

the course of general practice, all point to one conclusion. In the native races we have a field for research unequalled anywhere in the world.

The problems and their solutions lie at our doors and in our own hands. The material surrounds us on every side and we are slow, tragically slow, to take advantage of the secrets which nature presents for our unravelling.

Durban, the hub of Natal, is the centre towards which are drawn hundreds of thousands of natives monthly. In the immediate vicinity of the city are large reserves, where tens of thousands of Zulus live in their own native manner, untouched by the habits of civilization. In other words, Durban would make the ideal centre whence extensive and intensive research work could be conducted. No institution exists as yet where such a project could be undertaken. Facilities for pathological, anthropological and general medical research are non-existent or else strictly limited. A vast field exists whence could be extracted knowledge of inestimable value. That must be granted. But where are the facilities offered to make this work possible?

What is absolutely essential is the establishment of a medical research institute for this purpose, in which and from which it would be possible to conduct the multifarious investigations which are so necessary and so essential. I feel optimistic enough to hope that the Government, once its attention were drawn to the position, as I have endeavoured to outline it here, would see its way clear to the establishment of such an institute in Natal. Its importance cannot be over-estimated.

Provided the facilities are created on the spot, and in Durban, we are in the midst of one of the largest native populations in South Africa, students and research workers from all over the country, and even from other lands would very soon be attracted to what must prove to be one of the most important and fascinating problems of medical science in this country.

Such a research institute can only be financed and controlled by the Government of the country in collaboration with the two medical schools of South Africa. It would be beyond the means of any private body.

The problems it will tackle are national problems. The answers to these problems

will prove to be a national asset and although it is difficult to prophesy what the ultimate results will be, I feel confident that certain lines of investigation will yield knowledge, which will prove of great etiological, sociological and therapeutic value, not only for our native neighbours, but also for the science of medicine in general, all over the world.

To the anthropologist the possibilities have long been known, and excellent and valuable work has already been done. But only the fringe of the problem has been touched, and much has still to be done. To the sociologist and psychologist, the native mind is still almost a closed book. And to the scientists, pathologists and medical investigators of this country, there opens up a vista of tremendous possibilities. Once a centralised research institute is established, every observer and man of science must interest himself, and I feel convinced that the Government of South Africa would be sympathetically inclined to entertain the founding of what must inevitably prove to be one of South Africa's most important scientific laboratories.

The field is rich. It lies before us and around us. No one is more ideally suited for its investigation than the South African born and South African educated student and it behoves the South African people to foster this work, for the results obtained will, I am convinced, repay the time, energy and money invested.

PROBLEMS OF NATIONAL HEALTH.

SIDNEY L. KARK.

“Surely the time will come when humanity will refuse to be diseased any longer.

“This list of filthy and hideous complaints—too filthy to be calmly spoken of: these smallpoxes, typhoids, choleras, cancers, tumors, tubercles—dropsy, diabetes, uraemia—all preventible, and easy enough to prevent;

“And yet—incredible though it seems—men and women still tolerating and condoning them;

“Men and women who pride themselves on their culture, refinement, punctiliousness of nose, and so forth—and who would turn up the latter at the sight of a pig and a few fowls in an Irishman's cabin—actually tolerating in their own persons the perpetual presence of the most disgusting organisms;

"And other men and women, through sheer ignorance, believing such a state of affairs to be necessary.

"Surely the time will come when to be diseased, to spread disease around one, or transmit it to descendants,

"To live willingly in the conditions that produce disease, or not strenuously to fight against such conditions,

"Will be looked on as a crime—both of the individual and of society."

"Coming of Democracy," Edward Carpenter, 1883

The History of Medicine is most frequently presented as being the story of the lives of a series of great men. We repeatedly hear such names as Hippocrates, Vesalius, Harvey, Pare, Koch, Osler, and hosts of other prominent workers of the past. The tale of advance in biological knowledge is, however, not merely the story of these men, but rather a depiction of the social and economic conditions which prevailed at different periods producing these men and their work. It is therefore necessary that a History of Medicine should be a History of Disease, for by this means only can we appreciate the essential etiology of disease-processes and the effects which national health has had on the welfare of the peoples.

No more apt illustrations of the devastating effects of disease can be found than the disasters which occurred during the Middle Ages in Europe as a result of frequently-recurring plague epidemics. During these times nothing was known of bacteria. The factors influencing the powers of resistance to infection were not understood. The cellular constitution of living matter had not been demonstrated. A very crude conception of the causative factors of disease prevailed. Some denounced the wickedness of the people, others the Protestants and Jews, and the positions of the planets were studied, as it was generally held that this was a determining factor in the production of these epidemics. Numerous other such unscientific beliefs were held by the medical profession as well as by the laity. The inevitable result of this ignorance was that very few useful means of combating the disease were available and wherever the plague was introduced it struck at the very roots of the structure of society. It completely disorganised the economic and social system prevailing at the time. The following extracts are from a letter, dated July 10th, 1656, written by an

inhabitant of the City of Naples. They will adequately convey to the reader an impression of the great transformation which took place in the mode of life of the inhabitants of this town as a result of an epidemic of Plague.

"The town is now only recognisable by its edifices and magnificent houses, and no longer by its teeming population, the decrease and destruction of which is constantly augmented by the piled up corpses . . . The air is always so thick and misty, and is further obscured by multitudes of birds enticed by the carrion of corpses, the stench of which is overwhelming . . . The most beautiful girls have now abandoned all pretensions to magnificent clothes, but are seen scurrying through the streets like shadows in search of food they are unable to find . . . All kinds of people are to be seen here, who have lost their senses, running about in their shirts or even completely naked. In their distress they often fall down in the streets and die . . . Multitudes of dogs and cats scamper through the streets, appeasing their hunger on the corpses lying about everywhere. The churches, shops and houses are all closed. There are neither doctors, physicians, apothecaries, nor priests to be had; thus all must die without medical attention or sacrament. Those who are fortunate are dragged with a rope round their necks to a field and burnt. The others remain lying in the streets or alleys, and are gnawed by dogs and cats."

After that time the French Revolution and the Industrial Revolution in England produced an environment conducive to the spread of the most fatal infectious diseases. The rapid growth of cities did not afford an opportunity for intelligent administration, with the result that thousands of people flocking from all parts of the country became huddled together in restricted areas. As Newman states: "there was overcrowding of houses on the land and of people in the houses. There were problems of cleanliness, of feeding and of schooling; there were increased difficulties and risks in regard to infection and the incidence and the treatment of disease all complicated and aggravated by an ever-increasing density of population . . . the effects of the industrial revolution proved that free competition may produce wealth without producing well-being."

There was nobody at that time who could foretell and thus combat the harmful effects which this sudden change invoked in the lives of the people. The government was forced to assume more control over the life of the individual, and much industrial legislation and numerous housing reforms were rapidly introduced. Thus it was from this chaotic state of the health problems confronting the nation that our laboratories and health services ultimately evolved. If they had not emerged during these times Western civilization could never have survived and dominated the world as it has to-day.

The past four decades have evidenced a series of experiments by various countries with the object of maintaining and increasing the amenities of life gained by our predecessors. We have learned that the occurrence of infective disease depends mainly on the virulence of bacteria on the one hand and the resistance of the body tissues on the other. We know that the nature of the environment is an important factor in determining the distribution of infective organisms and the susceptibility of the body to such conveyed diseases. As a result of this knowledge we find that most civilised countries have numerous laws relating to sanitation, housing and industrial conditions of labour. Russia, in recent years, has made the most drastic changes in the organisation of medical services, which in that country have been socialised and are under the direct control of the State. The result has been that within the short space of seventeen years there has been a change from barbaric ignorance to a comprehension of the elements of hygiene. In England, America and various other countries, the governments are gradually assuming more control over the health services. We see national insurance schemes, a continual increase in the number of local health authorities and expansion of the district surgeoncy system.

How do we intend broaching this problem in South Africa? To-day the health of our nation is indeed at a low level, as is evidenced by the increasing incidence of such diseases as typhus and typhoid fevers, tuberculosis, plague, syphilis, puerperal sepsis and numerous other preventable afflictions. Recently in the Legislative Assembly Dr. E. P. Baumann pleaded for a Commission of Enquiry into the desirability of establishing a state medical

service in the Union of South Africa. Would the establishment of such a service be a solution to the problems of national health with which we are faced? Before we are able to express an opinion on a subject of such importance, it is necessary to analyse carefully the various factors which influence the health of the people in this country—both the European and non-European sections of the community.

South Africa is a land containing within its borders vast native territories such as the Transkei, which has a population of over one million non-European inhabitants, whose mode of life is to this day very primitive. In addition there is the European rural population which occupies the greater part of fertile land. Finally, there are the large industrial centres such as Johannesburg and Cape Town peopled by widely differing races living side by side. These industrial centres and the European farmers are dependent upon a labour supply from the native territories.

The problem confronting us is, therefore, peculiar in that we are not only faced with varying economic strata in society, but in addition, we have to contend with a heterogeneous group of peoples, each having its traditional mode of living and its peculiar susceptibility to particular diseases.

It is generally accepted that diverse ethnic groups have differing reactions to disease-producing agents. The basic factors determining this variation have not as yet been explained, but several theories have been propounded, of which perhaps the most useful is that of a survival of the fit as a result of a gradual natural selection. The Eastern-European Jews form an interesting example of this process. Owing to their crowded, unhygienic Ghetto life in the past those individuals with a high resistance to microbic infection have outlived the susceptible individuals and thus perpetuated the group. The result is that the descendants of these people, having inherited this useful constitutional reaction, exhibit a lower incidence of the various diseases found in urban areas than do other groups. It has been found, for instance, that the occurrence of such a disease as tuberculosis is relatively uncommon amongst these people and infant mortality rate is also lower. Numerous illustrations of this phenomenon of constitutional resistance to disease could be given. It is common

knowledge that races which have not as yet come into contact with a particular disease show a relatively weak defensive reaction to the causative organism. This statement is well supported by the high incidence of such diseases as syphilis and tuberculosis among the non-European races in South Africa. All records tend to show that these diseases did not prevail before the advent of Europeans to this country, but it cannot be concluded that this phenomenon is sufficient explanation for the common occurrence of these diseases. It would be naive, in such a case, to consider only the weakness in the inherent mechanism of these peoples' reaction. No one to-day would argue the age-old dispute of the relative importance of inherited factors and environmental conditions in determining the characteristics of an individual. The science of genetics has proved to us that very few conditions can be ascribed simply to faulty gene characteristics. All evidence obtained tends to demonstrate that the environment and the individual's inherent make-up are so interwoven that the vast majority of disease-processes can only be looked upon as a resultant of the inter-play between these two factors. Hogben, writing on this subject, states:—

“Biological science is teaching us how to eliminate many diseases by regulating the environment. This does not mean that genetic factors play no part in the incidence of such diseases. There is little doubt that genetic differences do enter into the susceptibility of different individuals to epidemic diseases. The elimination of epidemic diseases by selective breeding might conceivably be effected. Such a process would be extremely slow, even if we had all the relevant facts at our disposal. Clearly it is more practicable to regulate the environment in such a way that individuals do not contract such diseases.”

The factor of heredity will have more importance than it has to-day when all persons are subjected to a healthy environment. In South Africa to-day the major ills of the country can be treated by improving the conditions under which our population has to live.

When considering the part played by such factors as diet, housing, clothing and education of an individual in determining the

incidence of disease, the heterogenous ethnic structure of South African society must constantly be borne in mind. Each racial group has its own traditional mode of living and, therefore, the etiological factors producing disease may, for the purposes of this discussion, be considered from two main aspects which are closely related. Firstly, there are those due to the continuance of the traditional mode of living in the face of an altered environment and, secondly, those due to an alteration of the mode of living as a result of the impact of various differing cultures.

Reference has already been made to the effects of the industrial revolution in England. A similar process is afoot in South Africa, where both the European and non-European races are involved. The impact of Western civilisation on that of the Bantu has resulted in both groups of people being subjected to an environment which previously they had not experienced. The Hottentot and Bush races, being unable to alter their mode of living to conform to the new conditions imposed on them, are rapidly becoming extinct. That this will happen to the Bantu or European groups as a whole is very doubtful and the slogans “South Africa for the Whites” or “A Black South Africa” cannot be considered as anything but the product of a biased mentality, without any knowledge of fact and history. Both groups have settled in this country and both demonstrate that they will remain apparently dominant races. Black and White have become inextricably interwoven into the economic sphere and they are now mutually dependent. It is essential, therefore, that we consider both groups as contributing to the welfare of South Africa.

In an article in the September 1934 issue of *The Leech* I gave a brief account of the economic aspect of the health of the Bantu. Here it was shown that poverty was a major factor in the production of infective diseases as a result of the filthy unhygienic conditions under which they are compelled to live. Their diet has altered from one of a fairly well balanced type—the more important foodstuffs being meat, milk, maize and kaffir-corn—to one of a high carbohydrate and a low protein content. Before the settlement of Europeans in South Africa these peoples obtained their meat supplies by hunting wild animals, for domestic animals were rarely slaughtered for such purposes. To-day this avenue of sus-

tenance has been closed to them and, as the price of meat is prohibitive, the source of protein supply has been greatly restricted. Apart from the radical alterations in diet, the urban native has been unable to avoid adopting even partially the European convention of dress: but, since the native's economic standard is low, he is unable to afford to change his clothing frequently. Besides, many of these natives have not imbibed even the most rudimentary notions of cleanliness and personal hygiene. The nature of their housing need not be stressed, for every South African is familiar with their badly constructed, ill-ventilated and overcrowded dwellings.

The inter-action of all these factors produces a definite lowering of resistance to infection, thus rendering these people far more susceptible to infective diseases such as tuberculosis and syphilis than the European. The European in South Africa, in addition to being less susceptible to tuberculosis than his non-European neighbour, is found to have a higher resistance to this disease than the European in Europe. This lowered incidence can probably be accounted for by the difference in climatic conditions, together with the fact that the nature of the work performed by the European in South Africa is not as strenuous as that of the European in other countries, the menial work here being performed mainly by the Bantu peoples. As a result of the structure of our economic system to-day menial work is more often associated with poverty.

Medical practitioners are wont to condemn the ignorance of the masses as being a large factor in the production of disease. That ignorance of the elements of hygiene and the consequent fallacious conception of the nature of disease-processes is an obstacle in the way of improving health conditions cannot be doubted. This type of ignorance is very often met with in South Africa, where a large majority of the population, Bantu, Poor Whites and many other Europeans, are almost completely illiterate. They have received the education which their particular folk-lore has handed down to them and are for all practical purposes ignorant of the rapid strides which science has made. The progress of medical science is a closed book to most people. The suggestion made by Sir Edward Thornton, in an address to the South African Medical

Congress held in October of last year, that hygiene should be a compulsory examination subject to be taught by competent persons in all schools is therefore one that every reasonable person must support for his own sake. The crux of the problem, however, is *£.s.d.* It is impossible to raise the masses to any reasonable hygienic standard of living by education alone. This improvement can only come with a more equitable distribution of the essential products of the country. Then only will the effects of education be appreciated.

The Department of Public Health has done a good deal in the nature of educating the public by issuing pamphlets and obtaining the assistance of the Press in many matters relating to health. The appointment of District Surgeons and the recent introduction of a scheme whereby native medical aids will be educated for routine work in the native territories, whatever the shortcomings of such a scheme may be, do indicate that the government is at last conscious of the urgent needs of the people. However, it must be frankly admitted that care of the sick at present leaves much to be desired.

The South African Medical Council report that there were, on 30th June 1934, 2,562 registered medical practitioners. The population estimated as at 30th June 1933, by the Director of Census and Statistics was 8,370,000. This can only be considered a rough estimate, for it includes 6,479,700 non-European persons. The last census for these peoples was held in 1921 and, in addition to this, registration of non-European births and deaths is only compulsory in urban areas. Although this state of affairs is highly unsatisfactory, preventing the compilation of vital statistics, the estimated population must serve for the present purpose. The above figures indicate that on an average there is 1 medical practitioner to over 3,000 persons. Were this average a true indication of the existing conditions, we should be forced to the conclusion that there is an insufficient number of skilled men to meet the demands of the population. England has approximately 1 medical practitioner to every 1,100 persons. In addition, it must be remembered that in that country there is a far greater density of population than obtains in South Africa. Hence the medical practitioner's services are more readily available there because he is not required to cater for a large number of

people living at great distances from one another. The South African practitioner serves a large population scattered over a large area. It must be borne in mind that the average is no indication of the actual conditions obtaining in our country, for the distribution of practitioners is uncontrolled, with the result that certain areas are very scantily provided with skilled medical attention. This applies particularly to the native territories. The following abstracts from the Public Health Department's report for the year ended June 1934 indicate the findings, relative to this subject, of the inter-departmental committee appointed by the government in September 1933:—

"1. A mere sprinkling of doctors eking out an existence in private practice. Only natives with a little ready cash such as those recently returned from the mines can avail themselves of their services.

"2. A part-time district surgeon in each of the magisterial districts, who, as far as his government work is concerned, is required to do the medico-legal work in his district, undertake the treatment of venereal diseases, provide medical attendance to persons for whom the Government is responsible and carry out occasional investigations of outbreaks of disease that threaten to assume epidemic proportions.

"3. A few doctors associated with missions whose work cannot be too highly praised, but who also touch only the fringe of native medical requirements.

"All the qualified men available amount to very little. In many parts there is only one medical man to serve the needs of 30,000 people."

It is no wonder, then, that we still have large numbers of inyangas, officially recognised and otherwise, and witchdoctors who are a perpetual danger to the community.

In tables A and B appended to this article it will be seen to what extent the State has met the demands of care of the sick. There are only 14 full-time District Surgeons. These officers are situated at the large centres, namely Johannesburg, Cape Town, Durban, East London, Port Elizabeth and Bloemfontein. There are no full-time officers in the other large centres, nor in the densely populated native areas. Pietermaritzburg, Pretoria, Germiston and the Divisional Council of the

Cape, in addition to those just mentioned, are the only local authorities which have a full-time Medical Officer of Health. It is surprising that the only Reef towns with a full-time Medical Officer of Health should be Johannesburg and Germiston, and the following statement made in the Department of Public Health's 1934 report, relative to the high incidence of typhoid fever, is instructive:

"The Reef towns outside Johannesburg suffered heavily. During the months October to May, during which the disease usually spreads rapidly in unhygienic surroundings, 515 cases were reported from Boksburg; 283 from Benoni; 356 from Springs; 243 from Brakpan and 152 from Germiston. The state of affairs indicated by these large figures in towns of such importance is deplorable. The deduction that their health services are unsatisfactory is almost unavoidable. On enquiry into the matter the astonishing fact will be learnt that none of the towns mentioned employ even one medical officer specially trained in the prevention of disease, who devotes the whole of his time to public health matters. . . . Here it will suffice to draw attention to one obvious result of an imperfect health service in a thickly populated community."

The state of affairs that exists in our mining industry on the Rand indicates the necessity for inaugurating an organisation whereby the care of the sick will be controlled directly by the government. It is well known that this industry spends enormous sums of money annually for the maintenance of hospitals in which their employees are treated. The vested interests appreciate the importance of health in relation to the efficiency of the worker and it is as a result of this that such an efficient medical service has arisen. Their attitude, however, is determined solely by the consideration of the worker's capacity for labour whilst in the employ of the mines. This is well evidenced by the treatment accorded to a native labourer who has developed tuberculosis. If his condition is not sufficiently grave to prevent him travelling, he is sent back to his home. Here the duty of the mines to their workers ends. The case receives no further treatment and probably disperses the infective bacilli amongst the other members of the tribe. Such an attitude on the part of the mines is understandable, for it is strictly businesslike.

Table A: Medical Services in the Union, excluding Private Practice.

	<u>Full Time</u>	<u>Part Time</u>
A. Central Government—		
Health	44	326
Defence	7	10
Mines	13	3
Interior	46	—
Various	7	1
Railway	1	320
University and S.A.I.M.R.	32	—
	— 150	
B. Provincial Administration—		
Schools	13	
Residents	77	
	— 90	
C. Local Authorities—		
These include:		
Municipalities, Village Management Boards, Local Boards, Village Councils, Health Committees, Local Administration and Health Boards, Divisional Councils, Health Boards, Mining Commissioners and Magistrates; and number 558 exclusive of magistrates.		
M.O.H's.	14	
	— 14	200
Totals	254	860

Table B: District and Additional District Surgeoncies in the Union at 21st February, 1935.

Province	Whole-time	Whole-time but jointly with local authority or public body.	Part Time.		Total	
			On inclusive annual salary.			On annual salary with certain supplementary fees and allowances.
			District Surgeons.	Additional District Surgeons.		
Cape	4	3	—	16	137	160
Natal	3	—	—	—	42	45
Transvaal	6	—	1	14	56	77
O.F.S.	1	—	—	13	47	61
Union	14	3	1	43	282	343

For the above Tables I am indebted to the Medical Graduate Association of this University. They are taken from an address delivered to that Association this year by Dr. E. H. Cluver of the Department of Public Health.

The problem for the government, however, cannot be viewed from this restricted angle, for every living soul in the country might be an asset were it not for ill-health or any other associated phenomena. It is obvious, therefore, that the responsibility for the welfare of

such men must rest ultimately with the state and, until such time as the government realises its responsibility, there can be no reasonable hope of the people receiving such medical care as we are capable of providing.

Sufficient has been said to indicate the un-

satisfactory state of medical services in our country, both in rural and urban areas, which results from the unequal distribution of available services as well as the inadequate number of medical practitioners in our country. With these facts before us we cannot but disagree with the oft-repeated platitude that the medical profession is overcrowded. When estimating the number of medical practitioners per head of population, those who uphold this opinion include only those persons who are able to meet the costs of medical care. While no one can disagree that the vast majority of residents in this country are too poor to foot the bill of ill-health, nevertheless, one cannot but be amazed by this restricted vision, which does not include the consideration of the care of some three-quarters or more of the population. It is claimed that medical practitioners should not have to worry about their bread and butter as happens to-day in this country. That this leads to competition and all the evils which are associated with it, such as touting, cannot be denied; but surely the solution for this disgusting practice, which must persist as long as we blind ourselves to the actual cause, is not to reduce the already limited number of medical men but rather to evolve some system whereby the nation, both wealthy and poor, will receive the care that is essential for the maintenance of industrial civilisation.

As Wilbur states: "We now find ourselves with a great mass of usable facts and with a splendid body of trained men and women ready to apply them for the benefit of humanity, but without an administrative or economic system which will give all members of our society an even or an adequate opportunity to profit by them." That this is true of South Africa, as well as of America, there can be little argument. We have the available resources at our command. We have a large number of highly skilled medical men trained at our own efficient schools as well as others from European and other medical schools. That they do not serve the public to the extent they might, is no fault of theirs. The fault lies with the government who have not given the subject the consideration which it has deserved. The medical services have been allowed to grow without any satisfactory form of organisation.

An attempt has been made to demonstrate the vastness of the problem and the difficulties which must face any South African

government in its attempts to improve the standard of national health. No single approach to the problem can possibly be a solution in itself. Disease is not simply due to inherent defect, nor poverty, nor harmful customs, nor ignorance and, finally it cannot be claimed that lack of care of the sick is the sole cause. The health of the nation is a manifestation of the interplay of all these factors, consequently any scheme must be a comprehensive one, involving, where necessary, radical alterations in the present structure of society. It will need a brave and determined government and it must necessarily be an arduous task, but it is one in which each and every citizen can do his share. As Sir George Newman states: "There is no fate, caprice, chance or 'short-cut' which will bring us sound national health. It must be caused, for it is an effect, it must be earned as our wages are earned. We must march together along the great highroad marked out for us by Nature and history, and beaten hard by the footprints of the human family through thousands of years."

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