pierce it or does so but with attenuated power. Without sunlight and fresh, moving air, health for man is impossible; and housing enthusiasts will be wise to remember this. To replace the existing slums of our cities by new houses in the same or similar situations, amidst the same or similar surroundings, would prove a very wasteful and disappointing bit of national work. It is probable that most of the existing inhabitants of Stepney, and Shoreditch, and Bethnal Green, would ask nothing better than to be provided with smarter and more comfortable homes built on the identical spots which they now occupy. If we are out merely to give the people what they individually want, that is undoubtedly the sort of thing we shall have to do. If, on the other hand, we are out seriously to improve the health and ultimate happiness of the people, a very different line will have to be taken.

It is desirable not to consider the problem of national housing from too sentimental a point of view. A dentist who is afraid to give momentary pain will never cure the toothache. A doctor who prescribes morphia for every discomfort is not the one who deserves the most gratitude. We have to think of next year and twenty years hence, as well as of to-day; and it is a new England we have to build, not merely a renovated Whitechapel. If we build houses really adapted to the full and healthy life of intelligent people—and we ought to be a party to building very few others—they will, for the most part, be occupied by those who can best appreciate them rather than by those dehumanised and demoralised by the worst conditions of slum life. It is to the homes vacated by the former that we may hope the others will migrate, thus rendering vacant, and so available for demolition, the worst of our city warrens. It is by this process of graduated hygienic upward movement that real progress and permanent improve-

ment may be won. We have been always taught that bad money tends to drive out good. The reverse principle will be found to hold good in the matter of housing, and, let us hope, of industry generally.

In reply to those who say that the poor are too inherently dirty to be trusted with good houses, Professor R. T. Hewlett has pointed out that the poor are often unclean because, firstly, soap costs money, and, secondly, they have no proper place in which to wash themselves or their children. Those who consider that the labouring classes are dirty because they like it have only to watch the children from the slums who are given the opportunity of bathing. Cleanliness is at present a luxury of the well-to-do classes; in the future we shall see it a pleasure which other classes will be able to share. Jokes about "The Great Unwashed" are in bad taste.

The real sequence of events has been well and clearly stated in an official pronouncement of the Ministry of Health, through the pen of the Chief Medical Officer:

"As a result of ill-housing, there is diminished personal cleanliness and physique leading to debility, fatigue, unfitness, and reduced powers of resistance. The Royal Commission on Housing of 1885 reported that in districts characterised by bad housing, workpeople lost on an average 'about twenty days in the year from simple exhaustion . . . That overcrowding lowers the general standard, that the people get depressed and weary . . . The general deterioration in the health of the people is a worse feature of overcrowding even than the encouragement by it of infectious disease. It has the effect of reducing their stamina, and thus producing consumption and diseases arising from general debility of the system whereby life is shortened . . .' The Glasgow School Board found that the children coming from one-room homes were the lowest in height and weight. The very expectation of life is reduced in badly-housed, as compared with well-housed, communities.

" A second result of bad housing is that the sickness rates are relatively high, particularly for infectious, contagious, and respiratory diseases. Sir Shirley Murphy showed in 1898 that in districts of London where overcrowding (more than two persons in one room in tenements of less than five rooms) was under 10 per cent. the death-rate from pulmonary tuberculosis was 111 per 100,000 people; but where the overcrowding was over 25 per cent., the corresponding death-rate was 209 to 259 per 100,000. In Glasgow the death-rate from measles, whooping-cough, and diphtheria, was shown by Dr. Chalmers to be four times greater in one-apartment homes than in four-apartment homes and upwards. But the experience is universal. Bad housing increases the incidence of all infections, contagious, and verminous conditions, of respiratory disease and anæmia, debility and constitutional maladies.

" Thirdly, the general death-rates are higher and the expectation of life is lower. The evidence is overwhelming, and it comes from all parts of the world—the worse the people are housed the higher will be the death-rate."

No less convincing and authoritative is the Report of the Ministry of National Service on the medical examination of recruits for the army. One of the most striking conclusions reached was that the physical condition of the manhood of the country is very much less determined by industrial conditions than by conditions of housing, feeding, and social surroundings. This, of course, refers to the actual nature of the industries in question, apart from the comfort, etc., accruing as the result of that labour. " Another outstanding feature was the very large number who were graded low, not because of active disease, but because of disability, the result of physical defect, often preventable, arising during the course of growth and development, *e.g.*, flat foot, hammer toes, spinal curvature, varicose veins, hernia, or varicocele, and again largely influenced by

social conditions, housing, and feeding. This was particularly noticeable between the ages of eighteen and forty. Above the age of forty, with each advancing year, the effects of disease, and of advancing dissolution, of excess of breaking down over building up, caused low grading to show an ever rising curve."

The evils of urban housing are an old story, as the following extract from a tract of the time of James I. shows: "The desire of Profitte greatly increaseth Buyldinges, and so muche the more for that this greate Concurse of all sortes of people draweinge nere unto the Cittie, everie man seeketh out places, highewayes, lanes, and covert corners to buylde upon, yf it be but Sheddes, Cottages and small Tenementes for people to lodge inn. . . . Thes sorte of covetous Buylders exacte great renttes and daiely doe increase them, in so muche that a poore handie craftesman is not able by his paynefull laboure to paye the rentte of a smale Tenemente and feede his ffamilie. Thes buylders neither regard the good of the Commonwealthe, the preservacon of the healthe of the Cittie, the maynetenance of honeste Tradesmen, neither doe they regarde of what base condicion soever their Tenantes are, or what lewde and wycked practizes soever they use, so as their exacted renttes be duely payed, the wch for the moste parte they doe receave either weekely or moontheley."

The moral of which is that houses should belong to public bodies, or to the people who occupy them, or, at any rate, to persons with the ability and will to keep them in order, and possessed of sufficient civic pride and regard to the public health to avoid ugliness and insanitary overcrowding.

A large part of the evils of town life is due to the blotting-out of sunlight which everywhere obtains. It is but lately that we have come to realise how vital a necessity sunlight is to health. Yet the fate which befalls nearly all plants and living creatures when debarred from direct sunlight should have given us ample warning. In Italy there is an old proverb that

" all diseases come in the dark and are cured in the sun," and we have learnt, by observation and experiment, that direct sunlight is more deadly to the germs of consumption and of anthrax, for example, than any chemical germicide. But it is not primarily as a germ-destroyer that the sun's rays are so important to us. They act directly on all our bodily processes, stimulating metabolism, and generally increasing our vitality. The cheering effect of sunshine and fresh air is no mere matter of psychic association. It is but one aspect of general, mental, and bodily health.

The smoke-laden atmosphere of cities largely, sometimes almost entirely, cuts us off from these life-giving sources. Few people have any idea of the health-destroying effect of our tens of thousands of domestic fires, all belching forth their smoke a few yards apart. Even materially the damage is fabulous. A few years ago it was estimated that the smoke from the chimneys of Pittsburgh did annual material damage to the extent of £2,000,000, and that of Manchester to the extent of over £1,000,000. It has been proved that in the latter city not less than half the effective sunlight is, at any rate in the centre, intercepted by smoke. The fogs of London are proverbial. It is probable that at least two-thirds of the smoke comes from domestic chimneys.

Investigations, such as that of A. G. Ruston, have shown that the amount of solid material deposited in the industrial area of Leeds is 1,900 lb. per acre per annum, while three miles north-east of the centre of the town it is only 90 lb., and five miles from the centre it is reduced to 62 lb. per acre. In Greater London the annual fall is about 440 tons per square mile; in Glasgow it is 1,330 tons; and in Coatbridge, the centre of the Scottish iron industry, it reaches the amazing total of 1,939 tons. Yet in Malvern only 7 tons are deposited in a month, showing how avoidable is this evil in even fairly large towns. It is no new thing, although increasing in degree. Even in the seventeenth

century we find John Evelyn, one of the founders of the Royal Society, protesting against the "dismal cloud of sea-cole which maketh the city of London resemble the suburbs of Hell."

Sunlight is not only a necessity for the so-far healthy, it is also the most potent of disinfectants, as has been said earlier. Sir Arthur Newsholme has reminded us that Koch found that in direct sunlight tubercle bacilli died after an exposure varying from a few minutes to several hours, according to the thickness of the layer exposed. Strauss found that flourishing cultures of tubercle bacilli perished completely on exposure for two hours to the rays of the summer sun, while cultures, dried in thin smears on glass plates, had lost their virulence under similar conditions in half an hour. Where there is no free access of air or sunlight the retention of virulence in deposited tubercle bacilli has been observed at the end of 184 days.

The curative effect of sunlight on tubercular joints has been demonstrated at Hayling Island; and its influence in preventing and curing rickets has lately been realised. Surgeons are finding how valuable a co-operator is the sun in nearly every post-operation condition; and are seeing new meaning in the beautiful saying of Ambroise Paré: "I dressed his wounds; God healed him."

At any rate, in large towns, it is clear that our system of heating and cooking calls for revolutionary treatment. Our ordinary grates are both unhygienic and wasteful. A recognised authority says: "Of all the fuel burnt in a house for cooking and heating, it would probably be under the mark to estimate that three-quarters is wasted." It would be out of place in this book to discuss in detail the question of the economical use of fuel. It may be said, however, that the whole matter has been thoroughly investigated, and that certain conclusions have been unanimously arrived at by those most competent to express an opinion. Domestic smoke is practically avoidable. It must be

a part of any serious health policy to see that it is avoided.

It is scarcely necessary further to stress the facts of the housing situation as it exists at the present moment. It has been pointed out that one-eleventh of the whole population of England and Wales are living more than two to a room ; and that upwards of 10 per cent. of our people are living in slums. The whole matter may be well summarised in the official words of the Royal Commission on Housing in Scotland :

" Insanitary sites of houses and villages, insufficient supplies of water, unsatisfactory provision for drainage, grossly inadequate provision for the removal of refuse, widespread absence of decent sanitary conveniences ; the persistence of the unspeakably filthy privy midden in many of the mining areas ; badly constructed, incurably damp, labourers' cottages on farms ; whole townships unfit for human occupation in the crofting counties and islands ; primitive and casual provision for many of the seasonal workers ; gross overcrowding and huddling of the sexes together in the congested industrial villages and towns ; occupation of one-room houses by large families ; groups of lightless and unventilated houses in the older burghs ; clotted masses of slums in the great cities . . . To these, add the special problems symbolised by the farmed-out houses, the model lodging houses, congested back lands, and ancient closes. To these, again, add the cottages a hundred years old in some of the rural villages, ramshackle brick survivals of the mining outbursts of seventy years ago ; in the mining fields, monotonous miners' rows, flung down without a vestige of town plan, or any effort to secure modern conditions of sanitation ; ill-planned houses that must become slums in a few years ; houses converted without necessary sanitary appliances and proper adaptation into tenements for many families, thus intensifying existing evils ; streets of new tenements in the towns developed with the minimum of regard for amenity."

This summary, with scarcely a word altered, gives an equally true picture of the housing of the people in England and Wales. It is generally agreed that, even on a conservative estimate, not less than one and a half to two million houses will have to be built in the next ten years, even if we leave untouched all but the most disgraceful of the existing houses. The alternative is frankly to own that England cannot house its people. We must assume that these houses are going to be built somehow or other, and that our country is to be continued. The questions that remain are these: What sort of houses are we going to build? Where are we to build them?

The answers to these questions are entirely within our control. We have plenty of experience to guide us. Many people think the answers are given by commonsense. Build houses where the people want them, and of such sizes and quality as their occupants can afford. Such, however, are not the answers that will be given by any one who has devoted five minutes' thought to the matter, and has any regard to the public health and the well-being of his country. There is an infinite "demand" for more one-roomed tenements in Stepney and Bermondsey and the slums of every city in Great Britain. There is, relatively, a small demand for houses at £30 a year in non-urban districts. Are we to follow these indications?

More and more our great cities grow; more and more our rural districts become depopulated. Between 1851 and 1911 the urban population of England and Wales grew from nine to 28 millions, and in the same time our rural population diminished by over a million. Within the 120 square miles which make up greater London lives a population approximately the same as that occupying the whole 30,000 square miles of Scotland. Of the Scottish population, one-quarter lives in Glasgow. Many comments suggest themselves, but are unnecessary. The mortality figures quoted elsewhere in this book show some of the results of the

policy of herding the human race in cities far removed from the prime essentials of truly healthful, human life: —sunshine, fresh air, space, quiet, reasonable privacy, physical exercise in the open air, and many other conditions to which our bodily and mental structures have, by long evolutionary process, become adapted.

Nearly every one knows the historic facts which started the process of urbanisation. It was all natural enough, and, up to a point, rather desirable. Large-scale industries, involving the employment of great numbers of people, brought with them the possibilities of an active social life, altogether impossible in remote villages and hamlets. The higher money-wages and the more independent position which factory work yielded, when compared with farm work, naturally attracted to the towns an ever-growing number of the more enterprising spirits. And that process has been continuing right up to the present time. But for this constant introduction of fresh blood from the country, our great cities would have died out long ago. To modify a saying of Mercier, a modern industrial community is a lamp which burns in the city, and is replenished from the country. Havelock Ellis failed to find any British men of genius that were Londoners by descent. Charles Booth found that only 17 per cent. of the London police were born in London.

Few inhabitants of London can trace a London ancestry of any length.

A vicious circle has been established. Industries are naturally started where there is plenty of available labour. Labour is naturally attracted to districts where industries are active and fresh ones are being constantly initiated. And so the cities have grown and grown and still tend to increase. Suburbs swallow up the surrounding country, and one part of a town, even with our modern means of rapid transit, may be hours away from another part. The consequence is that the advantages of aggregation, even from the narrowest economical point of view, are lost. To save raw

materials and manufactured products from having to spend quite so much time on the railway, the human beings employed in industry waste hours a day in profitless and tedious journeys between their homes and their offices or workshops. The development of transport facilities has, in fact, operated in a curiously ironic way, actually swallowing up more and more of the best parts of men's days instead of freeing them.

Now this question lies at the very basis of the problem of public health. The conditions of life in modern industrial cities, no matter how much we may improve them, are fundamentally out of harmony with the inherent physical and psychic nature of normal men. They are, therefore, incompatible with true health and continued positive happiness. The condition of the well-to-do residents of modern cities is not relevant. The advantages which they enjoy are only possible at the expense of others. They could not possibly, compatibly with our economic solvency, be enjoyed by all. Long week-ends in the country, frequent motor tours, and a large income, make it possible for the rich to secure the advantages of both town and country life. The question is, how can it be made possible for the great mass of the people also to enjoy these combined advantages.

The spreading out of cities further and further into the country, in the form even of the most salubrious garden suburbs, is no real solution, though it may represent an improvement on the present state of affairs. But it is altogether undesirable from every point of view, including the special point of view of health, that a large part of a man's time should, perforce, be spent every day in travelling between his home and his work. Moreover, every extension of the city but still further cuts off its centre from the sunlight and the fresh air. There is one solution, and one solution only, and that consists in the definite restriction of any further extension of our existing cities, and in the construction of new towns built, not for the profit of a few

individuals, but with a view to the useful, healthy and happy lives of the people who occupy them.

As showing that, even under our present economic system, a more human life is possible for all, this statement by the Medical Officer of Health for Letchworth Garden City has interest :

" In Letchworth our workers leave home after breakfasting with the family, they walk or cycle to their work, they come home to dinner, and then by six o'clock in the evening they are out in their gardens, or ready to play cricket, golf, tennis, or do anything else they like. By this means they are able to preserve health, pleasure, and money for their own enjoyment and that of their families. I am old-fashioned enough to believe that the security of the State is founded on happy family life lived in decent homes."

Three problems, therefore, present themselves ; firstly, that of preventing any further enlargement of our existing cities—for it is as easy to suppress illicit houses and workshops as illicit stills. Secondly, that of developing along lines of beauty, health, and utility, a large proportion of the little towns scattered throughout the country ; and deliberately constructing, *de novo*, new cities, limited in size and density of population, planned and designed in their entirety, at any rate so far as general arrangement goes, even though the actual building may be spread over many years. And, thirdly, that of adapting and, to some extent, reconstructing the more unhealthy parts of existing cities.

What line, then, are we to adopt in making the best of the overgrown cities that already exists ? Certain things we clearly cannot do. We cannot pull down and destroy even the worst houses unless we make temporary provision for their occupants ; nor rebuild on the old sites until we have succeeded in attracting, by means of fresh industries elsewhere, a corresponding number of people, whose houses, thus vacated, would become available for those previously worse housed. This latter process is likely to be too slow to meet the

emergency. Therefore, it will probably be found necessary, over a very short term of years, to break our rule and construct, outside our cities, a sufficiency of garden suburbs connected with the city by trams and trains to ease the pressure and enable us to get on with demolition. The centrally-placed sites thus bared should be partly converted into permanent open gardens, partly devoted to lofty, thoroughly well-constructed, blocks of flats; each equipped with modern sanitary and domestic conveniences, and furnished with balconies, and so arranged as to allow for the free passage of air through every room. At Stepney Green, in London, are blocks of flats which approximate to this provisional practical ideal. Of course, we all know that a nice little house, with an eighth of an acre of garden, is altogether to be preferred to a three- or four-roomed flat of the type indicated, but our problem is to find immediate house-room on a very small area for a very large number of people. It is a transition problem which faces us; and it is only by regarding the actual facts that we shall solve it, and so be enabled to get on with the real work of reconstruction. In every department of reform we shall find ourselves confronted with these two questions. What are we going to construct for the future? And how are we going to temporise with the existing facts? And we shall have to answer both questions, whether we are dealing with existing slums or with ignorant, demoralised, and unhealthy men and women, or vested habits which we have allowed to become established. But in every case we shall have to get away from the abstract Utopianism which forms the traditional practice of politicians and governments, and get down to the realism of doctors and scientists, and artists, and working people generally. In actual practice, Utopianism almost invariably shows itself to be synonymous with inhuman ruthlessness. The individual is forgotten; the idea, frequently a futile one, is followed for its own sake. When neighbourliness ceases to be the informing spirit of social

activity, tyranny reigns. Neither Conservatism nor Socialism can save its apostles from this dilemma.

An immediately necessary and entirely practicable measure in the direction of making the best of our unfortunately overgrown towns, consists in compelling the owner of every house which is subdivided into tenements to effect such structural modifications as will make each floor reasonably self-contained and adapted to the hygienic needs of each separate family.

These houses were originally built for the occupation of a single family, and were, however crudely, adapted for such usage. The result of their subdivision is that most of the occupants have no separate water supply—often having to walk through their neighbour's kitchen for every drop they use—nowhere to store food, no lavatory provision, and totally inadequate means of ventilation. Much of this could be, without great difficulty, remedied. The actual framework of these houses is often reasonably good ; and, by the exercise of a certain amount of ingenuity, and with the assistance of the carpenter and the painter, they could be made, at any rate provisionally, habitable. Finally, some of the present congestion could be eased by doubling the existing hospital accommodation, especially the maternity beds of our cities, and by building an adequate number of country convalescent and holiday homes. Many of the worst evils of our overcrowded slums could thus be provisionally relieved.

Without a considerable reduction of even our present birth-rate all social effort will end in futility ; but, this aside, serious constructive health policy—and, for that matter, as the present writer believes, serious constructive economic policy—consists, at the present time, almost entirely in one measure. That measure is the considered and deliberate development of hundreds of our little stagnating towns, scattered about the country, into small garden cities ; the corresponding development of a large number of our villages into small industrial as well as agricultural centres ; and the

building of new towns, limited in ultimate population to 30,000, or, at most, 50,000 inhabitants, planned according to the definition of the Garden City Association, "for healthy living, organised for industry, of a size necessary to give full measure of social life, but no larger; surrounded by a rural belt; the whole of the land being in public ownership."

Local housing surveys are, of course, essential, and small local building schemes to meet immediate needs are necessary. But wholesale new construction and building must be in accord with a national scheme. There must be considered national redistribution, not only of population, but of manufacture. We are too apt to look upon both capital and industry as static things like hills and valleys. But this is by no means so. It is only a comparatively few years ago that most of our existing industries were really started. New ones are constantly arising. And even of the old ones only a few are tied by relevant circumstances to particular places. There is nothing about Whitechapel that makes it peculiarly fitted for tailoring, beyond the existence there of a large deteriorated population. Jewellery, watchmaking, book-binding and printing, saddlery, shoe making and basket making—to name but a few of the more obvious—are occupations that could as well be carried out in one district as in another, if proper transport facilities were afforded, and power were distributed as it might be. There is nothing to prevent us from diverting an enormous part of our city population and industries to places fit for human life. A housing policy which does not take into account the inter-related problems of transport and power as well as housing will fail. There are 77 million acres in the United Kingdom, so that there is no need for us to live at the rate of a hundred or more to the acre. At present, one-eighth of the entire population of England and Wales lives within the boundaries of Greater London.

Unless we are prepared to proceed on the lines here

indicated, health policies will merely represent a waste of money and effort. " Mothers' Welcomes " will not save us, nor will Tuberculosis Clinics, nor Insurance Acts, nor Sanatoria, nor Pasteurised milk, nor the medical profession. All these have their place, but, compared with the things to which this chapter is devoted, a very subsidiary one.

ORGANISING THE DOCTORS

For the carrying out of any health policy—preventive or curative—doctors are clearly needed. It is to various problems associated therewith that this section is devoted.

It is important to remember that whatever formal arrangements may be made, whatever may be the basis on which the medical services are organised, the community is, at any given time, dependent on the current ability and goodwill of the medical profession. No matter how well a health scheme may look on paper, nor how potentially excellent are its results, those results will not materialise unless there is a general and individual will among the doctors that it shall succeed. To some extent this principle holds good of every trade, craft, and profession, but in the case of the medical profession it is all-important. For medical services cannot be measured as bread is measured, either quantitatively or qualitatively. A scheme that is forced down the throats of the people who have to carry it out, against their wishes and against their judgment, rarely succeeds. The inception of the National Insurance Act may well serve as a warning. In re-organising the medical service of the country, therefore, Utopia builders should be listened to, but should not be appointed the final arbiters. We live in a conditioned world, and the business of the statesman is to observe the conditions. It is essential that in any re-organisation of the health service the co-operation of the organised medical profession must be obtained at every stage. Whatever may be the practice of a minority of its members, the tradition of that profession is an asset whose value is beyond price. As to the ultimate end which alone justifies medical practice at all, the profession will agree with the most radical-minded of us. Its greatest fear, in connection with revolutionary changes proposed by

Governments or other lay bodies, is that the independence of its members may gradually be filched away.

Now, professional pride, though occasionally a little ridiculous, is, on the whole, an extremely desirable thing. Informed criticism is one thing; the criticism of committees and individuals totally ignorant of the nature of the problems and tasks involved, is quite another. Increasingly, working men are finding themselves as public representatives, sitting in council chambers and committee rooms, with controlling power over officials of all kinds. They will be wise not to repeat, in their position as employers, the spirit of which, in their position as employees, they have been the victim. In his book, "The Cult of Incompetence," M. Emile Faguet says, "There is a moral as well as a technical efficiency, and in limiting the independence that is essential to moral efficiency, Democracy neutralises the technical efficiency of its servants."

The co-operation and goodwill of the doctors, then, is most necessary; and this we are not likely to get unless we are prepared to give, both to individual doctors and to the organised profession, a very large measure of latitude and of independence. The framework within which the services are to be rendered must, of course, be mutually agreed to and stabilised. But, within that framework, there must be ample scope for individual genius, personality, and varying points of view, to assert themselves. A dead uniformity of practice would be fatal to the arts of medicine at this, or, indeed, at any, stage. Medical knowledge is not a collection of final truths, which have but to be taught and applied. It is almost as individual a matter as literature; and stereotyping would be as fatal in the one as in the other. And, just as certain authors specially appeal to certain readers, so doctors severally inspire confidence in diverse groups of patients. Those who think that this is based on irrelevant quackery are ignorant both of the realities of medical practice and of the psycho-physiological facts of health and disease.

This personal relationship between doctor and patient, with the confidence, friendship, and psychic mutuality involved, plays an altogether smaller part and is altogether less important where specialist and expert treatment are concerned. No moral can thus be drawn from the fact that the relationship between consultants or hospital doctors and their patients is a relatively impersonal one. The family doctor or general practitioner holds an entirely different position. His functions are quite distinct, though no less important. And, in addition to his being geographically a neighbour and usually a confidant of his patients, his position is often almost priestly in character.

The principle of free choice of doctors, therefore, which is frequently sneered at by cut-and-dried theorists, has a very substantial foundation of wisdom. A patient may not be a very good judge of a doctor's skill, but he is likely to be a better judge than any one else; and he is certainly able to form a pretty shrewd judgment as to whether thought, attention, and sympathy are being given.

We have, then, three conditions which should be observed and safeguarded in drawing up a national scheme of medical service. Firstly, the scheme should be drawn up in co-operation with the medical profession. Secondly, the maximum of independence compatible with reasonable administrative efficiency should be left to the doctors coming under the scheme. Thirdly, so far as the general practitioner is concerned, the principle of free choice of doctors should be maintained.

As I have pointed out elsewhere, it is now pretty generally agreed that no hard and fast rule can be laid down separating curative from preventive medicine. With increased knowledge of the nature of disease and of the factors involved in its existence, a much wider notion of necessary preventive measures than is currently implied by the term "public health" is now held. The personal factor is seen to be an altogether bigger one than was at one time supposed; and the

work involved in relieving and curing overlaps that involved in collective hygiene.

There has been, and still is, far too great a dissociation of clinical medicine from the purely sanitary service, although a number of links have lately been established between them. But, from the point of view of economy as well as of efficiency, a still closer co-ordination is necessary. At present the practitioner, summoned to a case of individual illness, constantly finds himself impotent by reason of the fact that in the causation and in the potential remedial treatment of the disease with which he is confronted environmental conditions play the leading part. The drugs and other therapeutic agents which alone are at his disposal are futile under the circumstances. He is driven, therefore, to the administration of what are little better than placebos, and finds himself day by day increasingly disheartened and increasingly cynical as to the value of his services. Accurate diagnosis is of little value unless followed by scientific treatment in accordance with such knowledge as we possess. And this inco-ordination exists between almost all branches of the medical services at present operating. To quote from the Interim Report of the Consultative Council to the Scottish Board of Health, "Of the several sectional public services which are now in operation, it may be said, generally, that they are incomplete, and that no regular and adequate means are furnished for co-ordinating them; and, further, that no duty is laid upon any one to ensure their continuity as regards the individual patient."

To take one example: The School Medical Officer, in the course of his inspection, discovers that a child is suffering from a certain physical defect or pathological condition. If the case is "necessitous" the proper immediate treatment may be carried out at the public expense. But in the case of the "non-necessitous," nothing more can be done by the School Medical Officer, after the medical diagnosis is made, than to notify the

parents of the fact and to advise them to have treatment carried out. The parents may or may not take steps to do so—at the possible risk of a prosecution for cruelty if they fail; they may or may not give correct information regarding the School Officer's report to the doctor they consult. In short, the effective correlation of diagnosis with treatment is almost a matter of chance. On the other hand, when the treatment following on the diagnosis is provided by the school authority itself, this is necessarily carried out at a central institution, and is for the most part without relation to questions of home environment or of previous history such as a family doctor could answer.

This is but one example. Similar ones might be quoted in connection with almost every branch of medical practice. With the establishment of the Ministry of Health, the central machinery of health administration has mostly been brought together. But local administration is still as dissociate as ever. There is little co-operation between the district and borough councils which direct the so-called public health service; the boards of guardians, which are responsible for the medical treatment of an enormous section of the very poor; the Insurance Committees, who administer the medical benefit of employed persons; the voluntary hospitals, which render such services as their means permit to all and sundry; and the private practitioners, who still probably do the bulk of the domiciliary medical work. We are clearly not making the best, or anything like the best, even of the knowledge and skill at our disposal. The lesson of "single command," which we learnt at such a price in the late war, will have to be applied to our war with disease if our daily casualty list is to be brought within reasonable proportions. We want to get maximum value for every ounce of skill and knowledge we possess, and for every sovereign we spend, and that can only be done if we consider our problem as a whole, and so organise our service and our expenditure that they are distri-

buted with the minimum of friction and overlapping in direct relation to needs. In no department of our life is the principle of production for use more necessary ; in none is the principle of production for profit more disastrous in its application. The custom of charging " what the traffic will bear " is a thoroughly unsound one.

What, then, are the practical steps to be taken ? If our policy is to be sound, we must get a clear view, not only of the more urgent measures immediately practicable, but of the ultimate form of organisation at which to aim. Even though temporary expediency, and shortage of money and *personnel* may necessitate the postponement of many desirable measures, it is essential that each step we take shall be in the direction of our goal. Our aim is to bring our environment into harmony with the physical and mental needs of what we feel to be the most desirable types of humanity, and so to organise our medical and hygienic services that the whole of the available knowledge and skill possessed by them shall be brought within the reach of every man, woman and child in the country in ratio to their several needs.

In 1919, the Minister of Health instructed the English, Scotch, and Welsh Consultative Councils on Medical and Allied Services to report on the future provision of these services for their several countries. The three Reports differ in many respects, but they all agree, first, as to the necessity of the unification of local health authorities, and, secondly, as to the primary importance of organising the health service of the nation on the basis of the family as the normal unit, and of the family doctor as the normal medical attendant and guardian. " It is not," to quote the words of the Scottish Report, " for disease or diseases in the abstract that provision has to be made, but for persons liable to, or suffering from, disease. The first essential for the proper and efficient treatment of individual persons is, therefore, not institutional, but

personal, service, such as can be rendered to the people in their own homes only by the family doctor who has the continuous care of their health ; to whom they will naturally turn for advice and help in all matters pertaining thereto ; who will afford them such professional services as he can render personally ; and who will make it his duty to see that they obtain full advantage of all the further auxiliary services that may be otherwise provided. The family doctor, under such conditions, will not be isolated and self-dependent ; his power to help will not be limited by his personal resources, but he will have at command, in supplement of his own efforts and means, all the aids that are necessary to make his work completely effective. As the recognised medical guardian of the family, he will have the opportunity, and will accept the duty, of co-operating on behalf of its members with all the auxiliary health agencies established for the public benefit, and of acting as the professional intermediary between these and his patients. Through him the resources of these public agencies will be mediated to the individual, and the present lack of continuity in operation and responsibility will be eliminated. Without the family doctor as a personal link, not only between agency and patient, but between agency and agency concerned with the same patient or family, the advantages of the publicly-provided medical resources must inevitably come short of full realisation."

In the light of the growing and altogether desirable scepticism as to the therapeutic efficacy of bottles of medicine, which in the past have formed so large a part of the general practitioner's armament, many people have jumped to the conclusion that the only service that the medical profession can render to the citizens of the future is that given by its surgeons and administrative officers of health. Their practical ignorance of the problems involved has led them astray. In the first place, there is an enormous amount of work to be done in educating the public as to the

principles of what has been called the personal care of health. The conditions of civilisation, even at its ideal best, represent an environment, both material and mental, altogether unlike that in which man lived when his stock of instincts and impulses was being formed and selected. And it is the general practitioner on whom the bulk of this work of adjustment will inevitably fall. His training and education must, of course, be modified to suit the modification of his functions. In the second place, some one must select the cases which call for the surgeon's help. The most trifling ailment often presents symptoms which, to the lay mind, are fully as alarming as those presented by disease potentially fatal. And even though the whole treatment of disease were taken out of the general practitioner's hands, he would still be absolutely necessary for the work of diagnosis. Some sort of clearing-house there must be in order that cases calling for special treatment may be recognised and referred to their appropriate department. And for this work a degree of skill, knowledge, and judgment is needed at least as great as is demanded for the exercise of any of the specialist techniques.

The fact that his work is less showy, that his fees are lower, and that he is rarely honoured by the Government of the day, has led the ignorant to assume that the general practitioner is of a lower grade, culturally and technically, than the specialists who occupy the Harley Streets of their respective cities. A little deeper acquaintance with facts would lead to a very different estimate. As a matter of fact, a very large proportion of all treatment will rightly continue to be initiated and carried out by the general practitioner. Seeing that he is to be the principal propagandist of the laws of personal health, and that he will be the expert most closely in touch with the personal habits and environmental conditions of the patient, he will continue to be the most suitable person to treat all diseases and ailments not calling for difficult surgical

measures or special environmental conditions, which may therefore be conveniently attended at home or in the cottage hospital of the district.

This view of the essential basic position of the family doctor is shared, not by the general practitioners themselves so strongly as by the leaders of the profession, such as Sir T. Clifford Allbutt, and the great medical administrators. Thus, Sir George Newman, Principal Medical Officer to the Ministry of Health, writes: "The foundation of a medical service is the medical practitioner. He is its pivot, its anchor, its instrument. If he is competent, it has the first surety of success; if he is ineffective or ill-equipped, it must fail. His competency is not only his learning and knowledge, but his practical capacity, his clinical skill and experience, above all his resourcefulness, adaptability, common sense, tact, and imagination, firmly established and set in integrity and high character. These are individual virtues, and the medical practitioner is individualistic in upbringing and in genius. He should safely hold the secrets of his client, and he should have ample opportunity of rendering the full personal worth of his counsel to his patients. The social and individual relationship between doctor and patient is invaluable in the treatment of disease. His responsibility and his growth in individual worth are of first-rate importance." "Any change, whether effected from within or imposed from without," writes Sir John Tweedy, "that restrains the liberty or lessens the responsibility of a medical man, or hampers the free play of his intellectual activities, will be detrimental to the authority and usefulness of medicine, and prejudicial to the interests of public health and national welfare."

It is difficult to exaggerate the importance, both to medicine and to the State, of the position of the practitioner. No imposing institutes or hospitals will bring the healing art into the homes of the people; that can be done only by the practitioner. No philosophy will of itself integrate, simplify and unify medicine; that

can be achieved only in the person of the practitioner. Incipient and early disease comes only to him and to the school doctor. If it is to be diagnosed before structural change occurs, they must do it by the careful observation of subjective symptoms and their meaning, by the use of laboratory methods as aids to their own clinical labours, and by the study of the whole art and science of prognosis and prevention.

It is most desirable that that spirit, which, however alloyed, has been responsible for making the position of the doctor in the hearts of the people so much stronger in this country than elsewhere, and has largely contributed to the comparative efficiency of private medical practice and the voluntary hospitals, should be retained. The replacement of the family doctor, voluntarily chosen by those for whose health he undertakes part responsibility, by a salaried State official allotted to a district, with or without the assent of the majority of its inhabitants, would inevitably reduce, if it did not altogether abolish, that trust and confidence on the part of the patient, and that individual, as opposed to collective, responsibility and friendliness on the part of the doctor, which are so valuable from the point of view of practical results, to say nothing of social amenities, which after all make up a large part of the pleasure of being alive at all.

The general or family practitioner will, therefore, tend more and more to act as a kind of *liaison* officer between his neighbours and friends and the specialists and communal services. He will have a responsibility, not merely to the State, but to the men and women who have shown their confidence in him.

It is impossible, with the mass of new knowledge that has been acquired and is being daily added to, and with the high development of surgical and pathological technique that has lately taken place, that any one man shall be competent to cover the whole range of diagnosis and treatment—quite apart from environmental conditions. Whilst the ordinary consulting

room is perfectly adequate for the giving of personal advice, for the stethoscoping of the chest, the examination of urine, the use of the ophthalmoscope and the laryngoscope, and the taking of blood-pressures, it naturally cannot provide for X-ray examinations, bacteriological and bio-chemical investigations, Finsen light applications, radium therapeutics, or most of the branches of electro-therapeutics. It is therefore necessary, not merely to organise a general practitioner service for every member of the community, but in every case to supplement that service by the surgical, specialist, and institutional services. In the end it will probably come about, and it is certainly desirable that it shall come about, that the method whereby all these services are placed at the disposal of every citizen, according to his needs, will be a uniform one. But we are likely—considering our national temperament—to move more quickly if, in the first instance, we leave alone those classes reasonably able at present to obtain access to all these services, and devote ourselves to so organising the available material and *personnel* that they shall be brought within the reach of all those unable to obtain them for themselves. The present organisation, apart from sanitation and infectious disease, is almost tragically whimsical in its irresponsible patchiness. For the absolutely destitute unemployable, complete provision of a kind is made of very varying degrees of efficiency. This service is administered under the Poor Law by boards of guardians. For employed persons, under the income tax level, a general practitioner service is provided under the National Insurance Act, administered by Insurance Committees. But no provision is made for the wives or children of employed persons, nor are any arrangements available—other than such as may be provided by private charity—for surgical, specialist, or institutional treatment of either employed persons or their families. For the poorer members of the middle class, no provision whatever is made, and such services as are provided by charity

are rarely placed at their disposal. It is clearly desirable that for all these classes, unable for financial reasons to provide themselves with the medical services needful, a unified and organised provision shall be made. And by whatever means the necessary money is raised, poverty must not be allowed to offer the slightest bar to obtaining everything that medical science offers. One thing we want to avoid is the waste of the national energy and resources in what are called "expenses of administration." The financial methods of the sick and burial clubs and of the industrial insurance companies—largely identical with the approved societies under the National Insurance Act—are scarcely worthy of imitation by the national executive. The infinite waste of time, labour, and money involved in collecting and keeping account of coppers week by week from the poor is, in the most literal sense, a method of penny wisdom and pound folly. Whatever may be the costs of the national health service, they have perforce to be met—like those of the army, education, and roads—out of the total wealth produced each year. And seeing how the interests of all are bound up in the public health, the case for complete national provision is overwhelming on the grounds of justice as well as of simplicity. In any event, we must see to it that just as the poverty of no individual hinders the provision of whatever services are needful for him, so the poverty of no district must stand in the way of the provision for that district of the needful institutions and equipment.

In every county, county borough, town, and urban and rural district, we must have a statutory health committee, subordinate to the Ministry of Health, co-ordinating, controlling, and administering the whole of the health services within its area. Under this committee the whole of the provided services—public health, insurance, Poor Law, rate or tax supported hospitals, as well as the publicly-subsidised general practitioner and specialist services—would be organised.

The health committee might be elected *ad hoc*, but, better, might be a committee subsidiary to, and chosen by, the county, borough, or district council, supplemented by a membership, amounting to one-third of the whole, elected by the local medical men. It is necessary that the majority of the members of the health committee shall be elected representatives of the public for whose benefit it acts and on whom falls the onus of providing the means. At the same time the doctors must be prominently represented, not only because their professional interests are involved and their goodwill and sympathy essential, but because also they alone have the expert knowledge without which any health scheme is foredoomed to failure.

It is impossible to be enthusiastic about things in which our instincts are not involved, and seeing how large a part public spirit and social feeling or sympathy, as well as collective pride, must play in an active health policy, we shall be wise in all possible cases to make our administrative unit a small and local one rather than a large and national one. Most people can be trained to realise their unity with their fellow-villagers or fellow-townsmen, whom they constantly see and meet in the flesh; and it is to this reality, rather than to those high-flown, comparative unrealities, such as the State and humanity, that we should more often incline our gaze. Everything should be done to make civic pride an essential part of "good form" and social decency. It should be reckoned a disgrace to every inhabitant of a village or town that any part of it should fall below the standard of sanitary propriety which we know to be not only desirable but entirely practicable. There is not the slightest biologic reason why we should not take as much pride in our district's low infantile mortality, or relative freedom from tuberculosis or rickets, as in its cricket scores. The scope for educational propaganda is clearly very great, but for it to have value there must be power to act on it and responsibility for results. Moreover, seeing how sani-

tary neglect in one district reacts on every neighbouring district, certain minimum requirements must perforce be laid down by the more formal, distant, inhuman national authorities. But to attempt to run a policy based on abstract theory and without individual enthusiasm, responsibility, or emulation, is to play at futility. The more scope we give to enterprise and experiment the better. And it is not always true even that the most expedient course is to insist that the political unit which provides the financial means shall control the detailed administration and expenditure. This should depend largely on circumstances. There is no absolute rule in the matter.

It is interesting to note that during the war it was found that the patriotic spirit—or impressibility by public opinion—became more attenuated as the local population rose above 50,000. It should also be remembered that many of our most useful national sanitary enactments were, in the first instance, local experiments, the success of which led to more general enforcement.

The importance of these local health committees, with considerable powers of initiation and execution, cannot be overstated.

In every small town or industrial village of over 3,000 inhabitants a cottage hospital must be provided where one does not already exist, unless the needs of the neighbourhood are already adequately met by a cottage hospital within two or three miles. These cottage hospitals, which should be of the simplest possible structure, though built in accordance with modern notions of the importance of open air and sunshine, should provide about three beds per 1,000 of the population served. This will usually be found adequate also for such maternity cases as need institutional treatment on account of faulty home environment or unexpected emergency. Infectious cases would, of course, be provided for in isolation hospitals as at present. The cottage hospital will form the nucleus of

the local health institute, and it should be so equipped as to form a serviceable scientific club and meeting-place for the practising doctors. They would probably organise for themselves a convenient medical library, and they could be provided with a small laboratory for the carrying out of the simpler forms of investigation and diagnostic tests. A simple, yet efficient, operating theatre should be a part of every cottage hospital, and the larger ones should be equipped with an X-ray outfit. It is at the cottage hospital that the motor ambulance should be kept, and it might conveniently serve as the headquarters of the district nursing and midwifery *personnel*. The patients admitted would be under the care of their own family doctors, and on the latter would fall the responsibility of obtaining such additional surgical or expert help as might be necessary. Every doctor should be assumed to have a *primâ facie* right to beds for cases which he thought suitable, but to prevent abuse, a certain power of veto should rest with a medical hospital committee elected by the doctors themselves. No resident medical staff is contemplated. A thoroughly competent matron and small nursing staff, with every local doctor on the telephone, would meet all ordinary requirements. A dental clinic should be held at the cottage hospital once, twice, or more frequently, each week, according to local needs.

The cases for which the cottage hospital would be mainly intended are serious medical cases that require the frequent attention of the nurse, or cannot be advantageously attended in the environment of the home; minor surgical cases within the competence of the general practitioner; sufferers from accidents, or emergency surgical cases that cannot safely or desirably be conveyed to the borough or county hospital; surgical cases from the county or borough hospital transferred as soon as possible after operation—thus releasing the more important hospital beds and giving the patients the advantage of a more rural environment for convalescence; and such maternity cases as cannot wisely

be attended in their homes, for hygienic reasons, together with cases in which difficulties calling for operative interference present themselves too late for the patients to be moved to the nearest maternity hospital.

The next grade of hospital would include the general medical and surgical and the maternity hospitals of large towns and county boroughs. In most cases the existing accommodation needs to be materially increased. Occasionally this increase may be effected by additions to the existing buildings, but generally, especially if the present hospitals are situated in the middle of the towns, it is desirable that supplemental buildings, capable of gradual extension, be erected just outside the towns, where more land is available and the advantages of fresh air are obtainable.

Every town of over 10,000 inhabitants should be equipped with a hospital of this grade—roughly corresponding to that suggested as part of the Secondary Health Centre in the Dawson Interim Report—unless within twenty miles there is already, or is to be constructed, such a hospital adequate for the needs of the joint districts. In association with this secondary hospital, a visiting staff of surgeons, physicians, bacteriologists, ophthalmic surgeons, gynæcologists and obstetricians, would be established or subsidised. Most of the work of these officers would be done at the hospital, but they would also be available when needed at the cottage hospitals of the area, and occasionally even in consultation with the subsidised general practitioner at the patients' homes. The resident staff of this hospital, in addition to an adequate nursing service, would include one or more full-time salaried resident surgeons and physicians according to its size. It should be competent to deal with every type of case beyond what we may call the cottage hospital range.

Both in extending existing hospitals of the county borough grade and in building new ones, a considerable economy can be effected and increased efficiency

secured by transferring post-operative cases, as soon as they can safely be moved, to cottage hospitals just outside the town. In this way the existing number of beds can often be made adequate for the serious and acute cases and for emergencies. In cities these second-grade hospitals, as well as, to some extent, the cottage hospitals, will desirably be replaced, as in actual fact they are replaced, by large general and specialist hospitals, elaborately equipped and attended by leading men in the medical profession. These are naturally the great teaching hospitals, and patients who are admitted thereto have the privilege, not only of receiving the services of the most eminent surgeons and physicians of the day, but of contributing to the training and knowledge of the coming generation of doctors, thus benefiting not only themselves but their fellow-countrymen.

An efficient motor ambulance service must form part of the equipment of hospitals of every grade, thus linking up the cottage hospitals with one another, with the borough hospitals, and with the homes of the people.

A word as to the position of the voluntary committees which at present control the non-provided hospitals. Many political purists argue that if these hospitals are in any degree to come into the national scheme, and are to be wholly or in part subsidised from public funds, the present controlling committees must be replaced by elected representatives. But no one familiar with the workings of most of our voluntary hospitals and with the enormous services they have rendered, and are still rendering so far as their means allow, can fail to be filled with admiration and gratitude towards their present administrators. It is, therefore, suggested that, at any rate in the transition period, these committees shall be invited to continue their good work, even though substantial grants be made from the public treasury. In proportion to this State assistance, a certain amount of public representation on the committees of management would be

reasonable and desirable, but anything which would alter the tone and spirit should be avoided. Even from a selfish and mercenary point of view, we should hesitate before being too pedantically revolutionary. For it is scarcely likely that a State-controlled hospital would be able to command the unpaid, or even partly paid, services of the distinguished surgeons and physicians who at present, from mixed motives of egoism and altruism, place their skill at the disposal of those who could not possibly buy it.

The universal provision of cottage hospitals suggested both for the institutional treatment of less serious or less difficult cases, and for completing the treatment of post-operative cases from the borough hospitals, would of itself very greatly relieve the pressure on the accommodation of the larger hospitals, and correspondingly reduce the number of beds needed in any new borough hospitals that may have to be built. It is suggested that the borough hospitals should provide two beds for every 1,000 of the population which they severally serve. This should allow for a separate maternity ward for difficult obstetric cases, or, in the case of larger towns, for a separate maternity hospital building. A nurses' hostel adjacent to the hospital will, of course, be necessary in all cases. And every facility, both by way of equipment and *personnel*, should be provided for bacteriological, bio-chemical, and pathological investigation, and diagnosis generally, not only for the assistance of those engaged in the hospital itself, but of the whole medical service of the districts served.

It will be easy to work out, from present-day hospital experience, the size of the staff necessary for the work of a hospital of this grade. But it will not at first be so easy to determine the size of the consultant and specialist service necessary to meet the demands of the district under the scheme proposed. A very short experience, however, will clear this matter up, and it is suggested that the part-time services of specialists and consultants already in practice in the area, provided

they have the confidence of the local practitioners, should, at any rate at first, be utilised as far as possible. Some of the appointments, such as those connected with pathology, will necessarily, or desirably, be full-time appointments. But, in the period of transition, we shall probably get the best results by upsetting as little as possible the old and, on the whole, excellent tradition and tone of English medical practice. The part-time clinician will desirably be paid for on the basis of a schedule of fees for actual services rendered : so much for a consultation, so much for various minor operations, for various major operations, for retinoscopy, and so on, together with a mileage scale for journeys to cottage hospitals or patients' homes. The general practitioner service, covering as it does, or is proposed to do, attendance and advice on every family in the country—at any rate of a certain class—in health and in sickness, by means of advice and treatment both at home and in the cottage hospitals, payment by specific service is quite impracticable, especially if the preventive aspect of medicine is to receive the consideration it should have. Moreover, if the principle of the free choice of doctor is to be preserved, and for reasons given elsewhere it is most desirable that it should be preserved, it will happen that some doctors who, through their greater energy, skill, and judgment, win the confidence of a greater number of their neighbours, will inevitably attract to themselves larger practices than others. Clearly it is not only equitable, but desirably stimulating to good work, that these men should be, in proportion, better remunerated. Of all systems of payment that have yet been devised, if these principles are to be maintained, the capitation system, adopted in connection with the Insurance Act, is the best and fairest. Some limit should, of course, be fixed to the number of families for whose care a single unaided doctor may make himself responsible, but it is not desirable to fix this limit too low, for, by a greater faculty of organisation and by greater energy, one man

may be competent efficiently to look after three times as many patients as can another man less well equipped by nature. And the former is the man from whose services we stand to gain the most, in quality as well as quantity. It is probable that, on an average, an effective general practitioner service, on the lines proposed, will necessitate a *personnel* of one doctor for every 500 or 600 families in purely city practices ; one doctor for every 400 or 500 families in more scattered townships—which generally include a small rural margin ; and one doctor for every 300 hundred families in rural districts. Some doctors will easily be able to manage larger numbers than these ; others will manage less. In addition to the medical practitioners, a service of certified and qualified midwives must be available. Whilst the family doctor should in all cases be ultimately responsible, the actual detailed attendance in confinements should normally be given by midwives. In towns a midwife should, on an average, be able to manage from 100 to 150 confinements in a year, and in country districts about half that number. It is not desirable, except in very scattered districts, where it may be almost unavoidable, that midwives should also undertake general medical or surgical nursing. District nurses should, however, be provided in every area. In towns one nurse for every 5,000 of the population will generally be found adequate ; in country districts probably about half that population will be as much as a nurse can manage.

The scheme of medical services here outlined is, in essentials, one embodiment or interpretation of the recommendations made in the admirable Report of the Consultative Council to the Scottish Board of Health. This Council, of which Sir Donald MacAlister was the chairman and Dr. Norman Walker the vice-chairman, presented a Report, altogether more practical in tone and establishing a more vital continuity with existing medical practice and institutions, than that of the English Council over which Lord Dawson of Penn pre-

sided. How nearly the proposals in this book correspond with those of the Scottish Consultative Council may be gathered from the following summary of their recommendations :

1. Unification of the various local authorities concerned with health is urgently necessary as the next step on the way to the systematic organisation of medical services throughout the country.

2. A complete and adequate medical service should be brought within the reach of every member of the community.

We do not contemplate that such service should be provided for all at the public expense, or that it should be furnished to all by a body of State or civic officials and practitioners ; but we recommend that the State should assume the duty of so organising and supplementing existing arrangements as to ensure that to every unit of the population such medical advice and treatment as are necessary for the maintenance of health and efficiency are readily accessible.

3. The organisation of the health service of the nation should be based upon the *family* as the normal unit and on the *family doctor* as the normal medical attendant and guardian.

The resources of all the auxiliary health agencies established for the public benefit should be mediated to the individual patient through the family doctor.

4. Public provision should be made for a complete medical service for the whole population of the " National Insurance " grade.

The present medical service for the insured should be *expanded* so as to provide everything that is still necessary to make it adequate and complete, and *extended* so as to include within its scope the dependants of the insured, all persons (including dependants) of the same economic status as the present insured class, and all now entitled to medical service under the existing Poor Law.

5. Arrangements should also be made, as part of the

general medical service scheme for the country, to bring within the reach of a section of the community above the economic level of the insured class certain special services for which that section of the community is unable to make adequate private provision.

6. We recommend, as an urgent need, the provision of small local "hospices," or "recovery homes," for cases of ordinary illness where no "cottage hospital" or "nursing home" is available.

7. We similarly recommend the provision of "invalid homes" for chronic invalids.

Existing Poor Law hospital buildings, if not suitable for use as local public hospitals, might be made use of for this purpose.

8. Under the family medical service which we propose the family doctor should be provided with all necessary supplementary professional advice and assistance.

All serious surgical cases, save a negligible few, should be sent to hospital for operation.

For acute medical and other cases arrangements should be made for providing the services of "district consultants," chosen by the local members of the profession, and for procuring further expert help or advice where necessary.

For ambulant medical and surgical cases arrangements should be made, either with hospitals or otherwise, for the establishment of consultation clinics, where the services of experts would be at command under properly regulated conditions.

Co-operation among general practitioners themselves for purposes of consultation and treatment should, however, be promoted.

9. Facilities should be afforded to all practitioners, and to all classes under their care, for reference to clinical laboratories, and (under suitable conditions) to experts in certain special branches of medical science (ophthalmic, aural, dermatological, dental, etc.).

10. We reserve our recommendations on the question of hospital provision and its place in relation to the

medical service of the nation until we have received the Report of a Joint Committee of this and other Consultative Councils which is considering a special reference to it by the Board on the question of the general hospitals service.

11. We urge, however, the necessity for a considerable increase in the number of convalescent homes.

We classify the types of convalescent homes required as follows :

(*a*) Annexes or auxiliaries to general hospitals to which patients could be transferred a few days after surgical operation, or after the acuter stages of illness in medical cases have been passed. The provision of these would do more to relieve hospital congestion than almost any available method.

(*b*) Convalescent institutions in the more restricted meaning of the term, for patients who have " recovered " from their illness and been discharged, but who have not yet been restored to their normal health and capacity for work.

(*c*) Preventive or rest homes.

12. In providing for the nursing requirements of the domiciliary medical service, the Queen Victoria Jubilee Nurses' Organisation should be utilised, as furnishing a suitable basis for a national system of skilled " district " nursing.

13. We recommend the provision, in populous areas, of a service of fully-trained health visitors, who would serve as *liaison* officers between the local health services and centres, the family for whose benefit the services and centres are provided, and the family doctor in charge of its health.

14. An adequate maternity service should be provided as soon as a sufficient number of trained midwives is available as auxiliaries to medical practitioners in charge of the family health.

Every expectant mother should be assured before-

hand of the advice and services of a doctor and of a midwife should she choose or be advised to engage one.

A necessary adjunct of such a maternity service would be the provision in each district of sufficient beds for difficult cases and for cases where the home conditions are unsuitable.

15. We regard it as essential to a complete medical service that adequate facilities for preventive and conservative dentistry should be provided.

The reader may be interested to learn the amount of hospital accommodation at present existing. In 1915 the figures for England and Wales were as follows :

	Number.	Beds
General Hospitals	594	31,329
Special Hospitals	222	13,654
Fever Hospitals	755	31,149
Small-pox Hospitals	363	7,972
Poor Law Infirmaries	700	94,000

The cost of maintenance per bed varies greatly, but in all cases it has been enormously increased in recent years, partly through higher prices, partly through the much greater elaboration of technique and therapeutic measures. A few years ago, the cost per bed at the London Hospital was £60 a year ; by 1913 the cost had risen to £140 ; and in 1919 it was over £200.

Perhaps it will be useful to add to this chapter a few words on the special medical problems connected with maternity and childbirth.

A good many people, including a number of doctors, are of opinion that all confinements should take place in hospital. A certain number of women die every year of sepsis subsequent to childbirth, and it is assumed that the cause of these deaths lies in the uncleanliness of the home or of the attendants. But before accepting this conclusion or adopting this proposal, it will be well to look at the facts. The actual mortality in child-bed in England and Wales is about four per 1,000 births. This number varies little from year to year, and has varied

little for a long period. Probably three-fourths of these deaths are due to sepsis. It is likely that the majority of the deaths from septicæmia could be prevented, but it by no means follows that universal hospital confinement offers the simplest remedy. It is now generally accepted that a large number of these cases are not infected from without, that is, either from unclean surroundings or from lack of aseptic precautions on the part of the doctor or midwife. All sorts of foci of infection may exist within the patient herself. The chief contribution to the mortality made by the attendant is unskilled instrumental and other interference. That unclean surroundings do not account for the major part of maternal mortality is well illustrated by the fact that for the period of years 1911 to 1914 the maternal death-rate per 1,000 births in Stepney averaged 2·8, in Shoreditch and Bethnal Green 2·6, and in Southwark 2·3, whilst the rate in Westminster averaged 4·7, and in Hampstead and Stoke Newington 4·4. These figures seem to bar out not only unhygienic surroundings, but also maternal employment in factories, even poverty itself, as prime causes. Possibly the higher obstetric skill and greater experience of doctors practising in crowded districts is a factor, but probably a small one only. Some colour, however, is lent to this supposition by the fact that the highest maternal mortality is found in remote and mountainous country districts, where it is difficult to get medical help in time. Thus, in 1920, the maternal mortality in Cardigan and Merionethshire was 8·9 per 1,000 births. The problem, any way, would seem to be one as much for the medical profession as for the public administrator.

After all, the phenomenon of birth is a physiological, not a pathological, one, and it is not unnatural that the majority of women should prefer to remain in their own homes during this process. The comparatively few who voluntarily arrange to be confined in public institutions, unless forced by absolute economic necessity (as is the case with most of those confined in Poor

Law institutions), do so as a mere matter of convenience But there is no particular reason why parents should be relieved of all inconvenience attached to parenthood ; and there are many purposes for which hospital beds are more urgently needed than for normal childbirth. What *is* urgently needed is the provision, in every district of the country, of a sufficient number of maternity beds, with skilled attendance, for the accommodation of difficult and abnormal cases, or those which there is reason to suspect will prove difficult.

If we allow that hospital accommodation is needed for 4 per cent. of all births we are probably making ample provision. As each bed, on an average, takes about twenty patients a year, the number necessary for each district can easily be calculated. In London, apart from the Poor Law institutions, there are about 120 obstetric beds in the general hospitals ; and about 400 in special maternity hospitals. It seems certain that if all the available beds in London were reserved for abnormal cases occurring in London itself, the accommodation would be reasonably adequate ; though the horrible state of overcrowding introduces æsthetic and domestic problems that complicate the issue. But, in the provinces, the tale is a very different one. In most districts there is either a complete absence or a serious shortage of trained midwives, obstetric beds, and consulting obstetricians. Where the demand is sufficient, purely maternity hospitals are desirable. And here it may be remarked that extreme simplicity and economy of structure and of organisation are in no way incompatible with the maximum of comfort and of efficiency. Elaborate buildings are quite unnecessary ; so also are elaborate staffs. Where the number of maternity cases requiring institutional treatment is smaller, it will probably be found best to add a new wing to a general hospital, or to build a simple addition within the hospital grounds. Motor ambulances make it possible for a single maternity centre to serve a wide area where the population is scattered.

The essential thing is that every woman in child-bed, no matter what her social position, should be able to command the services either of a doctor or of a trained midwife (with power to summon a doctor if necessary) ; and that in the event of any difficulty or abnormality an obstetric specialist should be available and a hospital bed if needed.

But the whole practice of midwifery among the poorer of the people must—without waiting for any general economic reorganisation—be raised to an altogether higher and more dignified level. The medical profession is realising the necessity of devoting much more attention in its scheme of education to practical midwifery, seeing how important a part it plays in the life-work of nearly every doctor. But the training of midwives, also, must be much more thorough and must be extended over a longer period of time. The few months which are now considered necessary for the technical training of a certified midwife are altogether inadequate. This is especially clear when we bear in mind that midwives are destined to share with doctors the responsibility of pre-natal care and advice, as well as of giving sensible and scientific teaching as to the management of infants.

But if we are going to attract capable women to the profession of midwifery, and to insist on a thorough technical education, we shall have to provide them with adequate salaries. The motive of self-sacrifice, in however noble a cause, is not one on which it is either wise or decent to rely for the performance of the routine work of the nation.

THE PANEL SYSTEM AND FREE CHOICE OF DOCTOR

It can but offend one's sense of decency that medical attendance on sick persons should in any way depend on the payment of a money fee. It is too much like asking a guinea for rescuing a drowning child or bargaining for payment before helping an old lady on to her feet. To have special knowledge and to have acquired special skill, enabling one to relieve suffering, yet to refuse it to one in need of it unless money is paid or promised seems incompatible with any code of honour. Yet that is the condition on which private practice is at present conducted. In order to be of any service doctors must remain alive, and to remain alive requires money. Clearly, therefore, if a class of people is to devote itself to the work of treating disease, money must be given in return. After all, it is no more mean in essence than that the baker should receive money in return for his bread, which is at least as necessary to the hungry as is medical skill to the sick. Let it be granted, then, that the doctor must be paid. There remain the questions, How, and by whom? If every one had plenty of money, the answers to these questions would not much matter. But such, unfortunately, is not the case. Most of the people who have need of the doctor's help not only have insufficient money to repay him, but are so short of it that their shortage is at the bottom of much of their need for his service.

Few people will now be found to dispute the claim that poverty must form no bar to receiving such medical assistance as is needed and available. In the past, an enormous amount of medical skill has been placed at the disposal of those too poor to pay for it through the charity of the well-disposed rich and of the doctors themselves. But times have changed, and the flow of charity has not kept pace with the growth of the

poor. Moreover, the poor hold different views as to their position, and many of them are no longer willing to receive as charity what they believe to be theirs by right. Thus it is that the State, representing the whole people, rich and poor, has largely taken over the work of paying the doctors for their services to those unable to pay for themselves. The money needed is, of course, obtained by taxation, or by compulsory contributions, which differ little from taxes. And the situation now is that the greater part of the adult population of the country is attended by doctors without the latter receiving any direct payment from their patients. The methods whereby the money is actually, and desirably might be, obtained will not be here discussed. But some discussion is necessary of its method of distribution among the doctors. In this chapter, attention will be devoted to the general practitioner, or family doctor, service. Few of the arguments hold good of specialists and consultants, whose relationship with the public is a quite different one.

Two alternatives present themselves, both in actual operation at the present time. Poor Law doctors are paid by fixed salary, roughly proportioned to the size of the district they serve. Their patients have no choice in the matter. If they live in a given district they are perforce attended by a given doctor, and if they have no sufficient confidence in or liking for him, they can do without him. So much the less work for the doctor. If he flagrantly neglects the routine of his duties, no doubt the guardians will rebuke him. But the principal safeguard of his patients lies in his honour and sense of decency.

The other method of payment is that adopted under the Insurance Act. Every doctor is entitled to accept service under that Act, and every insured person is free to choose for his doctor any one practising in the district. Naturally, the doctor who inspires the greatest confidence and gets the best reputation for skill and attentiveness attracts the largest number of patients.

In the present state of opinion it would not be thought equitable, either by the doctors or by the public, that the practitioner responsible for the treatment of 2,000 persons should receive the same salary as the doctor responsible for 200. As a matter of fact the method of payment adopted has taken this opinion into account, and each doctor's remuneration is in direct ratio to the number of patients who have selected him.

This question of inequality of work and of payment has been much debated.

The doctrine of the equality of man, stupidly interpreted, is responsible for much foolish thinking. In many Trade Unions, for instance, it has led to a standardisation of a day's work measured, as of course it was bound to be, by the capacity of the least efficient. Many social doctrinaires, influenced, no doubt, by the same dogma, have devised schemes of medical service so planned that every doctor will be allotted the same amount of work. The incompetent slacker is to be given the power of life and death over the same number of families as the most competent and zealous.

The virtues and vices of what is known as the Panel system are in no way involved in the virtues and vices of any particular system of health insurance, or, indeed, of insurance at all. Many people seem to confuse these two things, and the glaring defects of the Health Insurance Act are often spoken of as though they were defects of the Panel system.

It is, of course, ridiculous that a measure, claiming to be national in its purpose, professedly intended to place adequate medical treatment within the reach of those unable to provide it for themselves, should be so framed as not only to exclude from its provisions all those forms of medical service, such as surgery and everything included in the term " hospital treatment," which are, by universal agreement, of the greatest value, but to treat as non-existent the wives and families of employed persons, as well as all those who, through mental or physical defect, are unfit for commercial employ-

ment; and actually to deprive of all medical attention even the employed people themselves if, as a result of industrial depression, they are, for any considerable period of time, thrown out of work. It is an absurdity that whilst a certain measure of poverty is insisted on as entitling a man or woman to such medical services as are provided, a still further degree of poverty—creating a situation of even greater need—serves to disqualify. Not only does this system of alternate "in and out of benefit" reduce the whole thing to semi-futility, but, as Mr. Hoffman has pointed out, largely diverts the interests of the medical profession from matters relating to the advancement of medicine as a healing art to economic questions of payments, adjustments of claims, conflicts of interest, and all such questions as are now covered by special circulars or memoranda, special rules and regulations, as, for illustration, sickness and disablement benefit during pregnancy, conditions under which late entrants over seventeen are entitled to the full rate of sickness benefit, arrears of alien members, arrears of persons who have been treated provisionally as out of insurance, alterations in the registers of societies consequent upon changes in membership, members suspended from medical and sanatorial benefit on account of arrears, position of alien enemies under the National Insurance Act, medical certification and supervision of claims for sickness and disablement benefit, rate of benefit in certain cases in which arrears are discharged or contribution cards are surrendered late, notification by societies to Insurance Committees of changes affecting the index register, identification marks on contribution cards, controversies between approved societies, notifications of expulsions or withdrawals of members of approved societies, provisions as to behaviour during sickness, suspension of married women, continued payment of sickness or disablement benefit to persons permanently incapable of following their ordinary occupation, the position of persons who have lapsed from

insurance and again become employed contributors, and thus without end.

Moreover, no one who has once appreciated the essential dignity of a true democracy can regard as other than of possible temporary expediency a system of statutory segregation of those below a certain income level from those above it, thus giving legal recognition to accidental class distinctions based on degrees of wealth or poverty. These criticisms, however, are of the Insurance Act, not of the Panel system.

But, apart from the peddling Health Insurance system, Panel doctoring has not escaped criticism. To what extent are the criticisms justified? Are they of general application? Do they form the basis of a just condemnation of the Panel system?

So far as experience goes, I have some claim to express an opinion on these matters. Before the Insurance Act came into operation, I had, for many years, practised medicine in a crowded district in East London. I had, numerically, a very large practice, and consequently, under the Insurance Act, a very large number of my patients signed on to my Panel register. Indeed, I believe that the Panel list of myself and my partners is about the largest in England.

In considering the attacks which are from time to time made on individual Panel doctors—generally for neglecting their patients—we have to distinguish very carefully between attacks, even justified attacks, on a comparatively few individuals, and attacks on the whole body of which they are the less reputable members. One swallow does not make a summer, nor one black sheep a negroid flock. After all, Panel doctors are the same individuals as those known as general practitioners before the Insurance Act came into being. Those who neglect their duties now neglected their duties then, but no political question being involved we heard less about it.

Such neglect as has been alleged against Panel doctors cannot reasonably be attributed to the system, but to

the percentage of alloy which adulterates human nature in the medical profession, as in every other profession, trade, or calling in the world.

The questions to ask about the Panel system are these: Does it evoke a better, more efficient medical service than the system which it replaced? How does it compare with any alternative system suggested? Does it afford encouragement to the decent majority of doctors to do their best? Does it tend to the exposure and penalisation of the slack and dishonourable minority?

Now, in the first place, there is no need to talk cant. In spite of a few exceptions, the majority of doctors will never, for any length of time, live and work in the poor quarters of our big cities for such fees as the average working man can pay, when the alternative of living in pleasant and prosperous neighbourhoods and receiving good fees for their services is open to them.

In the old days, it was possible for a doctor to make a decent living in the slums only by working twenty hours a day and seeing far more patients than all but a phenomenally energetic man could properly attend to. Clearly, in order to remedy this state of affairs, and to attract the better type of doctor to poor districts, it was necessary in some way to supplement the possible fees paid by the poor people themselves, so as to make it as financially profitable to doctor poor people as to doctor richer folk. There was, and is, no other way. It may not have occurred to every one, but one of the chief troubles of poor people consists in the fact that they are poor. That was one reason why, before the passing of the Insurance Act, poor people on the whole received less efficient medical attention than the rich. Doctors have a kind of feeling, like that of Voltaire's interlocutor, that they must live. Now it is not to every doctor's taste to work twenty hours a day in the slums in order to earn as much money as he could earn in three or four hours in a more congenial *locale*.

Yet a doctor practising in the slums, in order to make even a tolerable income, had to see a couple of hundred patients a day, giving them such measure of attention as blended conscience and necessity dictated. I well remember the daily embarrassment—to put it mildly—that one experienced when visiting some ill-nourished child on discovering that, in order to pay even one's paltry fee, some article of the barest necessity had to be pawned. To suggest continuous attendance under such circumstances was to suggest an obvious outrage. *So far as the insured population goes,* the Panel system has at least put an end to that horror. If a Panel doctor feels that his patient needs visiting every day for six months, he is, at any rate, at liberty to do so without adding to the poverty of the home. If he does not rise to the opportunity, then it is human nature that wants reforming. No *system* will tend to help much, least of all would a full-time salaried service, which would inevitably take away from the patient all initiative, control and choice.

It is true that doctors who temperamentally take little pride in doing good work neglect it just as they used to do, but their neglect is not due to the Panel system, and, fortunately, they form a very small minority. Moreover, the Panel system has not only no responsibility for the creation of this neglect, but actually provides the only efficient remedies for it.

A remedy is rarely very effective in practice unless its application is in the hands of those who will gain by its success, or suffer from that which it is devised to cure. If we had a system of salaried State doctors, it would still be the patient who would mainly suffer from the doctor's neglect, but it would have to be some public committee or State department that would administer the criticism or inflict the penalty. The Panel system has the great merit of placing the remedy largely in the hands of the patient. Flagrant cases are, in addition, treated by the public authorities with fine

or expulsion, but the principal power lies with the Panel patient himself. In the first place, he is free to choose whatever doctor in his district is of best repute ; and, if he is dissatisfied with his doctor and loses confidence in his skill or attentiveness, he is free to leave him and choose another. There lies the true remedy for slackness and malpractice.

The doctor's income depends on the number of patients who select him and, having selected him, remain with him. Unfortunately, in the past, the apathy of some of the doctors has been as nothing compared with the apathy of the great mass of Panel patients. They have been apt to " grouse " but not to act. They are at last beginning to realise their powers ; and it is up to them, by a mere process of selection, to eliminate from the ranks of Panel doctors the dwindling minority of slackers—the only ones who gain publicity.

Under the Insurance Act, no provision has yet been made for specialist and hospital treatment, which nowadays forms so essential a part of a complete medical service. Until these additional services are included, and until the dependants of the employed population also come under the Panel system, it cannot be regarded as complete even for its limited purposes. But so far it goes it is, in my opinion, the best system yet devised, and I should much like to see it applied to other departments of practical economics.

It is not fair to debit the Panel system with the fundamental defect of the National Insurance Act, which is that it is applicable to one class of the population only, affording a typical instance of class legislation. Nor is it a defect in the Panel system itself that, even within that class, its potential benefits are available only to certain individuals in each family, or that, as stated above, it provides only an incomplete medical and surgical service, the more urgent and vitally important services being still entirely outside the insured person's reach.

Were the present Panel service of general practitioners supplemented by an efficient and properly organised service of operating surgeons, and ophthalmic, gynæcological and dental specialists, and adequate hospital accommodation, including all modern means of diagnosis; and were greater "freedom of choice" given to the individual patient, the machinery simplified, and the connection between the medical service and approved societies abolished, it is doubtful if a better system could at present be devised. The old-fashioned individual fee-hunting medical practice is condemned by experience as well as by the merest common sense. Under it, proper medical attention is barred for the majority of poor people. A salaried general practitioner service, on the lines of the Poor Law, would essentially reduce the position of the individual patient to a status difficult to describe other than as that of a pauper, for no comparison is possible between a "family doctor" service and such services as the police or judicial. It would give increased power and security to the slackers in the medical profession, while discouraging hopelessly the more zealous. Keen men will do good work under any system, but that system is the best which places within the reach of the greatest number all the medical skill available, and gives the maximum encouragement to its exercise.

Undoubtedly, however, the greatest fault of "Panel doctoring" lies in a quality which it shares with "private" medical practice—the necessity which the doctor feels of pandering to the ignorance and superstition of his patients.

In a letter to *The Times* of January 3rd, 1912, Sir Clifford Allbutt said: "In his Insurance Bill the Chancellor was content with an antiquated notion of medicine and of medical service; he took for granted, without inquiry, a notion built of some vague knowledge of village clubs and of the old-fashioned *vade mecum* way of doctoring. This is, 'For such and such a disease such and such a drug; take the mixture, drink it regu-

larly, and get well if Nature will let you.' And if our people have ceased to check the doctor's bill by the pill-boxes, bottles, and pots on the shelf, even Cabinet Ministers have not escaped from this ancient habit of thought."

If the object be to provide the people with the sort of medical attendance that they consciously want, doctoring under the Insurance Act certainly represents an advance on any doctoring which the bulk of working people have previously received. It enables them to have an almost unlimited supply of those bottles of medicine in which they have such trust, prescribed for them by doctors of their own choosing, without their being called upon to make any direct payment. From this point of view the service would be still further improved if the patients were also given the right to obtain from the chemist such proprietary medicines as Beecham's Pills, Mother Seigel's Syrup, or other personal fancy, if and when they chose. But from the point of view of the public health, which is the point of view from which a public medical service should mainly be regarded, these virtues lose much of their character; for few responsible persons, no matter how strongly they may believe in the principle of democracy, hold it to be the function of the State to provide, even partly, at the public expense, what even the majority of the people may demand in their individual capacity, when the thing demanded is believed by practically every administrator, and by every one specially informed, to be useless or harmful. To hold that individuals should be free to spend their own money on whatever luxury they fancy, or to dope themselves with whatever poison, material or psychologic, they choose is one thing; to use public money for the provision of these things is quite another. Involved in this is the one great argument against what is called free choice of doctors. So long as the majority of people are so grossly ill-informed as at present on all matters related to health and disease, this freedom of choice

and its influence on the doctor's pocket is bound to have some effect in adapting medical practice to popular prejudice. A doctor, for example, who conscientiously refused to prescribe medicine except in those cases in which he thought it of real value, would, in the present state of public opinion, find his quarterly cheques steadily diminishing in size. In this respect Panel practice, of course, is no more demoralising than private practice or the old club system. It is the dependence of the doctor on the goodwill of his patients for his income that constitutes the danger. The other side of this question is discussed above, but doctors will agree that at least nine-tenths of all the bottles of medicine prescribed in private or Panel practice are mere placebos, having none but a psychological effect on their recipients. So far as the majority of modern doctors are concerned, this perpetual pandering to the ignorant prejudices of their patients is indistinguishable from prostitution, and most doctors so regard it, however they may eventually rationalise their motives.

A saying of Hippocrates, the greatest of Greek physicians, expresses a point of view as unfortunate as it is common : " Better a doubtful remedy than none." It was a saying unworthy of him, and its practical application has tended to perpetuate the ignorance of the public, and quackery of every kind. Even now, when science is fast replacing the old bases of medical theory and medical practice, old habits and old traditions, combined with financial necessity, largely determine the actual every-day relations between doctors and patients. Nearly every doctor would like to escape from this slavery, but, mainly through the ill-informed teaching of the medical profession in the past, the public have utterly wrong notions of health and sickness, and of the province and potentiality of the healing art, and refuse to patronise doctors who do not to some extent pander to their ignorance.

All this is regrettable, for it makes difficult the prac-

tical application of those laws of health and those principles of medicine which doctors now know to be true. But the evil does not rest there. The strictly scientific habit of mind is rare, even among those who have had the scientific training of the modern doctor. Instinct—or prejudice, as we oftener call it—still influences our point of view, and the result is that very many qualified doctors, instead of frankly acknowledging to themselves that in their practice they are continually compromising with what they believe to be the truth rather than offend the susceptibilities of the public on whose fees they depend, rationalise their motives by an automatic process of self-deception and ultimately come to share the credulity of their patients.

This self-deception has, until the last few years, been assisted by the extraordinary conservatism of medical education, medical text-books, and medical examinations. To quote Sir William Osler: "In the progress of knowledge each generation has a double labour—to escape from the intellectual thralls of the one from which it has emerged and to forge anew its own fetters."

Take this matter of drugs. There is, nowadays, practical unanimity among the really able leaders of the medical profession as to the utter worthlessness of the majority of drugs enumerated in the *British Pharmacopœia*, and described in the text-books from which every student has to learn. I do not think that I can be accused of exaggeration when I say that nine out of every ten bottles of medicine prescribed are entirely useless to the persons taking them, and are known to be useless by the doctors who prescribe them. Benjamin Franklin—or was it Henry Ward Beecher?—said that "he is the best doctor who knows the worthlessness of the most drugs"; and Dr. Oliver Wendell Holmes thus summed up the matter years ago: "The disgrace of modern medicine has been that colossal system of self-deception, in obedience to which mines have been emptied of their cankering minerals,

the entrails of animals taken for their impurities, the poison bags of reptiles drained of their venom, and all the inconceivable absurdities thus obtained thrust down the throats of human beings, suffering from some want of organisation, nourishment, or vital stimulation. If all drugs were cast into the sea, it would be so much the better for man and so much the worse for the fishes."

This is but the slightest over-statement. It is not true of all drugs but of most. Doctors themselves are grimly realising with Osler that for the crass therapeutic credulity so widespread to-day, and upon which our manufacturing chemists wax fat, there is no more potent antidote than the healthy scepticism of long study in the post-mortem room.

The same physician reminds us that the nineteenth century has witnessed a revolution in the treatment of disease and the growth of a new school of medicine. The old schools—regular and homœopathic—put their trust in drugs, to give which was the alpha and omega of their practice. For every symptom there were a score or more of medicines—vile, nauseous compounds in one case; bland, harmless dilutions in the other. The characteristic of the new school is firm faith in a few good, well-tried drugs, little or none in the great mass of medicines still in general use.

But, as this writer elsewhere points out, man has an inborn craving for medicine. Heroic dosing for several generations has given his tissues a thirst for drugs. The desire to take medicine is one feature which distinguishes man, the animal, from his fellow-creatures. It is really one of the most serious difficulties with which we have to contend. Even in minor ailments, which would yield to dieting or to simple home remedies, the doctor's visit is not thought to be complete without the prescription.

The action of a few drugs is known to be definite, and there are occasions and conditions for their rightful application, but patients almost without exception,

whatever the occasion or conditions, insist on their bottle of medicine, and if one doctor will not give it they go to one who will. Almost certainly, even if the whole of the medical profession could be induced to abstain from thus pandering to the crude beliefs of the laity, they would merely drive their patients into the hands of ignorant charlatans. The conscientious doctor can, after all, console himself with the knowledge that his medicine need be nothing more than a harmless placebo, coloured and tasty; and he can accompany it with some good advice which, without it, would fall on deaf ears.

And this is the dilemma which continually confronts the doctor. Is he, even at the price of debasing the intellectual currency, to aim solely at the cure or relief of his patients; or is he to say what he believes to be true, and to refuse, even for a good object, to lend support to superstitions which he believes to be false, leaving it to the choice of his patient and his attendants whether they prefer to follow his advice or not?

It is not always a perfectly easy question to answer. Fortunately, the doctors themselves are working towards a remedy for this evil, and are conducting an increasing amount of propaganda for the enlightenment of the public. Indeed, nothing better shows the new spirit which actuates the more thoughtful leaders of the profession than their attitude towards this matter of health teaching.

It is but a few years ago that any attempt to popularise the "secrets" of medicine, whether by lectures or in the newspapers, was looked at askance and regarded as worthy of professional condemnation. The continued ignorance of the public seemed to be the doctor's safeguard. That was the very spirit of quackery. For the essence of quackery is ignorance hiding in a cloud of mystery; and for its success still greater ignorance on the part of its victims is necessary.

But because so much medical treatment, especially that consisting in the administration of drugs, is futile, we are not justified in jumping, as the "found-them-out" type of reformer is apt to do, to the conclusion that clinical medicine is useless and that the processes of disease may safely be left alone. The *vis medicatrix naturæ* is often a safe enough therapeutic agent, but it is not to be relied on in all cases. A case of glaucoma, for example, left to nature, ends in blindness. A case of ascites, with diminished renal activity, if untreated by the doctor is likely to have a quick and fatal ending. No one with the slightest experience could argue that in valvular disease of the heart—responsible for such a large proportion of our annual deaths—the attention and advice of a careful physician is not of the utmost value. That we should study nature is obvious; and it is the forces of nature on which in the last resort we have to rely. But nature's remedial processes, unguided by human intelligence, are not always adequate to the work of overcoming disease in time, from the individual's point of view. There are, as Dr. Hurry in particular has pointed out, any number of vicious circles in disease which unaided nature is powerless to break; which yet may often be broken by the physician at almost any point. And then, the circle having been broken, nature will finish the job.

Thus the ultra-nature-worshippers are really the exponents of a heresy; that is an over and exclusive statement of one aspect of truth. Even drugs have their part to play, and sometimes an important one. The number of useful drugs is not great, but of these the potency is beyond dispute. It would be surprising if this were not so. We have but to remember how tiny a fragment of certain chemical substances, such as strychnine or hyoscine, is sufficient to arrest the whole processes of life. Moreover, it is by means of chemical substances that messages are taken from one important structure to another within the body, ordering or

inhibiting activity as the case may be. This chemical messenger service, indeed, is probably an earlier, more primitive part of our mechanism than is the nervous system; and there is no *primâ facie* reason why we should not, by means of chemical substances, produce results similar to those at which nature aims.

Whilst, with a proper environment and the general exercise of individual intelligence coupled with sound knowledge, it is probable that at least three-fourths of existing disease would disappear, there yet remains, and will remain in a society in which pity has so largely countered the forces of natural elimination, a large body of disease calling for the individual attention of specially-trained practitioners of medicine. And this irreducible minimum is certain, for many years to come, to be at least doubled, through the failure of the ideal conditions named. It is this service of attendants on sick individuals that raises the issue of "free choice of doctors," with its inevitable accompaniments, inequality of work and of pay, already discussed from one point of view.

The practice of medicine is not comparable with the practice of any of the mechanical crafts, or with routine work of any kind. It is by its very nature inexact, individual and, in a sense, experimental Doctors are continually confronted with difficulties not entirely like any that have been faced before. Personal judgment has continually to be exercised, and the very highest human qualities, intellectual and moral, are constantly needed if the best results are to be had. Again, the art of medicine is essentially progressive. We do not want to repeat the 1,000 years of stagnation which medicine experienced during the Middle Ages. Therefore, as has been stressed elsewhere, there must be a very large measure of individual liberty; for progress depends on individual initiative and individual enterprise. If the practice of medicine were embodied in a code of treatment laid down by the Ministry of Health the long series of discoveries

which the last few decades have afforded us would stop.

There is no getting away from the fact that, if we are going to have individual enterprise, the innovator must be free to take on himself the greater part of the moral and financial responsibility involved. All the objections to a State-controlled Press hold good equally with a State-controlled Medical Service. It may here be said that State control is a very different thing from the statutory fixing of minimum conditions. But, in the light of the necessary variations in medical practice and the desirability of there being variations, it is of the first importance that the principle of free choice of doctors shall be maintained. If doctors could be standardised there would be no particular reason why blocks of the population should not be allotted to each. There is no argument in favour of free choice of post offices or tax collectors. But newspapers, books and doctors come into a different category. The State is not competent, other than in the capacity of a tyrant, to allot to any of its component citizens a doctor whom they do not trust. For after all it is the citizen's life and death with which medicine is concerned.

In their book, " The State and the Doctor," Mr. and Mrs. Sidney Webb, whilst recognising the advantages of a free choice of doctors, propose to limit the privilege to the " well-to-do " (" the limit for gratuitous treatment would be something like 3*s*. a week per adult, so as to admit only the class absolutely unable to pay the private practitioner's fee "). " It is this free choice of doctors that affords the most potent inducement, to all who can afford the fee, to consult the private practitioner. . . . Any suggestion that the State Medical Service, or any collective organisation, should be allowed to offer this attraction should be instantly negatived." It is to be hoped that if ever the Labour Party attains to Governmental power, it will tolerate no official medical service that is not the best available and equally for the use of every citizen in the country.

Whatever may be said in favour of the deterrent principle where money relief is concerned, there is certainly nothing to be said for it in this matter of medical treatment in sickness. One sort of doctoring for the rich and another and worse sort for the poor belongs to a code that one hopes will soon be obsolete.

DOCTORING THE HEALTHY

In dwelling on measures for the relief or cure of disease, or even for collective environmental improvement, we must be careful to keep well in our minds that these alone do not cover the field of preventive medicine. Elsewhere I have pointed out that the individual himself has a very important part to play, even when external environment is at its best. For twentieth-century man and twentieth-century civilisation have not yet established a biologic equilibrium. A great deal of conscious adaptation is needed in order that our primal forces may be severally exerted in suitable degree to fit an environment largely the fruit of our own imagination. Definite, formal hygienic education is therefore necessary for every one, both children and adults. And it will be a necessary part of a sound health policy that doctors, or a specialised section of them, shall be told off to fulfil the original significance of their title.

There is, however, another piece of organisation absolutely essential in a programme of sound preventive hygiene. Thanks very largely to the development of humanitarianism based, of course, on the social and maternal instincts, the stern methods of nature for eliminating those organically less able to overcome the dangers which beset all of us have increasingly been prevented from operating. We have, therefore, a considerable amount of hereditary tendencies to structural and functional weaknesses and abnormalities which call for the attention of the surgeon, the physician or the dentist, at their earliest appearance.

There is, in America, a rapidly growing movement which suggests great possibilities. An elaborate organisation has been built up, with branches all over the States, to enable people to visit competent doctors

and to be thoroughly overhauled at regular intervals of a year or less, whether they are ill or well.

The examinations made are very full and searching. The heart and lungs are stethoscoped, the urine tested, the blood-pressure taken, and the nervous system thoroughly investigated. A full report is given to the client, and his attention is drawn to the beginnings of any disharmony, and to the significance of any tendencies to abnormality.

In the light of the report, the habits of life are criticised and suggestions made for the maintenance of health, at a stage when such suggestions are likely to be effective.

Physicians have not, in the past, been very successful in curing disease when once it has manifested itself. But this new department of personal preventive hygiene is far more hopeful. Unfortunately, the ordinary medical training fails to equip the doctor with that knowledge of the earliest signs of a departure from health which the really effective practice of preventive medicine needs.

At St. Andrew's, Sir James Mackenzie and a small band of ardent disciples are devoting themselves to the systematic study of the beginnings of disease—those signs and symptoms scarcely noticed by the patient, and usually pooh-poohed by the doctor when his attention is drawn to them.

If we are to get full value out of our doctors, provision must be made for the regular, periodic examination of every man, woman and child in the country who has no "conscientious objection" to being seen by his doctor. If possible, this examination should take place in the home, and the doctor's report should indicate not only the condition of the heart, lungs, teeth, urine and general health, but also any obvious connection between the health and the environment. These records —which would, of course, be treated as confidential— would be of great statistical value, contrasting with the utterly useless records now being kept under the

National Insurance Act. It would be the duty of the doctor, on the strength of his examination, to warn his patient of any untoward indication and to advise him as to the appropriate treatment and where and how he may obtain it—whether from the doctor himself or from one of the district specialists. He would further advise him as to the personal hygienic measures desirable under the circumstances.

This systematic examination of the whole population would certainly be of far greater national value than the perfunctory—and inevitably perfunctory—prescribing of bottles of medicine for the trifling colds, blackheads, and dyspepsia that looms so large in the practice of every doctor, as well as in the out-patient departments of hospitals, to-day.

As things are at present, the amount of undetected illness, especially in its early stages, is very great. In the United States, something like 33 per cent. of all the men of military age examined for service in the Great War were found to be disqualified by reason of physical disability ; and these were all men in the prime of life. In 1918, 700,000 school-children in New York State were examined, and over 500,000 were found to have physical defects calling for treatment. In New York City, defects were found in 77 per cent. of the children. In 1919, a careful health survey was made of the entire community of Framingham, Mass. ; 4,473 persons were examined ; 77 per cent. were found to show some physical disability, defective teeth accounting for about 25 per cent. Of this 77 per cent., 25 per cent. were found to be seriously ill. The interesting point about this health survey—apart from the unexpectedly high disability percentage shown—is that, although 77 per cent. were found to be suffering from physical disability, and 25 per cent. from major ills, a census taken before the examination shows only 6 per cent. who reported any illness. It is thus by no means enough to treat ailments only when the sufferers are aware of their existence and seek medical aid. Of the total number of

affections found in the Framingham survey, it was medically estimated that 61 per cent. were either " theoretically preventable or easily remediable," while about 15 per cent. were non-preventable. The balance were classed as " doubtfully preventable."

I have quoted the figures of this American experiment because of the care and thoroughness with which it was carried out. But that corresponding experiments in this country would show very similar results is evidenced by the result of the examination of recruits during the late war, as well as by the statistics of school medical examinations.

The value of systematic medical surveys will, however, be but slight unless we mean business and resolve that the individual shall have it within his power to act on the doctor's reasonable advice. The absurd lack of connection between the visiting practitioner and the local public health authority which exists at present must, of course, be ended. The link between the general practitioner and the medical officer of health is fully as necessary, and should be as close, as between the practitioner and the operating surgeon. The one should be as available to apply the appropriate treatment in which he specialises as the other. And so we see once again that no real line can be drawn between preventive and therapeutic medicine, or between the administrators of hygiene and the clinicians.

TWENTY YEARS HENCE

LET us suppose, then, that the majority of us, including our politicians, have decided to take a pride and interest in our country, and seriously to make the best of it, tackling every problem in the same scientific spirit as that which alone has made possible every advance in our knowledge and all the discoveries of which we profess to be so proud. At the end of twenty years of such a policy, how will England differ from the England of to-day ?

In the first place, a considerable number of new towns will have sprung up, very different from most of the towns of 1923. The population of none of them will exceed 30,000 people, and, although important factory industries will be in full operation in one quarter of each of these towns—equipped with power, for the most part electric, the energy being distributed by cable from great central power stations—the general aspect will be much more that of a large village than of a contemporary industrial town. Although there will be considerable variation in the style and the size of the several houses, there will be an obvious unity about the whole town which will show that it is a deliberate piece of applied art. The smallest house will have a garden of not less than a tenth of an acre, and many will have an eighth of an acre or more attached to them. Nearly all the houses will have from five to ten rooms, in addition to a bathroom, and will be fitted with every modern convenience for providing a constant hot-water supply, for the storage of food, for cooking, and for reducing house work to the minimum.

The centre of the town will be occupied by a large square or green, around which will be grouped the principal public buildings—town hall, theatre, post office (adapted to many additional functions beyond those it now performs), and so on. The principal

shopping streets will radiate from this. Just outside the actual town will be allotments, sufficient for all who care to cultivate them, sports grounds and swimming baths. A very little further out, on high ground when such is available, will be the general hospital, with sufficient beds to meet the needs of the town and surrounding villages. At least one ward will be set aside for maternity cases needing hospital treatment. There will, of course, be one or more resident medical officers, and an adequate staff of nurses, and it will have two or more motor ambulances always available. Apart from operating surgeons, an ophthalmic surgeon, dental surgeons, and other resident or visiting specialists, the town will be staffed with a service of general practitioners—probably about one to every 3,000 inhabitants. There will also be a service of certified midwives, and well-trained nurses to attend to the sick in their own homes. The administration of this health service—apart from the internal administration of the hospital—will be carried out by a senior medical officer, in co-operation with, and in financial subordination to, a health committee, elected partly by the borough council, partly by the medical and nursing *personnel.*

The function of the whole of the health service will be to maintain the highest possible state of health throughout the community. The existing gaps between preventive and remedial medicine will be bridged over, and it will be realised that there can be no hard and fast differentiation of function between the preventers and the curers of disease. The province of the senior medical officer and of such direct assistants as he may need will, like that of the present medical officers of health, be mainly preventive. He will take no part in the actual domiciliary treatment of sick persons ; but the intimate relation which will exist between him and the whole health service will keep him in touch with the realities in a way that no paper statistics ever can. The practitioners themselves, who alone are in a position to see at first hand the actual connection between

individual illness and remediable conditions, will no longer feel that the latter is no concern of theirs, belonging—as is at present assumed—to another department of public service.

At the central clinic every man, woman, and child will be encouraged, even though in apparently good health, to come at annual or other stated intervals for thorough medical examination. In this way the beginnings of all sorts of disorders will be recognised at a stage when they may comparatively easily be put right. In this way, also, really valuable information will be accumulated, which will add enormously to the efficiency and usefulness of the doctors themselves.

In addition to these completely new towns, many of our existing small towns of 5,000 to 10,000 inhabitants will have been developed along somewhat similar lines, not only helping to divert industry and population from the overgrown cities, but affording a centre of life, entertainment, and intellectual stimulation to the surrounding agricultural districts. By the proximity of markets afforded by these towns, agriculture will be greatly stimulated, and much waste of time and money now diverted to transit avoided. Fresh, wholesome food—vegetables, fruit, milk, butter, and eggs—will increasingly replace the tinned and dried imported foods, to the great economic and hygienic advantage of all.

Meanwhile, what will have happened to the great cities ?

Owing to the restrictions that will have been placed on the starting of new industries in or near to overcrowded districts, a considerable part of the population will have been diverted to the new towns that will have grown up, or will be in process of developing. Further relief of congestion will have been afforded by well-designed garden suburbs, built, as a regrettable necessity, just outside the present city frontiers. Every transit facility will be given to enable workers, manual and clerical, to get to and from their work in connection

with industries inherent in the cities' *locale*, or so firmly established there that removal to a fresh district presents an insuperable difficulty. As fresh accommodation in the new towns has become available, a large number of mere tailoring and other workshops will have been compulsorily removed.

This thinning-out of the population will have made possible the complete demolition of large areas of existing slums, the sites of which will have been converted into gardens and playgrounds. More and more the big cities will have been tending to become great centres of political, commercial (as distinct from industrial), scientific, and intellectual life generally. The permanent residents will therefore tend to be the families of those directly associated with those vocations, but, naturally, there will be a very large floating population, and a number of traders and workers to meet their requirements.

Owing to the new towns being of an altogether more open and semi-rural character, to the thinning out of the old cities, and to the abolition of factory smoke and the wasteful black smoke of domestic chimneys, the air of the towns will offer little more resistance to the sun's rays than, and will possess most of the health-giving qualities of, the air of the open country. There will no longer be such disparities as that between the infant mortality rate of Huddersfield and that of Letchworth, the latter having become the normal figure for the whole country. The average length of man's life will be ten years greater than at present, and sickness will be reduced to a quarter of its present dimensions.

All this is perfectly practicable, indeed, easy of accomplishment. Have we got the necessary intelligence and grit ?

A FEW FIGURES

The following tables—taken from official reports—illustrate some of the statements and arguments in the preceding pages.

ENGLAND AND WALES. ESTIMATED AGE-DISTRIBUTION OF THE POPULATION ENUMERATED IN JUNE, 1921.

Age Group.	Males.	Females.	Persons.
All ages ..	18,082,220	19,803,022	37,885,242
0	418,018	403,847	821,865
1	426,373	412,896	839,269
2	275,432	269,778	545,210
3	283,311	278,358	561,669
4	316,138	310,980	627,118
0	1,719,272	1,675,859	3,395,131
5	1,851,476	1,825,016	3,676,492
10	1,871,680	1,859,101	3,730,781
15		1,775,621	
20		1,693,819	
25		1,684,108	
30	8,444,534	1,613,406	18,077,566
35		1,515,575	
40		1,350,503	
45	987,104	1,162,336	2,149,440
50	897,635	993,198	1,890,833
55	751,633	805,127	1,556,760
60	593,578	629,578	1,223,156
65	431,660	487,297	918,957
70	291,573	366,917	658,490
75	153,807	221,890	375,697
80	62,592	99,645	162,237
85 and upwards	25,676	44,026	69,702

ENGLAND AND WALES. DEATHS FROM PRINCIPAL CAUSES, 1921.

Disease.	Number of Deaths.	Proportion per 1,000 Deaths from all Causes.
1. Measles..	2,241	5
2. Whooping cough	4,576	10
3. Diphtheria	4,772	10
4. Influenza	8,995	20
5. Tuberculosis of respiratory system	33,505	73
6. Other forms of tuberculosis ..	9,173	20
7. Cancer	46,022	100
8. Diseases of nervous system and sense organs	48,217	105
9. Disease of the heart	53,707	117
10. Other diseases of the circulatory system..	14,571	32
11. Bronchitis	33,684	73
12. Pneumonia	34,708	76
13. Other diseases of the respiratory system..	5,707	12
14. Diarrhœa and enteritis ..	17,086	37
15. Other diseases of digestive system	18,329	40
16. Diseases of genito-urinary system	17,862	39
17. Premature birth and diseases of early infancy	26,442	58
18. Old age..	27,406	60
19. Violence (all forms)	16,501	36
20. Other causes	35,125	77
	458,629	1,000

England and Wales

Period.	Average annual birth rate per 1,000 living (annual rates for 1917—1921).	Average annual number of births registered (actual numbers for 1917—1921).	Average estimated population (actual estimate for 1917—1921).	Average annual number of deaths registered (actual numbers for 1917—1921).	Average annual death-rate per 1,000 living (annual rates for 1917—1921).	Average annual infant mortality, *i.e.*, deaths of children under one year of age per 1,000 births (annual rates for 1917—1921).
1871—1880	35·4	858,878	24,225,271	517,831	21·4	149
1881—1890	32·4	889,024	27,384,934	524,477	19·1	142
1891—1900	29·9	915,515	30,643,316	557,538	18·2	153
1901—1910	27·2	929,821	34,180,052	524,877	15·4	128
1911—1920	21·8	809,622	35,750,765	518,805	14·3	100
1917	17·8	668,346	33,711,000	498,922	14·4	96
1918	17·7	662,661	33,474,700	611,861	17·6	97
1919	18·5	692,438	36,800,000	504,203	13·7	89
1920	25·5	957,782	37,524,000	466,130	12·4	80
1921	22·4	848,814	37,885,242	458,629	12·1	83
1911—1915	23·6	865,895	36,299,589	519,744	14·3	110
1916—1920	20·1	753,349	35,201,940	517,867	14·4	90

Notifications of Diphtheria in the Years 1911—1920. Rates per Million

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
London ..	1,637	1,572	1,696	2,018	2,110	2,063	2,059	2,068	2,181	3,052
England and Wales ..	1,324	1,239	1,392	1,592	1,514	1,428	1,284	1,305	1,496	1,857

Deaths from Diphtheria, 1911—1919. Rates per Million

	1911	1912	1913	1914	1915	1916	1917	1918	1919
London	140	102	95	158	163	146	148	169	178
England and Wales	138	102	123	160	166	156	133	143	136

Number of New Cases of Tuberculosis

	1913	1914	1915	1916	1917	1918	1919	1920
Pulmonary ..	80,788	76,109	68,309	68,109	68,801	71,631	61,154	57,844
Non-pulmonary ..	36,351	23,388	22,283	22,799	20,884	18,942	16,357	15,488

Deaths from Tuberculosis

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Pul. .	39,232	38,083	37,055	38,637	41,676	41,545	43,113	46,077	36,662	33,469
Non-pul.	13,888	11,968	12,421	11,661	12,619	12,313	12,821	11,996	9,650	9,076

Notification of Scarlet Fever in the Years 1911—1920. Rates per Million

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
London ..	2,321	2,505	3,887	5,536	3,939	2,068	1,518	1,722	2,973	5,014
England and Wales ..	2,900	2,980	3,575	4,445	3,592	2,194	1,447	1,439	2,287	3,192

Deaths from Scarlet Fever, 1911—1919. Rates per Million.

	1911	1912	1913	1914	1915	1916	1917	1918	1919
London	38	37	41	71	76	34	22	30	34
England and Wales	53	55	58	77	66	39	22	29	34

Infant Mortality According to Age during 1916 in Different Classes of Administrative Areas of Ireland and of England and Wales

Age.	IRELAND.			ENGLAND and WALES.				
	"Nineteen Towns" Districts.	Remainder of Ireland.	Ireland.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.
Under 1 month ..	40·37	30·44	33·47	36·90	32·02	39·55	36·35	36·27
1—3 months ..	25·15	13·07	16·75	16·83	17·14	19·77	15·76	13·30
3—6 months ..	24·65	10·11	14·55	15·17	17·29	18·25	13·76	10·81
6—12 months ..	30·74	13·32	18·64	22·31	22·78	28·22	19·96	15·62
1—12 months ..	80·54	36·50	49·94	54·31	57·21	66·24	49·48	39·73

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