

H. A. WALDRON

# The Medical Role in Environmental Health



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environmental  
health

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health

'Would you tell me please, which  
way I ought to go from here?'

'That depends a great deal on where  
you want to get to . . .'

*Alice's Adventures in Wonderland*

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# FOREWORD

The Reorganization of the National Health Service Act, 1973, profoundly changed the role of the medical adviser to local authorities. The former medical officer of health was a statutory officer, with clear-cut duties to his local authority laid down in the Local Government Act, 1933, the Public Health Officers Regulations made under that Act, and other legislation. Furthermore, during the 125 years that the office of Medical Officer of Health had been in existence a strong bond of respect had evolved between him, his Chief Officer colleagues, the elected representatives, and the public. It was to the Medical Officer of Health that the community looked for leadership in the prevention of disease, and in all aspects of social life affecting the Public Health.

In the 1973 Act, the office of Medical Officer of Health was discontinued and largely replaced by the Medical Officer for Environmental Health, although some responsibilities were dispersed to the Specialist in Community Medicine (Child Health) and the Specialist in Community Medicine (Social Services). The new Medical Officer of Environmental Health, although an officer of the area health authority, is seconded to the local authority and requires the approval of the local authority for his appointment. On medical matters relating to the environment and for the control of communicable disease, he is responsible to the local authority, not only for advice, but for initiating and participating in the administration of the required measures.

Because of the complexity and divided responsibility which exists in the national environmental health services, the Medical Officer for Environmental Health (MOEH) is involved in a confusing administrative field.

Dr Waldron has, therefore, done a considerable service in set-

ting out the authorities involved in environmental health and calling attention to those with medical input. Also, he has conducted a survey into how much time MOEHs devote to medical advice on environmental health matters, which tends to reveal an unsatisfactory situation. There is also an indication that others are making decisions on medical matters in environmental health without the knowledge or the statutory authority to do so, and this can be dangerous. Unless the MOEH is fully involved in the environmental health services of the local authority, he will be ill-equipped to deal with an emergency when it occurs.

THE MOEH is essentially a doctor with a broadly based knowledge and experience of environmental conditions which are prejudicial to health. He is an expert on human ecology, and this is a fundamental requirement for community health.

Dr Waldron would like to see a greater integration between the work of the MOEH and the occupational health services, and he presents some strong supporting arguments. Finally, he deals with the training for the specialist in environmental health, as he rightly recognizes that the old guard trained in courses for the Diploma in Public Health will disappear in a few years and new doctors will be needed with an identifiable skill in environmental health.

This book merits careful study, not only by specialists in community medicine, but also by environmental health officers and others. A better basis for communication and shared responsibility is necessary, and there is a need to review further the services for environmental health, both nationally and locally. One can only hope that this careful review will encourage others to look again at the medical role in environmental health.

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and Environmental Health,  
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## AUTHOR'S NOTE

The work upon which this book is based was carried out between 1975 and the early part of 1977. It is a measure of the speed with which things change in environmental health that some of the information in the text has become outdated and some of my suggestions are already being implemented. Nevertheless, the main thesis of the book, that the medical input into environmental health is diminishing and that ways should be found to correct this trend remains unaltered by events and I hope that the book will stimulate discussion and action.

The project was undertaken at the invitation of Professor Thomas McKeown and I would like to express my thanks to him, not only for the opportunity to study the problem, but also for his help and encouragement during the time that I was working on it. I am also extremely grateful to the many people with whom I had, often lengthy, discussions for giving so freely of their time and the benefits of their wisdom and experience. To the community physicians who completed the questionnaires referred to in Chapters 2 and 6, I also give thanks.

Finally, I must express my gratitude to the Nuffield Provincial Hospitals Trust for their generous support. Without them, none of it would have been possible.

H. A. WALDRON

*London, 1978*



# I THE HISTORICAL BACKGROUND

Primitive societies generally consider major disease to be the result of the malignant influence of external forces, either magical or mystical.<sup>1</sup> Trivial illnesses, on the other hand, are recognized as being the obvious consequences of over-eating or over-drinking, or the result of minor accidents and injuries, although even here a mystical element may be invoked as a secondary phenomenon. Thus, pain and swelling would reasonably be expected to follow the sting of an insect, but for what reason did the insect sting?

To prevent himself becoming seriously ill, primitive man had to ensure that he did not offend his deities and that he did not fall prey to the spells which an enemy might cast upon him. For these functions the medicine man or the priest (if he were not one and the same) was paramount. If he was not successful in warding off disease, then he had the task of seeking a cure, either through his magical powers, by which he could propitiate the gods or counteract a spell, or by some other form of intervention, such as the administration of herbal remedies.

By analogy with what is known of recent primitive societies, one may suppose that a similar attitude towards disease was found in prehistory. It is evident from the many flint tools which have been discovered, that neolithic man was skilful with his hands and it is known that he dared to perform surgery on the skull. Judging from the number of skulls which have been recovered from both the Old and the New Worlds, the operation of trepanation was relatively common. It is astonishing that the patient submitted himself to this formidable ordeal and that having done so, he survived, but many patients did so, as many skulls with perfectly healed wounds testify.<sup>2</sup> Presumably less

Notes to this chapter begin on page 55.

adventurous procedures such as limb splinting and the removal of foreign bodies (arrow-heads, for example!) were also attempted, although the evidence for this is less clear. The magico-religious element in medicine, however, was the dominant feature in the medical system and all the ancient peoples gave their healing gods a prominent place in their theological system. Animistic philosophy, however, was inconsistent with the development of medicine as a science, which came only with the rise of naturalism, which may be regarded as a true protoscience.<sup>3</sup>

The naturalists considered that disease was not of divine or supernatural origin, but that it resulted from causes which were amenable to reason. Hippocrates was the first great naturalistic physician of whom we have knowledge and it is in one of the books attributed to him, *Airs, Waters and Places*, that the earliest foundation of the relationship between environment and health is to be found. According to the author of the book, a knowledge of the environment is indispensable for medical practice, for he writes :

Whoever wishes to pursue properly the science of medicine must proceed thus. First he ought to consider what effects each season of the year can produce . . . He must also consider the properties of the waters . . . whether (the natives) use marshy soft waters, or such as are hard and come from rocky heights, or brackish and harsh. The soil too, whether bare and dry or wooded and watered, hollow and hot or high and cold . . . For if a physician know these things well, he will not be ignorant of the local diseases, or of the nature of those that commonly prevail; he will not be at a loss in the treatment of disease, or make blunders, as is likely to be the case if he have not this knowledge before he consider his several problems.<sup>4</sup>

*Airs, Waters and Places* was intended to have two practical applications. First, to enable a physician to predict the illnesses which would be likely to occur in a given locality and their prognosis, thus enabling him to establish his reputation when he came to a new district. Secondly, to serve as a guide for the Greek colonists. When a colony was established, it was necessary not only to satisfy religious and military requirements, but also to ensure that the site was healthy, and for this the advice

of a physician well versed in environmental health would be needed.

The ideas contained in the book were later assimilated by the Romans, and Vitruvius in *De Architectura* stressed the importance of determining the likely effects on health of sites for new buildings and he gave detailed specifications for the selection of places suitable for the founding of new cities and the construction of houses.

The environmental component which is to be found in the medical philosophy of ancient Greece, however, was accompanied by another, radically different from the first. These two were symbolized in the persons of Hygieia and Panacea, who were commonly described in Greek mythology as the daughters of Asklepios, the divine physician. Hygieia embodied the belief that men would remain healthy if they lived wisely and according to the laws of reason, and she may be identified with the preventive, or environmental aspect of medicine. Panacea, on the other hand, specialized in the knowledge of drugs and she symbolized the belief that illness can be cured by the intervention of the physician skilled in their use. She thus represents the disease-orientated side of medicine.<sup>5</sup>

As medicine has developed throughout history, this dichotomy of approach has been maintained, but attention has been increasingly given to intervention rather than to prevention. Not that prevention has ever been totally ignored. For example, the *Regimen Sanitatis Salernitanum*, which was probably written during the thirteenth century, laid down careful rules for the healthy life and was one of the most influential works of the Middle Ages, indeed Sigerist says there has never been a more successful medical book.<sup>6</sup> The *Regimen* deals with sleep and wakefulness, with the benefits of rest and exercise, and with the qualities and effects of food and drink. The advice it contained was empirical, based on sound common sense as the following recommendation makes plain :

Rise early in the morne, and straight remember,  
With water cold to wash your hands and eyes,  
In gentle fashion retching eury member,  
And to refresh your braine when as you rise,  
In heat, in cold, in *July* and *December*.

Both comb your head, and rub your teeth likewise :  
If bled you haue, keep coole, if bath'keepe warme :  
If din'd, to stand or walke will do no harme  
Three things preserue the sight, *Grasse, Glasse, & Fountains,*  
At Eue'n springs, at morning visit mountains.<sup>7</sup>

The interventionist philosophy was boosted, however, by the spectacular post-Renaissance developments in the physical sciences. The humoral dogma of Hippocrates and Galen was gradually ousted by an approach which viewed the body as a machine, and disease as some kind of mechanical failure. The new movement of iatromechanics subscribed enthusiastically to the dualistic nature of man proposed by Descartes and, indeed, medical thought has still not rid itself completely of the constraints which were thereby imposed upon it.

During the latter part of the eighteenth century there arose in France, in the wake of the Revolution, a new style of clinical practice which was to become the model for modern development. The physician took careful note of his patient's symptoms and, with the help of newly developed diagnostic aids, of which the invention of the stethoscope and the rediscovery of auscultation were preeminent, minutely observed the clinical signs. He next moved with his patient to the mortuary, where he recorded the autopsy findings in the same detail. In this way, a concordance was made between signs and symptoms in life, and the pathological changes discovered at autopsy. Great strides were made in the knowledge of the natural history of disease, especially the diseases of the chest. Therapy counted for little in this system, since nothing appeared to halt the inevitable progress of the disease.

This medical model spread from Paris to Vienna and the schools in Germany, arriving comparatively late in England. With its emphasis on the autopsy room the Paris method survived well into the twentieth century. The good clinician spent much of his time in the mortuary and was often a pathologist in his own right. Sir William Osler was the epitome of the clinician who considered that if his work had to be limited, then 'chemistry and physiology should yield to the claims of the dead-house!'<sup>8</sup> The Paris method is still at the heart of medical teaching, although nowadays there is less need to wait until

death to visualize the pathological process, and since the advent of powerful drugs, considerable attention has to be given to their effects, both beneficial and adverse.

One important consequence of the way in which medical education has evolved is that doctors are much more concerned with disease than they are with health. On this account, preventive medicine has followed a course which has tended to separate it and its practitioners from the mainstream of medicine.

In Great Britain, the major advances in preventive medicine date from the nineteenth century and it is to this era that the giants of the public health movement, men such as Chadwick, Farr, Simon, Southwood Smith, Snow, and Duncan, belong.

Progress in public health became necessary because of the changes brought about in society by the Industrial Revolution. The critical advance, and the one upon which industrialization depended, was the development by Boulton and Watt of an iron steam engine which could drive machinery of all kinds. Steam could only be generated in a fixed spot, however, and the power distributed over a small area. Consequently, the new industries drew in a work-force which was recruited from the land, and in the course of a generation or two Britain was transformed from a rural to a mainly urban society.<sup>9</sup> The legacy of the industrial towns, which grew up around the sources of power, ill-conceived, badly planned, and over-crowded, is still with us. Sanitary conditions in these new towns were primitive, the water supply was often tainted, the disposal of sewage was inadequate and the air was often grossly polluted. As a consequence, 'the younger population, bred up under noxious physical agencies, is inferior in physical organisation and general health to a population preserved from the presence of such agencies.'<sup>10</sup> The insanitary conditions in which the townspeople lived were ideal for the spread of infectious diseases, of which tuberculosis, cholera, typhoid, and smallpox were preeminent. Amongst children, the mortality rate was particularly great. Edwin Chadwick, writing in 1842, noted that '... of all who are born of labouring classes in Manchester, more than 57 percent die before they attain five years of age, that is, before they can be engaged in factory labour'.<sup>11</sup>

Chadwick's interest in public health was stimulated by his

work for the Poor Law Commission. He was appointed assistant commissioner in 1832 and became secretary in 1834. He was an unlovable man, dogmatic, over-bearing, but possessed of great energy and drive. In his early years he was greatly influenced by Jeremy Bentham, but was critical of the doctrine of *laissez-faire*, favouring instead the supervision of sanitation by a strong central authority. In the course of his work for the Poor Law Commission he had been impressed by the great cost of supporting the thousands of widows and orphans who were left destitute each year because their menfolk died in the prime of life from diseases which he believed ought to be preventable. Thus Chadwick's motives in pressing for sanitary reform, like those of so many of the other Victorian reformers, were based on economic rather than humanitarian considerations. Diseases were unpleasant, but more important, they were inefficient. Children who died young could not be employed, and when adults were sick, the quality of their work suffered. More deaths meant less production. Chadwick's views were contained in his great work, the *Report on an Inquiry into the Sanitary Conditions of the Labouring Population of Great Britain*, published in 1842. The book was crammed with maps showing how diseases like cholera were concentrated in the worst-drained areas of towns and cities and with tables showing how life-expectancy varied from place to place, depending upon the standards of sanitation. To correct the deplorable state which has been discovered, Chadwick advocated improved methods of sanitation, of which

. . . the primary and most important measures and, at the same time the most practicable, and within the recognised province of public administration, are drainage, the removal of all refuse of habitations, streets and roads and the improvement of the supplies of water.<sup>12</sup>

The report contained details and drawings of one of the most important inventions in the history of medicine, and one of the least remembered, the round, narrow bore, glazed earthenware drainpipe, through which sewage might be carried more cleanly and efficiently than the old brick tunnels or wooden pipes. This pipe was to be the key to the system whereby every house would receive clean water and through which waste water would carry away the sewage. And all for 3½d a week on the

rent. The improvements in health which Chadwick considered would result from the implementation of the measures he had described could be amply justified on the grounds

that the expense of public drainage, of supplies of water laid on in houses, and of means of improved cleansing would be a pecuniary gain, by diminishing the existing charges attendant on sickness and premature mortality.<sup>13</sup>

Chadwick's report was a sensation and sold ten thousand copies. The political implications were immense, for not only would a great deal of public expenditure be involved in carrying them through, but also a new branch of government would have to be created for their supervision.

To study the matter further, and to advise the government, a commission was established in 1843 by Sir Robert Peel and his Home Secretary, Sir James Graham, which is most often known as the Health of Towns Commission. Chadwick was not a member of this commission, although they consulted him frequently and he actually drafted the first report (1844) and the recommendations of the second (1845). The commission recommended that a government department should be set up and that local arrangements for the provision of water, and for drainage, paving, and street cleansing should be placed in the hands of one administrative body.

On the basis of the commission's recommendations, a Public Health Bill was introduced into the Commons in 1845 by Lord Lincoln, but had to be deferred because of Peel's resignation over the matter of the Repeal of the Corn Laws. The bill was re-introduced in 1847 but met with great opposition from the so-called 'dirty party' who opposed sanitary reform on the grounds that it would interfere with the liberty of the individual, and they caused its withdrawal. In the end, it required the impetus of the threat of an outbreak of cholera to carry the first Public Health Act through Parliament in 1848. Two years before this, however, Liverpool, then one of the least sanitary of towns, had succeeded in passing the Liverpool Sanitary Act through Parliament. This was the first comprehensive sanitary act passed in Great Britain and it gave the town council the sole responsibility for drainage, paving and cleansing and also permitted them to appoint a medical officer of health (MOH). Dr William Duncan,

then aged 41, was appointed to that office on 1 January 1847. The following year, the City of London copied Liverpool's example and secured the services of John Simon as their MOH, a post which he filled with distinction for the next seven years.

The 1848 Public Health Act applied to all parts of England and Wales except London, and it permitted local authorities to assume responsibilities for sanitary arrangements in their area under the aegis of newly created local boards of health, and to appoint medical officers of health. At the centre was the General Board of Health, whose members were the Lords Morpeth and Ashley, Chadwick and Dr Southwood Smith. The General Board was set up to help and advise the local boards on sanitary matters and it had also to approve the appointment of the medical officers of health. Under exceptional circumstances the Privy Council was enabled to give the General Boards powers to direct local authorities to bring certain sanitary measures into operation. One exceptional circumstance was if the local death rate exceeded 23 per 1,000 over a period of seven years.

The power to intervene in local affairs was greatly resented and the Board found itself struggling against mounting opposition, both within and without Parliament. Chadwick, who was bent on a policy of centralizing power as much as possible, was criticized for his dictatorial attitude and for trying to limit the free action of the local authorities.

At its inception, the Public Health Act had been fixed to remain in force for five years only, and in 1854 the Government motion to continue the Act was defeated and Chadwick, at the age of 54, disappeared from public life. His passing was not much mourned. *The Times* commented, 'we prefer to take our chance of cholera and the rest than be bullied into health'.<sup>14</sup> Later in the same session of Parliament the motion to continue the Public Health Act was passed, but subject to annual renewal and the General Board of Health was reconstituted with Sir Benjamin Hall as its president. In 1855 Simon was appointed the first medical officer to the new board and was set on a career which was to establish him as the greatest figure in the history of public health.<sup>15</sup>

The second General Board of Health, however, lasted no longer than the first, for in 1858 it was dissolved when the Public Health Act was renewed and its medical duties transferred to the



Privy Council. Simon was likewise transferred and his work for the Privy Council from 1858 to 1871 is usually regarded as his best. During this period he submitted fourteen annual reports to the Privy Council in which he covered the whole gamut of preventive medicine. He wrote of old diseases such as cholera, diarrhoea, and dysentery, and of new diseases such as diphtheria which first appeared in epidemic form in 1855, those imported, and of those acquired in hospital. He wrote of the diseases of occupation, detailing trades where the risk was especially great, such as mining, grinding, polishing, china-scouring, and carding in the cotton mills. He spoke of the lead-mining district in England where 'there is a larger proportion of widows than in any other place in the kingdom' and he deprecated the monotony of work, the over-crowding and under-ventilation, and the mental privation from what was beautiful and animating in nature. The workman, said Simon, was not in a position to 'exact his sanitary rights' and so

year after year, as far forward as any present judgement would wittingly speculate, the same terrible waste of adult life must, with no great mitigation, continue, unless the Legislature see fit to provide, by special enactment, for more wholesome conditions of labour.<sup>16</sup>

Simon went on to suggest that employers should use the best practical means to protect their workforce from harm, that unusually hazardous industries should be supervised by the government, and that the factory inspectors should be given powers to deal with the common sanitary faults in factories.<sup>17</sup>

The Privy Council was relieved of its responsibilities for public health in 1871, when a new department of State, the Local Government Board was formed by the coalescence of the Medical Department and the Poor Law Board. For the first time, public health had its own minister, and the establishment of the Board marked the beginning of the modern development of the public health service. Simon moved again, this time to become medical officer to the new Board, but this was the least satisfactory part of his career, for he found himself becoming increasingly subjected to the whims of the lay secretariat who limited his scope for determining health policy and in 1876 he resigned.

Simon's last great work had been in assisting with the drafting

of the Public Health Act of 1875, which Frazer<sup>18</sup> has described as 'a model enactment' and which was not superseded until 1936. The Act was of massive dimensions, containing no fewer than 343 sections and 5 schedules, and it covered all the legislative needs in the field of sanitation as they were then understood.

By the last quarter of the nineteenth century, the parallel system of lay and medical inspectors, with which we are now so familiar, had been well established. The provisions of the various Nuisance Removal and Disease Prevention Acts had given local authorities powers to deal with such matters as insanitary housing, offensive trades, the sale of unsound meat, and the pollution of streams. They were given no powers to deal with overcrowding, however, nor to ensure the wholesomeness of drinking water, and many were reluctant to use even those powers which they had been given, either through neglect or wanton malice. To overcome the deficiencies in the existing legislation, a new Sanitary Bill was drafted, which passed through Parliament in 1866, speeded on its way by the appearance of cholera in London. Under the terms of the 1866 Act, local authorities were *required* to inspect their districts and suppress nuisances and so a corps of local authority inspectors gradually came into being whose concern was with sanitation and hygiene. The medical officer of health, on the other hand, was principally concerned with infectious diseases.

Local authorities were not compelled to appoint medical officers until 1872, but many of the larger towns and cities had done so by then, under the Public Health Act of 1848.<sup>20</sup> Holders of the office were not required to have any special qualifications or experience, but their appointment needed the approval of the Local Government Board. Much to Simon's chagrin, however, it was the officials of the old Poor Law Board who conducted the negotiations with the local authority, not the Medical Department, and hence many of the appointments were made from the ranks of the Poor Law Medical Officers.<sup>21</sup>

The duties of the medical officer of health were to advise his authority on matters to do with infectious disease and sanitation, and to take executive action when epidemics broke out in his area. Until the Public Health Act of 1875, the only useful means the MOH had to counter infection was by recommending improvements in sanitation. The 1875 Act, however, enabled local authorities to build fever hospitals and thus the medical

officer of health began to take much more interest in the clinical aspects of infectious diseases.<sup>22</sup>

Despite the very great activity by the sanitary reformers during the middle years of the nineteenth century and the mass of legislation, the condition of the poor scarcely improved and it was only during the last quarter of the century that an improvement began to be noted.<sup>23</sup> The mortality statistics of the great cholera epidemics demonstrate this with great clarity. There were four major outbreaks during the century, in 1831-2, 1848-9, 1853-4, and in 1866. Mortality statistics are not available for the 1831-2 outbreak, but for the remaining three they are as follows:<sup>24</sup> 1848-9: 54,398 dead; 1853-4: 24,516 dead; 1866: 14,378 dead. Although cholera was prevalent throughout the world after 1866, no cases occurred in Great Britain until 1893, when the disease became widespread in Europe. Despite the precautions taken at the ports, some infected persons managed to gain entrance to the country, causing a large number of small outbreaks. In only five areas did the number of cases exceed ten and a total of no more than 287 persons contracted the disease, of whom 135 died. Clearly, a great advance had been made in the thirty years since the last epidemic had exacted its toll.

There was no let up in the torrent of legislation in the last quarter of the century, however. Local government was successively reorganized to create a system of borough and county councils, and of urban and rural districts, each with their own specific health functions. Port sanitary authorities were established, housing regulations passed, acts relating to the sale of food and drugs came on to the statute book which required the appointment of public analysts, the pollution of rivers with untreated sewage was forbidden, and cremation was allowed.<sup>25</sup>

The early years of the twentieth century were marked by a turn away from environmental considerations and the most notable feature of medical development was the extension of the personal health services, many of which were initially under the provenance of the medical officer of health.

The starting point of this development was the the passage of the Education (Administrative Provisions) Act in 1907. It was realized that in order to capitalize on the improvement in health brought about by good sanitation a range of medical and nursing services had to be provided. Under the new act, such services

were to be offered for school children through the formation of a new school medical service. The service was administered centrally by a Medical Department within the Board of Education, with Dr George Newman as its chief. The duty of the Department was to encourage local authorities to make arrangements for the medical inspection of all children at elementary schools. If any were found to be unfit, the responsibility for seeking treatment rested with the parents, but this was found to be such an unsatisfactory arrangement that in 1912 the Board of Education granted local authorities the means to provide treatment for some minor ailments. The principal gains from this provision were the establishment of local dental clinics and ophthalmic services.

Shortly afterwards, the local authorities were also given powers to make arrangements to provide care for expectant mothers and for children of preschool age.<sup>26</sup>

During the early years of this century several other important health acts passed on to the statute book. A Ministry of Health was formed in 1919<sup>27</sup> and the first minister was Dr Christopher Addison, one of the few medical practitioners to hold the post. The new ministry assumed responsibility for the prevention and cure of disease and it also took over the duties of the Local Government Board with respect to the administration of the Poor Law, but not the School Medical Service, which remained independent. Another significant change came about in 1930 when the duties of the Poor Law were transferred to local authorities.<sup>28</sup> Prior to this date, a good many services were duplicated by the Boards of Guardians who administered the Poor Law and the local authorities; services in connection with child and maternal welfare, the blind, the mentally defective, and the tuberculous for example. After 1930 these became the sole prerogative of the local authorities who, in addition, also received the custody of the Poor Law hospitals. Thus, for the first time, both preventive and curative functions were united under the medical officer of health. This move was welcomed enthusiastically by Dr George Newman, the Chief Medical Officer, who wrote :

The administration and fulfillment of the work transferred from the Poor Law authorities must now be absorbed into,

and assimilated with, the communal system of preventive medicine. The antithesis between preventive and curative medicine . . . is an entirely false antithesis. It is false administratively as it is false from the point of view of the science and art of Medicine itself. Such a division of Medicine can only be based upon a misunderstanding of the position.<sup>29</sup>

In 1936, the great Public Health Act of 1875 was finally superseded by a new act which covered a very extensive field.<sup>30</sup> By its terms the public health legislation which had been enacted since 1875 (and even some earlier acts) were consolidated,<sup>31</sup> and it was destined, according to Frazer,<sup>32</sup> to become the 'Bible' of all those who worked in the field.

The medical officer of health had come a long way in sixty years. From being an advisor on sanitation, he was now required to undertake duties in respect of infectious diseases, maternity and child welfare, food poisoning, housing, food and drugs, blind persons, venereal disease, and, of course, sanitation. He also administered the local authority hospitals, and in almost all cases, the school medical service; in some areas he was also responsible for the Port Health Service. He did not hold his position at the centre for long, however, for with the passing of the National Health Service Act in 1946, the preventive and curative functions of medicine were once more split apart. On the appointed day, 5 July 1948, when the provisions of the act came into force, the ownership of hospitals, with a few exceptions, was vested in the Minister of Health, to be run on his behalf by the new management structure.<sup>33</sup>

Since the advent of the National Health Service, more and more emphasis has been laid on cure than on prevention, and the spectacular results which have come from the application of modern technology to medicine have served to confirm to most members of the profession and the lay public that herein lies the way to health. There are some who try to direct the tide of opinion into other channels but, in general, during the last two decades, doctors have become less interested in the environmental factors in disease than they were fifty or a hundred years ago.<sup>34</sup> The next major reorganization of the health service, which is discussed in succeeding chapters, has weakened medical input into environmental health still further.

## 2 ENVIRONMENTAL HEALTH SERVICES AT LOCAL LEVEL

Prior to 1 April 1974, local environmental health services were the responsibility of the Public Health Department of the local authorities. Many of the functions of the department had more to do with hygiene than health; functions such as the inspection of meat, control of food, overcrowding, sanitation and so on, and they were carried out by officers who had no medical training. Since the medical officer of health was the head of the department, however, a medical input was assured (in principle at least). With the twin reorganization of local government and the National Health Service (NHS), which came into effect on All Fools' Day 1974, the position was radically changed.<sup>1</sup>

Local government in England now comes in three varieties. Firstly, there is the Greater London Council, subdivided into 32 boroughs, next are the 6 metropolitan counties subdivided into 36 metropolitan districts, and lastly come the 39 non-metropolitan counties, comprising a total of 296 non-metropolitan districts. There are 8 Welsh counties and 12 Scottish regions, which subdivide into 37 and 53 districts respectively.

The new local authorities have preserved the duties which Parliament heaped upon their predecessors and the functions of the different tiers of local government are shown in Tables 1 and 2. From the tables it will be seen that the great majority of environmental health functions are exercised at district level.

The most significant change to come from the reorganization of the health service (so far as environmental health is concerned) has been that all medical personnel who formerly worked for the local authorities were absorbed into the NHS.<sup>2</sup> The political divisions of the NHS are as follows. In England 15 regional health authorities were set up, further divided into 90

Notes to this chapter begin on page 57.

TABLE 1. *Function of local authorities in England and Wales relating to environmental health*

<i>Function</i>	<i>MC</i>	<i>MD</i>	<i>NMC</i>	<i>NMD</i>	<i>GLC</i>	<i>LB</i>	<i>WC</i>	<i>WD</i>
Building regulations		x		x		x		x
Clean air		x		x		x		x
Communicable disease		x		x		x		x
Composition of food and drugs	x		x			x	x	*
Food safety and hygiene		x		x		x		x
Home safety		x		x		x		x
Housing		x		x	x	x		x
Litter control	x	x	x	x	x	x	x	x
Refuse collection		x		x		x		x
Refuse disposal	x		x		x			x
Rodent control		x		x		x		x
Sewage collection		x		x		x		x
Street cleansing		x		x		x		x
Road safety	x		x		x		x	

MC = Metropolitan county; MD = Metropolitan district; NMC = Non-metropolitan county; NMD = Non-metropolitan district; GLC = Greater London Council; LB = London borough; WC = Welsh county; WD = Welsh district.

\* May exceptionally exercise these functions.

TABLE 2. *Functions of local authorities in Scotland relating to environmental health*

	<i>Regions</i>	<i>Districts</i>
Building control	*	x
Clean air		x
Communicable diseases		x
Composition of food and drugs	x	
Food safety and hygiene		x
Home safety		x
Housing		x
Litter control	x	x
Refuse collection		x
Refuse disposal		x
Sewage collection	x	
Street cleansing		x
Road safety	x	

\* In Highlands, South West, and Border regions.

area health authorities. The areas are themselves constituted of one or more districts, each with a population of about 250,000. In Wales there are no regions, but 8 areas and 17 districts. Scotland has neither regions nor areas, instead there are 15 health boards, which together have a total of 34 districts.

In England and Wales the boundaries of the AHAs are coterminous with those of the local government units which have responsibility for the social services. These correspond to the London boroughs, non-metropolitan and Welsh counties, and metropolitan districts (Figure 1). The Scottish Health Boards match the regional and island authorities, except in the case of Strathclyde, the most populous of the regions, which is served by four health boards. It will be apparent from this account that in many instances there is an overlap between local authority and NHS districts (see Table 3).

The Public Health Department vanished on 1 April 1974, along with the MOH, its place being taken by the Environmental Department. Although the name is changed, the new depart-

TABLE 3. *Subdivisions of area health authorities and local authority units to which they correspond*

<i>Local authority unit</i>	<i>No.</i>	<i>No. of districts</i>	<i>Areas</i>	<i>Districts</i>	<i>Number of NHS: Single district areas</i>
<b>England and Wales</b>					
London boroughs	32	*	16†	36	4
Non-metropolitan counties	39	296	39	119	5
Metropolitan districts	36	36	35‡	50	25
Welsh counties	8	37	8	17	3
<b>Scotland</b>					
Regions	12§	53	Health boards 15	34	5

\* The London boroughs are not further subdivided.

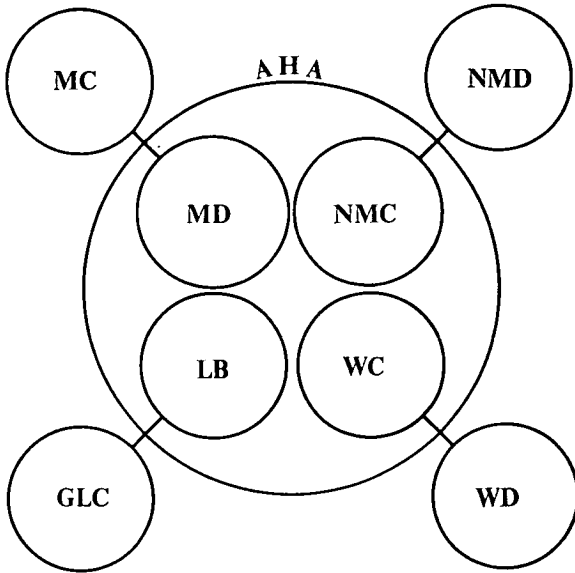
† NHS areas are in some cases coterminous with more than one London borough.

‡ Knowsley and St Helens form one AHA.

§ This includes Orkney, Shetland, and the Western Isles which are virtually all-purpose authorities by virtue of their remoteness and separate identity.

|| The health boards are coterminous with the regions and islands, except in the case of Strathclyde which is divided into four health board areas.





**Figure 1.** Diagram to show correspondence between area health authority and local government boundaries.

AHA = Area health authority; GLC = Greater London Council; LB = London borough; MC = metropolitan county; MD = metropolitan district; NMC = non-metropolitan county; NMD = Non-metropolitan district; WC = Welsh county; WD = Welsh district.

ments have the same responsibilities as the old, relating principally to food and food hygiene, health and safety in employment, clean air, housing, noise, waste collection and disposal and, in some cases, port health inspection.<sup>3</sup> The scope of the local authorities' activities are likely to be greatly enlarged when, and if, all the provisions of the Health and Safety at Work, etc., Act, 1974, and the Control of Pollution Act, 1974, are enforced.<sup>4</sup>

All the duties of the Environmental Department however, relate to hygiene and they are carried out by officers of the local authority department under the direction of the Chief Environmental Health Officer (CEHO) who is the Proper Officer in respect of these functions. (The environmental officers were formerly known as public health inspectors, but they too have undergone a nominal change.) The environmental health officers

(EHOs) are trained in accordance with the regulations of their professional body, the Environmental Health Officers Association. Students follow one of two routes towards membership of the association. They may either attend day release or sandwich courses at polytechnics and colleges approved for the purpose, in which case they sit for the Diploma in Environmental Health, or they may read for an approved degree. There are at present four such degree courses, one at the University of Aston in Birmingham, one at the University of Salford, one at the Thames Polytechnic, and one at Leeds Polytechnic. Those who receive their degree are exempt from the Diploma examination. All those taking these courses are appointed as students by a local authority and so are in the happy position of being assured a job at the end of their training. Since the EHO is concerned with environmental hygiene, it is perfectly reasonable that the medical content of his training programme is relatively slight. The local authorities, however, still retain their statutory duties in respect of communicable disease and food poisoning, and for these purposes they are required under the Local Government Act, 1972, to appoint a Proper Officer, who must be medically qualified.

During the prolonged discussions which preceded reorganization, it was recognized that the local authorities would require medical advice on matters unconnected with food poisoning and infectious diseases and for this purpose they were recommended to appoint a medical adviser on environmental health. This adviser was, like the Proper Officer, to be in the employ of the NHS and not the local authority, since, as the Hunter Report put it,<sup>5</sup> he

will be in a position to draw fully on the wide knowledge and expertise within the NHS. We anticipate a growing need for specialist advice as the health hazards created by modern industrial and urbanised society continue to multiply and increase in complexity. For that reason alone, it is most important that medical advisers to local government should be within the framework of the NHS and thus have ready access to expert advice on specialist matters, some of which will be available at regional or national level.

Since the medical adviser would be within the NHS, clearly, suitable consultative machinery would need to be set up, and

collaboration became the cry. The Working Party which was appointed to consider this point wrote that

there is a vital need for the closest co-operation in many fields of environmental health, since health is essentially a single problem for the community as a whole.<sup>6</sup>

This sentiment was echoed in Scotland in these words from the Joint Working Party on the Integration of Medical Work :

Close and continuing co-operation will be required with the regional and district authorities and the agencies with pollution control responsibilities.<sup>7</sup>

Accordingly it was proposed that Joint Consultative Committees be set up with membership drawn from the NHS and local authorities, to cover environmental health and other matters of common interest.<sup>8</sup>

Since the local authorities in England and Wales were required to appoint a Proper Officer for communicable disease control (known in Scotland as the 'designated medical officer') it was suggested that this Proper Officer should also be the medical adviser on environmental health. In this joint capacity he would be known as the Medical Officer for Environmental Health (MOEH).<sup>9</sup>

In most local authority areas, the MOEH is a district community physician who thus acts in a dual role. He undertakes his environmental health duties for the local authority in addition to those which he performs for the NHS. The NHS, however, does employ some full-time specialists in environmental health who take the title of Specialist in Community Medicine (Environmental Health) (SCM[EH]). This post exists in all area health authorities which are coterminous with metropolitan districts, and in all single district area health authorities coterminous with non-metropolitan or Welsh counties, or the London boroughs.<sup>10</sup> There is no such regular arrangement in Scotland, but some of the larger health boards have decided to appoint specialists in environmental health.

The SCM(EH) acts as the Medical Officer for Environmental Health for the local authority to which his area corresponds, but it is important to realize that the advice which he is called upon to give, will vary considerably from area to area. It will clearly differ according as the area for which he acts is pre-

dominantly rural or urban, polluted or non-polluted, densely or lightly populated, and so on. He will be called upon to advise on a wider range of problems if he works for a metropolitan district rather than a non-metropolitan county, since the responsibilities of the first are much greater than of the second, as reference to Table 1 will show.

Similar considerations apply to the role of the district community physician, but there is an added complication in his case, since he often finds himself acting as the MOEH for more than one local authority, there being more local authorities than NHS districts.

The MOEH is not able to spend more than a small part of his working week on environmental health matters, even if he so wished and, indeed in some districts there may be no need for him so to do. To try to establish how the time which was spent on environmental health was divided, and what kind of problems were submitted to him, a questionnaire was circulated to 168 MOEHs, of whom 133 replied (79.2 per cent). It was not possible to assess with any accuracy how much of the working week was given over to environmental health, but since administrative duties took the lion's share of their time, it was certainly not much, for of the total sample, more than half estimated that administration occupied 40 per cent or more of their time (see Table 4).

TABLE 4. *Proportion of working time spent by MOEHs on administration*

	<i>Percentage of working time</i>		
	<i>&gt; 40</i>	<i>&gt; 60</i>	<i>n</i>
Total sample	58.6	35.2	133
DCPs	66.3	45.3	100
SCMs (EH)	36.4	6.1	33

It is noticeable that the SCMs (EH) are required to spend less time on administration than their DCP colleagues, although for almost a third it occupies 40 per cent or more of their week.

The time which is given over to environmental health appeared to be more or less equally divided between communicable disease, housing, clinical work or inquiries, and an assortment of other environmental problems. So far as the queries

which land on the desk of the MOEH are concerned, they relate to communicable disease, housing, and other issues in the ratio of about 3 : 2 : 1. Most of these come from the local authority, but a substantial number originate from other DCPs and from members of the general public.

From this survey it appears that the MOEH is acting in much the same way as the MOH who preceded him, with communicable disease and housing problems taking up a great deal of the time which he can give to environmental health. Duties in relation to housing, including those concerned with the administration of section 47 of the National Assistance Act, 1948, were often considered to be particularly time-consuming and onerous and not always in need of a medical opinion in the first instance, and most MOEHs would apparently be glad to be released from them if a way could be found to do so.<sup>12</sup>

Other environmental problems with which the MOEH has to deal were identified in order of importance as air pollution, water pollution, noise, and disposal of toxic wastes.

The pattern of work which the MOEHs describe will of necessity change as fashions in environmental health change. We no longer consider that communicable disease poses a major threat to health, although much alarm and confusion can still be generated by the appearance of exotica such as Lassa fever or Marburg disease. Instead pollution is *à la mode* and the blame for alterations in health is being laid on the presence of toxic substances in the environment, the detection of many of which has only been possible since the development of highly sophisticated and sensitive analytical techniques.

Local authorities are thus likely to look increasingly for guidance on the medical implications of pollution and many have already initiated monitoring programmes in their areas. The present generation of MOEHs, who have in almost all cases worked whole time in public health prior to undertaking their new responsibilities (96.2 per cent of our survey), could not reasonably be expected to have the necessary expertise to proffer authoritative advice on these matters. They ought, however, to be able to augment their knowledge by liaising with those who do have expert knowledge on toxicology, but few have found the time or inclination to do so. For example, less than a fifth of those in the survey had any regular contact with the

Employment Medical Advisory Service (EMAS) or with industrial medical officers, less than a tenth with the Factory Inspectorate.

Even now, many local authorities no longer regard their MOEH as their principal source of guidance and wisdom in matters to do with environmental pollution, whatever its form. This trend is encouraged by the new management arrangements in the environmental departments of the local authorities. The CEHO is not bound to defer to the MOEH in these matters, and may seek advice from which ever quarter he considers most suitable. In Birmingham the environmental department has established a Scientific Advisory Committee on environmental pollution, a move which has received much attention.

The scientific and medical members of this committee are drawn from the two universities in the City, the polytechnic, and from local hospitals. The chairman is the chairman of the City's Environmental Committee *ex officio* and the secretariat is provided by the Environmental Department. A number of smaller specialist subject groups have been formed, for example there is a heavy metal group, a medical and biological group and an acoustic group, and these meet irregularly to discuss matters of interest to the City. The full committee meets for the purposes of considering over-all policy and of proposing and developing research projects, a number of which have already been put into effect.

Other local authorities have now established similar advisory bodies and whilst this initiative is commendable, there is a real danger that medical input may be further diminished if the make-up of advisory committees is not properly balanced.

### 3 ENVIRONMENTAL HEALTH SERVICES AT NATIONAL LEVEL

National responsibility for environmental health is fragmented between many of the departments of state and there is often an overlap of interest between them. This is especially true for the hygiene and monitoring services.<sup>1</sup>

It is convenient to consider central responsibilities under two headings, those of the departments which have a direct medical input and those which do not.

#### *Departments with a medical input*

The Department of Health and Social Security (DHSS) provides the greatest medical input through a number of its divisions. The prime responsibilities of the DHSS in the field of environmental health relate to the control of infectious diseases, including those imported from overseas and the zoonoses, medicines control, and advising the Department of the Environment (DOE) on medical aspects of environmental hygiene.

In the control of communicable disease the DHSS works closely with the Public Health Laboratory Service (PHLS), and, for the purposes of the control of the zoonoses, with the Ministry of Agriculture, Fisheries, and Food (MAFF). The MAFF looks to the DHSS for all its medical advice and conversely, the DHSS relies on MAFF for help on veterinary matters. The DHSS has two standing committees on communicable disease, an epidemiological committee, which meets monthly and which draws members from the PHLS, Office of Population Censuses and Surveys and, when one of the zoonoses is being discussed, from the veterinary division of MAFF; the other is a Zoonoses Group which meets periodically to discuss these diseases and comprises

Notes for this chapter begin on page 58.

personnel from DHSS, PHLS, and MAFF. *Ad hoc* committees and working parties are formed as and when required, either by the DHSS alone, or in conjunction with other departments of state. Recent examples are the committee to investigate the smallpox outbreak in London in 1973 and the working party which examined the laboratory use of dangerous pathogens.<sup>2</sup>

The DHSS provides guidance on the control of infectious diseases to the area health authorities, through personal contacts and by issuing circulars and memoranda,<sup>3</sup> copies of which also go to the CEHO. There is a feedback from local level in the form of statutory notification of certain of the infectious diseases and through the weekly *Communicable Disease Reports* of the PHLS (copies of which are also distributed at local level).

Another important function of the DHSS in respect of environmental health is the control of the risks which may arise from medical treatment or investigation. Drugs present the main therapeutic hazard to patients and since the passage of the Medicines Act, 1968, all new products for human use must be licensed by the DHSS.<sup>4</sup> Adverse reactions to drugs are monitored by a committee which has been established by the Medicines Commission, in accordance with section 4 of the Medicines Act. This committee has two sources of information, the practitioners who return the special adverse reaction cards supplied to them for the purpose, and the registries of adverse reactions which have been set up in other countries. Adverse reactions are considerably under-reported, however, and at present there is no local agency whose duty it is to monitor them in the community, and there is a great need to put the monitoring of adverse reactions to drugs on a proper epidemiological basis.<sup>5</sup>

Medical investigations, of which radiography is potentially the most hazardous, may also expose the patient to some risk to health. The DHSS issues guidelines for the protection of patients undergoing radiographic and radio-isotopic investigation,<sup>6</sup> but their implementation is the responsibility of individual clinicians, so that it is not clear to what extent they are complied with. Again, there is no local agency with a duty to monitor the risks of medical investigation.

The DHSS has no direct responsibility for occupational health, except as an employer and as a paymaster for diagnostic services which may be required as, for example, in the surveillance of



bladder cancer. The Department is, however, responsible for the Industrial Injuries Advisory Council and, in accordance with section 141 of the Social Security Act of 1975, the Secretary of State may ask the Council to advise whether certain industrial diseases should be prescribed under that Act.<sup>7</sup>

Most matters relating to occupational health are the responsibility of the Department of Employment (DE) whose medical input is provided by EMAS, which is part of the Health and Safety Executive (HSE). There is clearly some overlap of interest between the DHSS and EMAS since toxic chemicals used in industry have a habit of becoming disseminated into the general environment. The convention is that questions relating to toxicity of materials within the factory walls are answered by the HSE and those relating to toxicity without the factory, by the DHSS. There is a consultative mechanism whereby the DHSS and the HSE ensure that they do not duplicate research work more than is necessary.

The Health and Safety at Work, etc., Act, 1974, has provided a comprehensive and integrated system of law to deal with virtually all people at work and the legislation is administered by the Health and Safety Executive. Existing duties under previous acts remain in force, however, so that departments other than the Department of Employment have a prime responsibility for some aspects of occupational health: the Ministry of Agriculture, Fisheries, and Food for the safety of agricultural workers, the Department of Energy for the mines, the Department of Transport for nationalized transport industries, the Department of Trade for the safety of merchant mariners.

Occupational health is discussed in more detail in the next chapter, but mention should be made of the Ministry of Defence (MOD), which has the duty to provide health services for the armed forces at home and abroad. The three armed services make separate medical arrangements for their personnel, including the provision of hospitals, two for the navy, two for the army, and five for the air force.

The Home Office is the last of the departments with its own medical service, the Prison Medical Service. This could perhaps be looked upon as an occupational health service for a rather specialized occupational group. In addition, however, the Home

Office is responsible for consumer safety, safety in the home, and for the security of dangerous substances (including control over explosives). It is for this reason that regulations governing, for example, the amount of heavy metals in paint on childrens' toys and on pencils, emanate from the Home Office.<sup>8</sup> For the purposes of framing these regulations, medical advice is provided by the Chief Medical Officer (CMO), who is also CMO for the Home Office.

### *Departments with no medical input*

The prime duty of these departments is to safeguard the physical environment, which they do in the main by monitoring all forms of pollution. The MAFF has, in addition, responsibilities for food safety and hygiene, to which reference is given again later.

TABLE 5. *Pollution control responsibilities of government departments, staff in 1972*

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#### AIR POLLUTION

DOE. HM Alkali and Clean Air Inspectorate. Staff 35

Air pollution from registered works.\* Advice to local authorities on processes and operations outside the scope of the Alkali Acts.

*England and Wales are divided into 15 districts, each with a district inspector. Additionally, there are 16 inspectors allocated to 13 of the 15 districts.*

SDD. HM Industrial Pollution Inspectorate for Scotland. Staff 7

For air pollution has the same responsibilities as the Alkali Inspectorate, but also has some additional responsibilities as described below.

*Scotland is divided into three units, each with a senior inspector and an inspector.*

DOE. Directorate of Vehicle Engineering and Inspection (also operates in Scotland). Staff 5

Air pollution (smoke) from road vehicles.

*There are five HQ staff. The remaining staff are concerned with all aspects of vehicle testing and safety. Smoke control is only a minor part of their total duties.*

DI. Warren Spring Laboratory (Air Pollution Division).

Co-ordinating centre for the National Survey of Air Pollution. Surveys of

\* Includes radioactive emissions from nuclear installations.

## TABLE 5 continued

**Air Pollution, continued**

pollution from traffic, aircraft, etc. Long-range trans-frontier pollution. Odours. Development of measuring techniques.

*Work relates more to monitoring and research rather than the direct control of pollution.*

**FRESHWATER POLLUTION**

DOE, SDD. Directorate General Watering Engineering (DGWE); Engineering Division. Staff (DOE) 70; (SDD) 16

Overseeing of sewage disposal schemes. Technical advice to local and water authorities.

*The staff figure is the total professional staff complement of the Division. Pollution control is only part of their duties.*

SDD. HM Industrial Pollution Inspectorate for Scotland.

Advice on the control of water pollution.

*See under air pollution.*

**POLLUTION FROM AGRICULTURAL CHEMICALS**

MAFF, DAFS. Safety, Pesticides and Infestation Divisions.

Control of pesticides and advice on disposal of farm wastes.

*Technical advice is obtained from the MAFF Plant Pathology Laboratory and Pest Infestation Control Laboratory, the DAFS Agricultural Scientific Services and the MAFF/DAFS Agricultural Development and Advisory Service (ADAS).*

**MARINE POLLUTION**

MAFF, DAFS. Fisheries Division.

Discharges at sea outside territorial waters.

*Technical advice is obtained from the MAFF Fisheries Laboratories at Lowestoft and Burnham and the MAFF Marine Laboratory at Torry. No technical staff are engaged on this full-time. These laboratories also monitor pollution of the sea (both chemical and biological monitoring).*

DOT. Marine Division.

Oil pollution at sea.

*Control is the responsibility of the Marine Survey Service, the staff of which is mainly concerned with other duties. The Warren Spring Laboratory is engaged on research on methods of dealing with oil pollution and gives technical advice.*

TABLE 5 continued

**Marine Pollution, continued**

D. of Energy. Petroleum Production Inspectorate. Staff 3  
Pollution from drilling operations.

*The number of staff will expand to meet the demands of oil exploration in the North Sea.*

**RADIOACTIVITY\***

DOE. DGWE Radiochemical Division. Staff 5  
Advice on the Radioactive Substances Act 1960, monitoring the effectiveness of the controls.

*Included in total complement figure for DGWE given under water pollution.*

MAFF. Fisheries Division (Fisheries Radiobiological Laboratory). Staff 33

Monitoring discharges of radioactive effluent into inland and coastal waters. *All staff have some pollution control responsibilities, but this varies considerably.*

D. of Energy. Nuclear Installations Inspectorate. Staff 67  
Safety of nuclear power plants, fuel processing plant, etc.

SDD. HM Industrial Pollution Inspectorate for Scotland.  
Control of pollution arising from the use of radioactive substances (with assistance from Fisheries Radiobiological Laboratory).  
*See under air pollution for numbers and organization.*

**TOXIC WASTE DISPOSAL**

DOE. DGWE Toxic Wastes Division. Staff 6  
Advice on methods of disposal of toxic wastes, monitoring and collating information.

*Included in total complement figure for DGWE given under water pollution.*

SDD. HM Industrial Pollution Inspectorate for Scotland.  
Advice on the disposal of toxic wastes.  
*See under air pollution for numbers and organization.*

**REFUSE DISPOSAL**

DOE, SDD. DGWE Public Cleansing Division; Engineering Division. Staff 5

Advice on methods of refuse disposal, refuse collection and street cleaning. *Included in total complement figure for DGWE given under water pollution. (SDD) See under water pollution for numbers.*

TABLE 5 continued

## NOISE

DOE. Directorate of Vehicle Engineering and Inspection (operating also in Scotland). Staff 4

Noise from road vehicles.

*There are four HQ staff. The remaining staff are concerned with vehicle testing. Noise is only a minor part of their total duties.*

DOT. Civil Aviation Division.

Aircraft noise.

*DOT concerned with policy on aircraft noise. Technical work carried out by Civil Aviation Authority.*

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\* The National Radiological Protection Board provides information, advice and services in connection with radiological protection.

DAFS: Department of Agriculture and Fisheries for Scotland

MAFF: Ministry of Agriculture, Fisheries and Food

DI: Department of Industry

SDD: Scottish Development

DOE: Department of the Environment

Department

DOT: Department of Trade

The monitoring and control of pollution rests in many hands, as may be seen from Table 5, which is taken from the fourth Report of the Royal Commission on Environmental Pollution.<sup>9</sup> The actual work of monitoring may be carried out by the departments themselves, or by various institutes which they may sponsor for the purpose. In 1974 there were about a hundred monitoring programmes known to the DOE, a number which is increasing rapidly.<sup>19</sup>

The chief amongst the departments which are responsible for the physical environment is the DOE. It is responsible for policies relating to towns and country planning, noise, clean air, and the disposal of wastes, which are implemented at local level through the local authorities. The Secretary of State is also responsible for promoting a national policy for water, upon which he is advised by the National Water Council, to which he appoints members (as does the Minister of Agriculture, Fisheries, and Food). He has also to approve the programme of the regional water authorities, which are responsible for all aspects of the water cycle within their own domains.

In Wales, the Welsh Office is concerned with these functions, whilst in Scotland, they are within the remit of the Scottish

Development Department. The pollution interests of the country as a whole, however, are co-ordinated by the Central Unit on Environmental Pollution (CUEP), for which the DOE assumed responsibility in 1970, the same year as the Standing Royal Commission on Environmental Pollution was established. In addition, the CUEP is the focal point of the European Environmental Action Programme, set up following the United Nations Conference on the Human Environment, which was held in Stockholm in 1972.<sup>11</sup> As part of its programme, the CUEP is issuing a series of papers on various aspects of pollution, fourteen of which have appeared to date.<sup>12</sup>

Other departments with special responsibilities for the physical environment and pollution are the Department of Transport (DTp), the Department of Energy (DEn), the Department of Trade and Industry (DTI), and the Department of Education and Science (DES).

The Department of Transport is responsible for the transport industries and for highways and motorways and for road safety, having taken these duties over from the DOE in 1976.

The Department of Energy is responsible for atomic energy policy, and exercises this duty *inter alia* through the financing of the Atomic Energy Authority, through its relationship with British Nuclear Fuels Ltd and the Radio Chemical Centre, and through the Nuclear Installations Inspectorate, which is now part of HSE. The Department also makes regulations under the Health and Safety at Work, etc., Act, which are exclusively concerned with coal mining, and it is the investigating authority for accidents in the gas and electricity industries.

The DTI is concerned with the regulations applicable to the use of ships and aircraft and is responsible for marine safety and marine pollution.

The DES exercises its interest principally through the financing of the National Environmental Research Council (NERC) which has the duty to support, plan and execute research into the understanding of the influences of the environment on man (and vice-versa). The responsibilities of the DES also extend to ensuring safety in school laboratories, a matter which is presently attracting some concern.<sup>13</sup> The Schools Health Service, formerly part of the DES, is now within the NHS and administered by the DHSS.

The last of the departments to be considered here is the MAFF, which has duties corresponding to each of its three divisions. Thus it has responsibilities in connection with food composition and hygiene, pest control and the zoonoses, and with monitoring pollution at sea. Many of these duties are exercised in conjunction with the DHSS. For example, both are involved in the administration of the Food and Drugs Act, 1955, and amendments to this Act, or new regulations are issued jointly.<sup>14</sup>

In 1971 the MAFF set up a Working Party on the Monitoring of Foodstuffs for Heavy Metals after some cans of tuna fish in the United States were reported to be heavily contaminated with mercury. The Working Party has so far issued five reports<sup>15</sup> and their results are scrutinized by two advisory bodies, the Food Additives and Contaminants Committee, and the Toxicity Subcommittee on Medical Aspects of Chemicals in Food and the Environment, both of which tender advice to ministers. Following the publication of the fifth report of the Working Party, the Food Additives and Contaminants Committee has recommended that changes be made to the Lead in Food Regulations, to reduce the maximum allowable content of lead in most foods from 2 to 1 ppm.<sup>16</sup> The MAFF is also concerned with levels of heavy metals in sewage sludge, which are now used extensively as cheap sources of nitrogen and phosphorus. There is a potential danger that some of the heavy metals in the sludge may be taken up by crops growing in soils on which they are used and enter the food chain, and so the MAFF has issued guidelines for maximum permissible levels.<sup>17</sup>

The principal parts of the work of the veterinary division of the MAFF, as they relate to human health, are connected with animal disease and pest control.<sup>18</sup> The most significant recent piece of legislation is the Zoonoses Order, 1975, which requires cases of salmonella or brucella infections to be reported to the MAFF. The local officers of the MAFF, members of the Agricultural Development and Advisory Service (ADAS), report cases to officers of the area health authorities and the local authorities and will consult with them if the need arises.

In Scotland, the Department of Agriculture and Fisheries for Scotland (DAFS) subsumes most of the functions undertaken by MAFF in England and Wales, others, relating to food, are in the

province of the Scottish Office and the Scottish Home and Health Departments.

*Research laboratories and units*

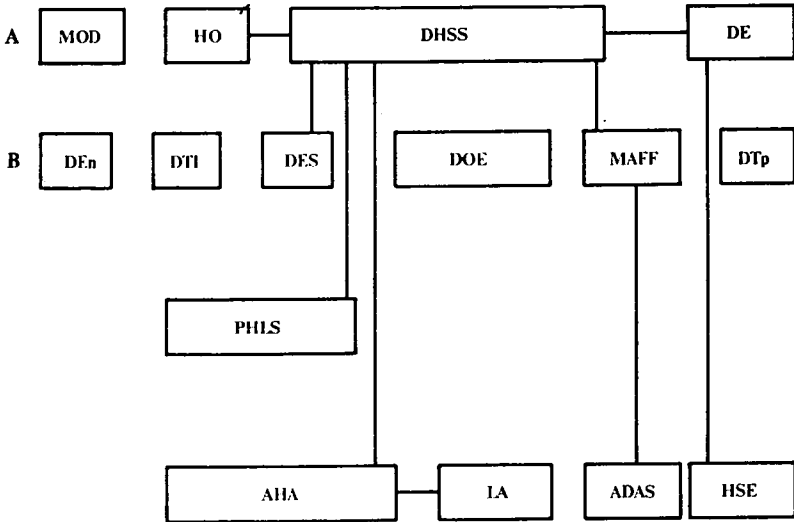
Each of the departments of state mentioned here, maintains specialized units and laboratories, which undertake and collate

TABLE 6. *Some laboratories and units concerned with environmental health research*

<i>Government department or other sponsor</i>	<i>Laboratory or unit</i>
Department of Agriculture and Fisheries for Scotland	Freshwater Fisheries Laboratory
Department of Energy	Atomic Energy Research Establishment
Department of the Environment	Building Research Establishment Central Unit on Environmental Pollution
Department of Transport	Transport and Road Research Laboratory
Department of Health and Social Security	National Radiological Protection Board
Department of Industry	Laboratory of the Government Chemist National Physical Laboratory Pesticide Residue Analysis Information Service Warren Spring Laboratory
Ministry of Agriculture, Fisheries, and Food	Fisheries Laboratories Fisheries Radiobiological Laboratory Pest Infestation Control Laboratory Torry Research Station
National Environmental Research Council	Freshwater Biological Association Institute for Marine Environmental Research Institute of Terrestrial Ecology Laboratory of the Marine Biological Association of the United Kingdom
Medical Research Council	Environmental Hazards Unit Environmental Physiology Unit Unit for the Study of Environmental Factors in Mental and Physical Illness Industrial Injuries and Burns Unit Pneumoconiosis Unit Toxicology Unit

It should be noted that this list is by no means comprehensive.





**Figure 2.** Diagram to show the relationships between departments with responsibilities for environmental health services.

A = central departments with medical input; B = central departments with no medical input; C = local services. Other abbreviations as in the text.

research into environmental health and hygiene. Some of the more important of these are shown in Table 6.

*An illustration of complexity*

Even this brief survey shows how divided the responsibilities for national environmental health services are. The relationship between the departments of state and their local outlets is shown diagrammatically in Figure 2.

To understand the full complexity of the present arrangements, consider the control of pesticides. In England, no less than nine departments are involved to some degree, in Scotland, three, whilst the Welsh Office protects some of the Welsh interests. A simplified outline of the responsibilities each has is shown in Table 7. With so many thumbs in the pie, it is not difficult to see that the right boy may not always get the plum.

TABLE 7. *Responsibilities for the use and control of pesticides*

<i>Department</i>	<i>Main responsibilities</i>
MAFF	Safe use in agriculture, horticulture, forestry and in home gardens.
DE	Safety of workers manufacturing pesticides. EMAS advice on hazards to health of workers.
MOD	Use of pesticides by armed forces.
DOE	Use of pesticides by local authorities, water authorities and British Rail.
DHSS	Advice to other departments and the general public on potential hazards of use.
HO	Sale and use of pesticides.
DT	Safe transport of pesticides by road, sea and air. Aerial spraying of pesticides.
DI	Laboratory of Government Chemist provides analytical service for detecting residue in biological and other materials.
DES	Advisory Committee on Pesticides and Toxic Chemicals, and support of research through the research councils.
DAFS, SDD, SHHD, and Welsh Office	Some duties carried out by MAFF, DOE, DHSS, DI, and HO.

## 4 OCCUPATIONAL HEALTH SERVICES

The origins of present-day occupational health services can be traced back to an outbreak of fever which affected some of the children working in a cotton mill at Radcliffe near Manchester in 1784. At the invitation of the local justices of the peace, Dr Thomas Percival and a number of his colleagues, investigated the outbreak. Their report contained a series of recommendations, the last of which contained a suggestion for limiting the hours which children under 14 should be permitted to work in the mills.<sup>1</sup> The magistrates of the county were so impressed by the report that they decided that they would no longer allow apprentices to become indentured to owners who required them to work at night, or for more than ten hours during the day.

Percival continued his investigation of the working conditions in Manchester and its surroundings, and was instrumental in forming the Manchester Board of Health in 1796. At the first meeting of the Board, Percival submitted five resolutions for consideration, the fifth of which read as follows :

From the excellent regulations which subsist in several cotton factories, it appears that many of these evils may, in a considerable degree, be obviated; we are therefore warranted by experience and are assured we shall have the support of the liberal proprietors of these factories, in proposing an application for Parliamentary aid (if other methods appear not likely to effect the purpose), to establish a general system of laws for the wise, humane, and equal government of all such works.<sup>2</sup>

The magistrates in Manchester promptly acted on this recommendation and took steps to prevent the misuse of local appren-

Notes for this chapter begin on page 60.

tices. They were supported by magistrates in some other large industrial areas and thus grew a demand for national action. Stimulated by this concern, Sir Robert Peel passed the Health and Morals of Apprentices Act through Parliament in 1802 with almost no opposition, and although it proved ineffective in remedying the poor conditions under which the apprentices worked, established the important principle that the legislature had a right to interfere in the regulation and conditions of employment in industry.<sup>3</sup>

This 1802 act was not properly a Factory Act, but rather an extension of the Elizabethan Poor Law relating to parish apprentices. The first Factory Act proper was passed in 1819 at the prompting of Robert Owen, following which, children under 9 years of age were not to work in the mills for more than twelve hours a day, exclusive of meal breaks. An amending act was passed in 1825, under section 9 of which employers were compelled to keep a book wherein they entered the name of any child considered to be under age. The child's parents were then required to sign a statement that he had, in fact, reached the age of 9, thereby exempting the employer from prosecution if subsequently this was found to be *untrue*. The system was widely abused and an attempt to repair its defects was made in the Factory Act of 1833, which required the Government to appoint inspectors who were to ensure that the provisions of the Act were being met.<sup>5</sup> The new act forbade the employment of children in specified mills unless they had a certificate from a physician or surgeon to say that the child was of the 'ordinary strength and appearance' of a child of 9.

At the time birth certificates did not exist and the certifying surgeons found it notoriously difficult to judge the age of a child on physical appearance alone, so that this system worked scarcely better than that which it replaced. In 1836 the Registration of Births Act was introduced but made little immediate impact, since the children with the new certificates had nine years to wait before they became eligible for employment. In the absence of a formal system of medical registration, certificates were easily obtained from those whose connection with medicine was tenuous to say the least. The inspectors appointed under the 1833 act met this abuse by accepting certificates only from surgeons upon whom they could rely and with the passing

of the 1844 Factories Act, they were given powers to appoint their own surgeons for this purpose.

The early Factory Acts related solely to conditions in the mills, but gradually the acts were extended to include other industries, culminating in the comprehensive legislation of 1867.<sup>7</sup> As the result of the extension of the provisions of the Factories Acts, a large number of employers were faced with the need to pay doctors for certificates and much cavil ensued since the employers thought that the birth certificate would serve equally as well, and also save them money.<sup>8</sup>

A short-lived association of certifying surgeons was formed in 1868 with the objectives of improving their professional standing, and to encourage the observation and collection of facts tending to promote the advance of sanitary science and the relief and prevention of disease incident to the various processes of manufacture.<sup>9</sup> There was certainly much to be done towards the prevention of industrial disease, for the problems in the early 1860s were extremely serious.<sup>10</sup> In many industries the state of health of the workers was appalling. Amongst girls working with arsenical pigments in one small factory, 'suffering was almost universal'; few grinders escaped without 'suffering more or less from the occupation'; china-scourers all became 'sooner or later "asthmatical"', and so did cotton carders and flax workers, whilst only the colliers of Northumberland and Durham were the exception to the rule that miners, as a class, broke down 'prematurely with lung disease'. Overcrowding, under-ventilation, and inadequate sanitation were endemic, and death-rates in the industrial areas were as much as eight times as high as in country districts.<sup>11</sup>

The Factories Act of 1864 had made some attempt at bettering conditions by stating (in section 2) that all factories covered by the Act 'shall be kept in a cleanly state and shall be ventilated in such a manner as to render harmless so far as is practicable any gases, dust or other impurities generated in the process of manufacture that may be injurious to health'. The 1867 Act extended these requirements to all factory premises and also brought them under the control of the Factory Inspectorate.

The last quarter of the nineteenth century saw the introduction of a number of important measures, of which the two most outstanding were the compulsory notification of lead, arsenic,

and phosphorous poisoning and anthrax under the 1895 Factories Act, and the appointment of Thomas Legge as the first Medical Inspector of Factories in 1898.

During the present century, health and safety regulations have continued to proliferate and have evolved down one of three lines. The first of these has continued the tradition of the Victorian Factories Acts, and has been designed to protect people at their place of work. A consolidating act of 1901 drew together the five statutes passed since 1878 and this was followed by a cascade of regulations. The Factories Acts of 1937, 1948, and 1959 introduced few major changes to existing law and were repealed in due course by the consolidating Act of 1961. This act provided statutory provisions for the health and safety of about eight and a half million persons employed in factories, shipyards, docks, and construction sites. Those working in shops, offices, and railway premises were given protection under the Offices, Shops, and Railway Premises Act of 1963, whilst three other major acts accounted for the remainder of the workforce. The Mines and Quarries Act of 1954 took account of the large workforce employed in mining and quarrying, and those who worked on the land were covered by the Agriculture (Poisonous Substances) Act, 1952, and the Agriculture (Safety, Health, and Welfare Provisions) Act, 1956. This complex system of legislation was administered by four different departments of state and their various inspectorates.<sup>12</sup>

The second category of acts provided for the control of special industrial activities and substances, examples of which are the Explosives Act of 1923 (an amendment of the 1875 act of the same title), which the Home Office enforced through an Explosives Inspectorate, and the Nuclear Installations Acts of 1959, 1965, and 1969, operated by the Department of Trade and Industry and its inspectorate.

Along the third line are found the acts which deal mainly with emissions and effluents from work-places, of which two serve as prototypes, the Radioactive Substances Act of 1960 and the Alkali, etc., Works Regulation Act of 1906. The first alkali inspector was in fact appointed in 1863 with the task of controlling the discharge of noxious fumes from alkali works, but the remit of the Inspectorate was widened, particularly by the 1906 Act, and by mid-century it was concerned with the emis-

sion of dangerous gases and fumes from all heavy chemical and related industries. The Clean Air Act extended their interest to the suppression of smoke, grit, and dust, and the Alkali, etc., Works Order Acts of 1966 and 1971 greatly extended the classes of work for which they were responsible.<sup>13</sup>

The system of Inspectorates, and their administering departments, as they were before the Health and Safety at Work, etc. Act, 1974, is listed in Table 8.

The medical branch of the Factory Inspectorate meantime developed in parallel with the increase in the number of

TABLE 8. *The Inspectorates in 1974*

<i>Title</i>	<i>Government department by which administered</i>	<i>Date established</i>	<i>Approx. no. of establishments for which responsible</i>	<i>Approx. no. of inspectors</i>
Factory Inspectorate	Department of Employment	1833	400,000	700
Mines and Quarries Inspectorate	Department of Energy	1850	5,000	135
Explosives Inspectorate	Home Office	1875	170	9
Alkali and Clean Air Inspectorate	Department of the Environment	1863	1,700	36
Scottish Industrial Pollution Inspectorate	Scottish Development Department	1906	200	4
Agriculture Inspectorate	Ministry of Agriculture Fisheries, and Food Department of Agriculture and Fisheries for Scotland	1952	112,000	50
Nuclear Installations Inspectorate	Department of Energy	1959	29	46
Radiochemical Inspectorate	Department of the Environment	1960	3,000	6
Petroleum Production Inspectorate	Department of Energy	1971	40	10

appointed factory doctors, of whom there were about 1,500 in 1973, when the Employment Medical Advisory Service Act, 1972, came into force. This act separated the Employment Medical Advisory Service (EMAS) from the Factory Inspectorate and the medical inspectors became medical advisers, and the appointed factory doctor as he then was, disappeared. It was envisaged that EMAS would employ about 120 doctors when the service was fully operational, but that it would also appoint doctors to assist with some of the routine statutory periodic medical inspections of persons engaged in hazardous occupations as defined by the Factories Act Regulations, and so far, 450 of these have been established in post.

In 1974 the Health and Safety at Work, etc., Act passed through Parliament, embodying the proposals contained in the Robens report.<sup>15</sup> The Act provides health and safety legislation for all persons at work (with the sole exception of domestic servants in a private household), and is administered by the Health and Safety Commission, acting through their executive. The Health and Safety Executive (HSE) has no power to introduce legislation, which remains the prerogative of the appropriate minister of state, who will usually be the Secretary of State for Employment.

EMAS was taken into the Health and Safety Executive, together with all the inspectorates,<sup>16</sup> but cannot and does not attempt to provide anything approaching a national occupational health service.<sup>17</sup> It is thus up to others to provide a health service for those at work, and this usually means the employer. Many of the large industrial concerns maintain their own medical departments, often with sophisticated facilities for investigation and treatment. The nationalized industries are required by Parliament to provide medical services for their employees, and theirs are often the most fully developed.

The provision of a medical service is, however, something which only a wealthy concern can afford, and most factories in this country are of too small a size to support one. Table 9, which is based on figures in the report of the Dale Committee of 1951, shows this very clearly.<sup>18</sup> Although these figures are somewhat out of date, the distribution of the labour force had not undergone any significant change when Taylor and Wood reported in 1960,<sup>19</sup> nor is it likely to be much different now. The Robens



TABLE 9. *Medical services within factories\**

	<i>Total work-force</i>					<i>Total</i>
	<i>&gt; 26</i>	<i>26-50</i>	<i>51-100</i>	<i>101-250</i>	<i>&gt; 250</i>	
Percentage of factories	83.2	7.5	4.3	3.0	2.0	100.0
Percentage of factories with medical services	0.4	2.5	4.1	10.2	41.3	1.9

\* Based on data in the Report of the Dale Committee (1957).

Committee reported (p. 118) that the DE estimated that 90 per cent of factories with 500 employees or more, had some sort of medical service, which makes the trend shown in Table 9 even more extreme.

Nothing is known with any precision about the organization of private industrial health services, but there are probably about 700 full-time doctors in industry, roughly 1 in 90 of all full-time doctors. Occupational health is only a minority specialty but there is evidently more interest in the subject than when the Dale Committee reported. There were then (in 1951) 239 full-time industrial medical officers, the ratio to all full-time practitioners being about 1 to 140. In terms of the proportion of doctors to the male workforce, there are now approximately 46 industrial doctors per million, compared with 17 per million in 1951. As we have seen, however, the benefits which might accrue from this improvement are not evenly shared. Some of the larger firms also employ industrial hygienists, but the number of fully qualified hygienists is probably no more than 100. Many firms also employ occupational nurses who provide an important service, often working with minimal medical collaboration.

In an attempt to provide small firms with services which they could not otherwise afford, eight group industrial health services have been established.<sup>22</sup> These are non-profit-making organizations which offer both a medical and a hygiene service on a fee-paying basis. It is difficult to know how many people at work are covered by these services, but it is probably not more than a quarter of a million, and there is little doubt that a substantial proportion of the workforce has no medical supervision other than that provided by their general practitioner, who is not likely to have had much undergraduate training in occupational

medicine.<sup>23</sup> And, of course, hygiene arrangements are likely to be less well developed in small firms, since environmental protection is expensive, so that those people most at risk are the ones least well supervised.

Although working conditions are better now than at any other time in our history, occupational health services are still deficient in many respects. There are sound economic reasons for seeking their improvement, since by doing so, it ought to be possible to decrease the amount of industrial injuries benefit which has steadily risen in the last decade to an annual sum of £128 million in 1972, and also decrease the number of working days lost through sickness (see Table 10).

TABLE 10. *Industrial injuries benefits (£ million) and working days lost through certified illness (millions) 1963-72*

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Industrial Injuries Benefit	74	79	95	95	101	106	107	112	117	128
Working days lost	287	299	311	301	328	329	343	314	307	320

## 5 THE WAY AHEAD

The scope of environmental health is so vast that it sometimes seems more sensible not to consider it as a single specialty, but rather as a collection of separate sub-specialties, all sheltering for convenience under one umbrella. An expert committee of the World Health Organization, for example, has identified no less than seventeen different areas of environmental health into which a medical input is required,<sup>1</sup> the most important of which are: the control of infectious disease; sanitation; food hygiene; the control of all types of pollution; occupational hygiene; accident prevention; planning.

The main problem relating to environmental health in this country is not lack of expertise, but the fragmentation of services which has its roots in the historical development of the specialty. The result is that the MOEH, or the CEHO, often does not know where he should turn for help. Since there is no prospect whatever that another major re-organization of health services would be contemplated in the immediate future, any changes relating to environmental health must evolve gradually, preferably with a minimum of expense. This chapter offers a number of suggestions of the routes by which change might come about.

The first and most important step is to integrate existing knowledge and to present it in such a form that it is easily accessible to both the MOEH and the CEHO (or indeed to anyone else with an interest). As the earlier chapters of this book have shown, there is expertise in abundance on most environmental matters, but it is scattered haphazardly throughout many different organizations and institutions. The compilation of an environmental directory to bring together all available sources of

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information would require the co-operation of both central and local agencies. The exact form which such a directory should take would obviously depend upon the amount of data available, the audience to which it was directed, and the cost, but it might usefully take as its model, Suzette Gauvain's admirable source book on occupational health services.<sup>2</sup>

Such a register of sources on environmental health would be most valuable to the MOEH but should be seen, at best, as a stop-gap measure, until a long-term improvement is made in services at both national and local levels.

As a first stage of any long-term planning it would be pertinent to conduct a review of the role of the MOEH himself. My own limited survey has shown that his functions vary greatly from area to area and that he generally has relatively little time to spare for environmental health. It would be of great interest to investigate the duties and responsibilities of the SCMs (EH) in depth and compare them with a group of DCPs who are also MOEHs. How does their efficiency compare? What is the quality of the advice which they can give to the local authorities for whom they act? Does it differ noticeably between the two groups?

Some further investigations might also be undertaken into the attitudes of the local authorities. How would they define the role which they expect their MOEH to perform, for example? How would the job description of an MOEH prepared by local authorities compare with those of the MOEHs themselves?

Since a small number of local authorities have appointed their own full-time MOEH, they might reasonably be expected to have well-established views of his role. It would be instructive to know how the functions and responsibilities of *these* appointees compare with the MOEHs who are employed by the NHS. For an experimental period it might be possible to persuade some local authorities, especially those dissatisfied with the performance of their MOEH, to employ a full-time environmental specialist in order to see whether the quality of service was improved. Finally, those districts which have not appointed a medical officer in any capacity would be worth looking at further. The aim of all these investigations should be to categorize the expectations of the local authorities and the MOEHs, and to suggest the means by which they could best be met.

In the meantime, it is safe to assume that arrangements will continue much as before and that a more effective back-up must be provided for the MOEH who will continue to be the focus of environmental health services at local level. The MOEH needs help in at least four areas, infectious diseases, toxicology, occupational health and in local liaison. I shall discuss each of these in turn.

### *Infectious disease*

The Cox Committee which investigated the outbreak of smallpox in London in 1973, recommended the appointment of regional specialists in epidemiology who would have the duty of advising and assisting in the control of outbreaks of communicable disease.<sup>3</sup> This recommendation seems to be a tacit admission that the MOEHs are not considered in all cases to have the necessary expertise to fulfill this function, which ought properly to be part of their brief. Whilst this may not be true for many of the MOEHs who were formerly MOHs and well versed in communicable disease, it must surely apply to those coming newly into post, since their training is not adequate to give them the necessary skills or experience.

The implementation of the recommendation of the Cox Committee, or something akin to it, is seen as a matter of some importance, and the DHSS has gone some way towards it by setting up a small Communicable Disease Surveillance Centre at Colindale, the central reference laboratory of the PHLS. The centre will co-ordinate the information relating to infectious disease which is obtainable from all sources, and it will be a repository of expertise from which the MOEH can obtain help, particularly in relation to the control of outbreaks of infectious disease. It is to be hoped that in due course this central unit will be supplemented by the appointment of regional epidemiologists, although some investigations will be required to establish how many of them will be needed and how exactly they will function.

Once the scheme becomes fully operational, it may be found that one epidemiologist per region is not enough, and then some consideration may have to be given to establishing posts at area level, as Galbraith has already suggested,<sup>4</sup> although this step

must be a long way off at present, since the NHS has neither the men to fill such posts, nor the money with which to pay them.

### *Toxicological services*

Toxicological advice is already available to the MOEH from several sources, including, amongst others, the DHSS, EMAS, and the MRC Environmental Hazards Unit, but no one source can meet all needs. For example, EMAS is not strictly concerned with problems relating to the general environment, nor the DHSS with those arising inside factories. On this account there would be a great advantage if the MOEH were able to consult with a single agency whose remit included the total environment, able to co-ordinate *all* sources of information.

What seems to be required is a toxicological unit analogous to the Communicable Diseases Surveillance Centre, backed up, where necessary, by regional or area toxicologists. How many would be needed is a matter for research, and the lack of suitable candidates for the posts would severely limit the numbers in the first instance. (This alone might ensure that those available would be used to the greatest advantage!) As a more ambitious extension of this scheme, it might be desirable to establish regional toxicology laboratories, rather on the lines of the PHLS, incorporating those which already exist and building anew where required. Information from all local sources could be channelled from local sources to the central unit, where it would be assimilated for redistribution at local level in a suitably digested form.

### *Occupational health services*

In 1959 the Dale Committee reported that

it is desirable that there should eventually be some comprehensive provision for occupational health covering not only industrial establishments of all kinds, both large and small, but also the non-industrial occupations . . . This, however, is a long term view which cannot be made effective without much more experience to be gathered from future surveys and experiments.<sup>5</sup>

To date it appears that the necessary experience has not been gathered for there has been no attempt to introduce a comprehensive occupational health service. There has been much talk, however, and many suggestions have been put forward concerning the way such a service should be organized. The only thing which is universally agreed, is that it would be quite impracticable for each factory to have a doctor of its own. There is no such consensus on whether occupational health services should be part of the NHS or not. The Porritt Committee<sup>6</sup> recommended that they should be, and this is also the view of the British Medical Association and the Society of Occupational Medicine,<sup>7</sup> but there is some doubt that this would be acceptable to industry. An alternative suggestion is that the HSE should make it the statutory duty of employers to provide health services for working groups of certain types and above a certain (unspecified) size, leaving EMAS and the inspectorates to concentrate on the care of smaller establishments, whilst at the same time maintaining their general supervisory and advisory roles.<sup>8</sup>

On balance, the last proposal seems the most reasonable for industrial health services, and probably the one which would be most acceptable to the DHSS and HSE. Firms could be given the option of setting up their own medical service (if they had not already got one), or of subscribing to a group occupational health service run on non-profit-making lines. The present number of group occupational health services is not sufficient to meet all needs, and more would have to be established to cope with the increased demand. Alternatively, for hygiene services at least, use could be made of a regional toxicological service of the kind described in the preceding section. Since there would be a fee for service, this would be a means of partially financing the service.

There is also a requirement, however, for health services for those working outside industry, and here one thinks particularly of the employees of the NHS and the local authorities. The recommendation made by the Tunbridge Committee<sup>9</sup> that hospitals should set up occupational health services for their employees has received a less than enthusiastic response, and only a small number of hospitals have done so.<sup>10</sup> There is a case for suggesting that the responsibility for occupational health within the NHS and the local authorities should fall upon the MOEH, providing he receives the appropriate training. The duties in

respect of hospitals could also include the supervision of the risks involved in medical treatment and investigations, which affect hospital staff and patients alike. Whilst the latter are not employees, it is appropriate that someone should have over-all responsibility for their safety, if not their health, during their stay in hospital.

If the MOEH were to carry out these tasks in addition to everything else, then clearly he would need guidance and assistance, and this could come from the regional epidemiologist or toxicologist, should they materialize. For laboratory aid he could call upon the services which are already available in his area or region. Consideration ought to be given to the creation of one further post, at regional level however, that of specialist in occupational medicine who with the epidemiologist and the toxicologist would form a triumvirate of regional environmental health specialists.

#### *The environmental health team*

I have stressed throughout that the chief problem which has to be overcome in environmental health is the co-ordination of the wealth of existing expertise. At local level it should be possible to go some way towards this by forming an environmental health team, either on the lines of the district management team or modelled on existing advisory committees which some local authorities have already set up. The membership of the team need not be exclusive, but the core would have to consist of at least the MOEH and CEHO, together with representatives of MAFF, HSE, PHLS, and the county council. Other members could be co-opted according to necessity or demand. Each team would be free to appoint to the chair whichever of their members seemed to them to be the most suitable for the job.<sup>11</sup>

#### *The MOEH*

At present the MOEH is the focus of local environmental health services and this he will have to remain for the foreseeable future and his position would be greatly strengthened by the provision of a range of back-up services, such as I have suggested above. In any future developments the MOEH must necessarily



take the generalist view of environmental matters, even though he will no doubt choose to specialize in some areas, either from personal interest or because local circumstances demand it. If he is to do his job well, however, he must have the time in which to do it, and this may mean relieving some MOEHs of other duties, leaving them free to concentrate wholly on environmental health. In some areas this will not be necessary, but in others the MOEH may find that he needs additional help if his work load seems likely to overwhelm him. The requirements for extra staff will become apparent as and when other services are implemented, but they are not likely to be so large that the costs involved will be an absolute deterrent.

### *Central considerations*

With the present central organization it is impossible to treat environmental health in a holistic manner, however desirable this may be conceptually. When EMAS was formed there was the opportunity to integrate the environmental health service by taking it into the DHSS, but the chance was missed and may not arise again. One praiseworthy step towards integration has been the bringing together of all the inspectorates under the auspices of the HSE and it is to be hoped that this arrangement will not be disrupted by the transfer of the Alkali Inspectorate back to the Department of the Environment.

The most one can reasonably hope for at central level is the development of good lines of communication and some clarification of roles. At present there is a great deal of overlap of interests and this has undoubtedly led to confusion at ground level. Ideally one would like to see all aspects of environmental health coming under one central department but this does not seem a likely prospect. In the research which goes into preparing the environmental source-book, there will be an opportunity to examine the roles of government and lay them out in a way which will be intelligible to the MOEH so that he can at least present any problems to the quarter where they will receive the best and quickest attention.

## 6 TRAINING THE SPECIALIST IN ENVIRONMENTAL HEALTH

The specialist in environmental health, like any other specialist, ought to possess a readily identifiable professional skill which is unique to himself and which is acquired by following a suitable course of training, and from experience gained within his subject. Environmental health includes such a large number of component parts that its practitioners must be of a high calibre to encompass them all, but persons of quality will not be attracted to follow a specialty which can be seen as little more than an appendage to an administrator's main task. Nor is the present training programme such that it will produce at the end a man who can be seen to have either the knowledge or the experience required from a consultant in environmental health.

In 1966 the Todd Report<sup>1</sup> noted that the recruitment into community medicine was unsatisfactory and the situation has shown no improvement in the succeeding decade. Figure 3 shows the dates of qualification of the MOEHs who replied to the questionnaire referred to in Chapter 2. Half qualified before 1950 and three-quarters before 1955. We can expect, therefore, that about half those in post will have vanished from the scene in a decade or so, but, as others have also shown,<sup>2</sup> recruitment is by no means keeping up with the demand. Nor indeed does there seem any prospect of it doing so, for in a recent survey of newly qualified doctors, only 10 out of 2,022 put community medicine as their first choice for a career.<sup>3</sup>

To attract people into environmental health, a proper career structure must be evolved and the subject placed on a sound academic and practical footing. The prospective specialist requires to have a knowledge of epidemiology, of infectious disease, of toxicology, of occupational medicine, of the risks

Notes for this chapter begin on page 64.

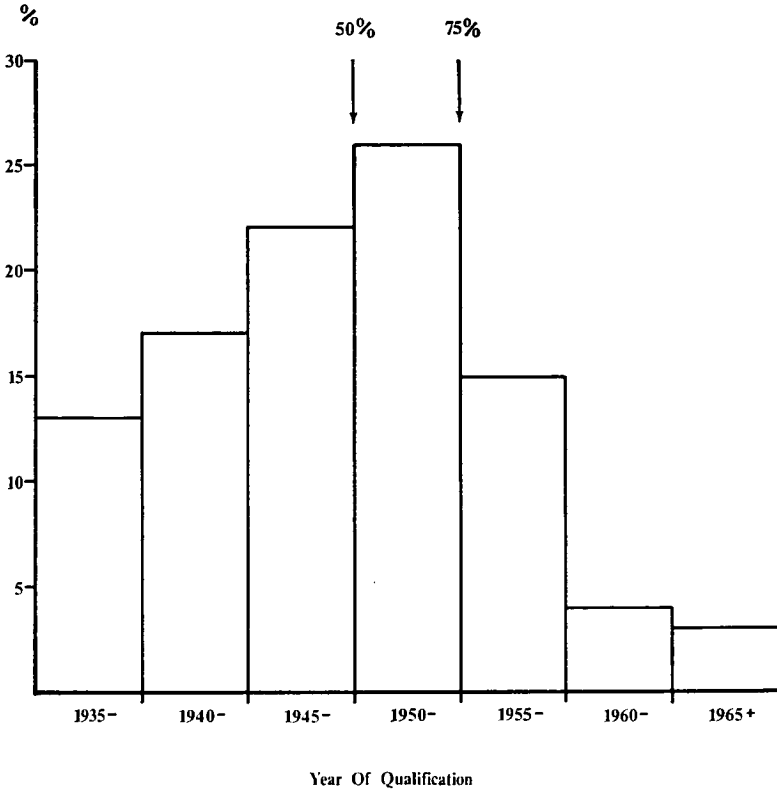


Figure 3. Percentage of MOEHs qualifying in each year group.

from medical treatment and investigations, of the effects of the physical environment, and of the law relating to his obligations and duties. He has also to be a good doctor; his scientific skill must be embroidered on a proper clinical ground.

At present, training in community medicine is based on modules in line with the recommendations of the Hunter Committee,<sup>4</sup> supplemented by individual training schemes at senior registrar level, and this is the pattern which a course in environmental health should follow. The training must be sufficiently flexible that doctors may enter it late on in their careers if they so wish, and it should be structured so that late entrants can be

credited with any relevant experience which they may already have acquired.

The trainee should start with a period of two or three years of general professional training at SHO and registrar level which should aim to give him a wide knowledge of infectious diseases, especially those which he will be called upon to notify as proper officer many of which are rare and exotic (Table 11), and of occupational medicine and general practice.

After this period of rotating jobs, the trainee would move into the first stage of specialist training in preparation for Part 1 of the MFCM examination. In addition to covering the core subjects in the syllabus, these years would orientate the trainee towards the practice of community medicine in its broadest sense, and give him an understanding of the structure and workings of the several parts of the health service.

Having achieved the first part of the membership examination, the next move is to higher specialist training as a senior registrar. This would include clinical work, attachment to specialists in environmental or occupational health and community physicians, and also training in the practical applications of epidemiology in, for example, the investigation of outbreaks of infectious disease or toxicological hazards.

During this final period of training, there should also be the opportunity to attend special courses, most of which would probably consist of short-term modules. Some of the trainees,

TABLE 11. *Notifiable diseases*

Acute encephalitis	Ophthalmia neonatorum
Acute meningitis	Paratyphoid fever
Acute poliomyelitis	Plague
Anthrax	Rabies
Cholera	Relapsing fever
Diphtheria	Scarlet fever
Dysentery (amoebic or bacillary)	Smallpox
Infective jaundice	Tetanus
Lassa fever	Tuberculosis
Leprosy	Typhoid fever
Leptospirosis	Typhus
Malaria	Viral haemorrhagic fever
Marburg disease	Whooping cough
Measles	Yellow fever

however, may wish to undertake a more formal academic course leading to a higher degree such as an MSc in environmental health. The details of such a course would need careful consideration and this is not the place to enlarge further, except to say that it would probably be a hybrid beast embodying some of the features which are at present to be found in the syllabuses of the MSc courses in social medicine, occupational medicine, and occupational hygiene of the London School of Hygiene and Tropical Medicine, and in the syllabus of the DPH.

The period as a senior registrar would be preparatory to taking the second part of the MFCM examination, after which there would be a variety of options open, depending upon the personal preferences of the individual concerned. Thus he might opt to become a MOEH or a SCM(EH), conduct some research at a university, or enter industry, for which he would be as well qualified as most newly appointed industrial physicians.<sup>5</sup> His other options would depend very much on how far other environmental health services are developed, but one would hope that there would be opportunities for a career in the DHSS or EMAS, or in the RHA.

### *Who trains the trainers?*

The success of a training scheme depends upon the quality of the trainers, and in environmental health they are presently not abundant. There are already a few courses which are being provided for MOEHs in post, short in duration and designed to update knowledge. Amongst the people attending these courses one would hope to be able to identify the future trainers and concentrate efforts upon them so that if a senior registrar training scheme were to be adopted there would be a cadre of specialists with enough expertise to whom the trainees could be attached.

The provision of courses for in-post training will require there to be one or more academic centres with a specialist interest in environmental health and if the subject is to have a serious academic base we should be working towards the creation of a small number of academic units which will provide teaching facilities and conduct basic research.

It also seems appropriate to encourage the medical schools to include environmental health as part of their undergraduate curriculum so that students can be stimulated early on to consider this as a choice of career.

# NOTES

## CHAPTER 1

1. H. E. Sigerist, *A History of Medicine*, vol. 1: *Primitive and Archaic Medicine* (New York: OUP, 1959), pp. 105–213.

2. F. P. Lisowski, 'Prehistoric and early historic trepanation', in *Diseases in Antiquity* (ed. D. Brothwell and A. T. Sandison) (Springfield: Thomas, 1967), pp. 651–72. The operation persisted into modern times, see E. L. Margetts, 'Trepanation of the skull by the medicine-men of primitive cultures, with particular reference to present-day native East African practice', *ibid.*, pp. 673–701.

3. L. S. King and M. C. Mechan, 'A history of the autopsy. A review', *A. J. Pathol.* 73 (1973), pp. 514–44.

4. Translations by W. H. S. Jones, *Hippocrates*, vol. 1 (London: Wm Heinemann, 1948).

5. For further discussion of this point see R. Dubos, *Man, Medicine and Environment* (London: Pall Mall Press, 1968); *Mirage of Health* (London: Allen and Unwin, 1959).

6. H. E. Sigerist, 'The *Regimen Sanitatis Salernitanum* and some of its commentators', in *Landmarks in the History of Hygiene* (London: OUP, 1956), pp. 20–35.

7. The translation, published in 1607, is by Sir John Harrington, lawyer, poet, courtier, and sometime favourite of Elizabeth I. He was also the inventor of the water closet, thus securing immortality for himself (see H. E. Sigerist, 'An Elizabethan poet's contribution to public health: Sir John Harrington and the water closet', *Bull. Hist. Med.* 13 [1943], pp. 229–43).

8. W. Osler, *Aequanimitas* (London: H. C. Lewis).

9. In 1801 approximately 17 per cent of the population of England and Wales lived in towns or cities with more than 20,000 population. By 1861, this figure had risen to 38 per cent (G. Rosen, *A History of Public Health* [New York: MD Publications, 1958], p. 202).

10. E. Chadwick, *Report on an Inquiry into the Sanitary Conditions of the Labouring Population of Great Britain* (London: HMSO, 1842), p. 370.

11. *Ibid.*, p. 158.

12. *Ibid.*, p. 370.

13. *Ibid.*, p. 371. The economic benefits of preventing disease continue to be stressed. The recent publication from the Department of Health of Great Britain (*Prevention and Health: Everybody's Business* [London: HMSO, 1976]), for example, states that 'much prevention will serve to increase the active earning life of individuals rather than simply to arrest premature death. This reduces the demand on public funds.' Chadwick would have liked that.

14. *The Times* (31 July 1854). *The Times* had been conducting a vendetta against Chadwick and Southwood Smith for some time, writing that they had made 'cholera itself scarcely a more dreaded visitation than their own' (11 July 1854). Public recognition for Chadwick's work was long delayed. He had to wait until 1889, the year before he died, to receive a knighthood. In its obituary, the *Daily News* wrote, 'Had he killed in battle as many as he saved by sanitation, he would have had equestrian statues by the dozen put up to his memory' (7 July 1890).

15. A good account of the life and times of Simon is to be found in *Sir John Simon 1816-1904 and English Social Administration*, by Royston Lambert (London: MacGibson and Kee, 1963).

16. Simon, *Fourth Report to the Privy Council* (1861). An edited version is to be found in *Public Health Reports by John Simon*, edited by Edward Seaton (London: Sanitary Institute, 1887), vol. 2, pp. 26-60.

17. Simon's proposals were not acted upon until 1974, when the Health and Safety at Work Act required employers 'to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees' (Part 1, section 2(i)). It is interesting, however, that the 'best practical means' approach was adopted by the Alkali Inspectorate (founded in 1863) as the most satisfactory way to control industrial pollution and it was used by them as the basis for establishing the rate of emissions to the atmosphere from processes and factories under its jurisdiction.

18. W. M. Frazer, *A History of English Public Health 1834-1939* (London: Ballière, Tindall, and Cox, 1950), p. 120.

19. The various Nuisances Removal and Disease Prevention Acts were passed in 1846, 1848, 1855, 1860, and 1863.

20. As early as 1856 London has 48 medical officers of health, and in this year the Metropolitan Association of Medical Officers of Health was formed. Other societies were formed in the provinces after 1875. In 1891 they all amalgamated to form the Society of Medical Officers of Health.

21. It was not until 1888 that the Local Government Act made it necessary for the medical officer of health in a district with a population of 50,000 or more to hold the Diploma of Public Health. Later, this requirement was extended to cover *all* full-time appointments.

22. The notification of certain infectious diseases was made compulsory by the Infectious Diseases Notification Acts of 1889 and 1899. In London notification took place under sections 55-57 of the Public Health (London) Act of 1897.

23. The mortality rate in England and Wales did not decline before the eighth decade of the nineteenth century. According to McKeown and Record, five diseases, or groups of diseases, accounted for almost the



whole of the reduction in the death rate: tuberculosis (45 per cent), typhus, typhoid, and continued fever (22 per cent); scarlet fever (19 per cent), cholera, dysentery, and diarrhoea (8 per cent), and smallpox (6 per cent). These authors consider that sanitary reform would have been responsible only for the decline of typhus, typhoid, and cholera, and that the remainder of the improvement was due to improved standards of living, notably improved nutrition (T. McKeown and R. G. Record, 'Reasons for the decline in mortality in England and Wales during the nineteenth century', *Pop. Stud.* 61 [1962], pp. 94-122).

24. Data from Frazer, *op. cit.*, p. 168.

25. The details of these various acts and their dates of passage are to be found in chapter 6 of Frazer's book (see note 18).

26. These powers were granted under the Maternity and Child Welfare Act, 1918, although some local authorities had already been providing such care and employing health visitors for this purpose.

27. The Ministry of Health Act, 1919, came into force on 3 June.

28. This came about through the provisions of the Local Government Act of 1929.

29. *Annual Report of the Chief Medical Officer of the Ministry of Health 1928* (London: HMSO, 1929), p. 25.

30. The new Act contained 347 sections and 3 schedules; almost exactly the same number as the one it replaced.

31. These numbered no less than 73.

32. Frazer, *op. cit.*, p. 448.

33. The local authorities retained the other duties which had been invested in them by the Public Health Act of 1936, and some new duties were added. Details of the rearranged structure are outlined in the *Report of the Ministry of Health for the Year Ended 31st March, 1949*, Cmd 7910 (London: HMSO, 1950).

34. The concept that medical services based on cure will improve health has been strongly challenged by T. McKeown (*The Role of Medicine: Dream, Mirage, or Nemesis?* [NPHT, 1977]. McKeown's view is that in the past environmental changes were the greatest factor in the improvement in health and that in the future will depend upon modifications of personal behaviour particularly relating to smoking and diet.

## CHAPTER 2

1. Reorganization was implemented under the Local Government Act, 1972, and the National Service Act, 1972. These acts came into force on 1 April 1974, as did the National Health Service (Scotland) Act, 1972. Local government in Scotland was reorganized by the Local Government (Scotland) Act, 1973, operational from 16 May 1975. Local government in London had previously been altered by the London Government Act, 1963, which was enforced as from 1 April 1965.

2. The details of reorganization are contained in Cmnd 4734 (1971), Cmnd 5055, and Cmnd 5056 (1972) for Scotland, England, and Wales respectively.

3. A general account of local authority activities in these areas is to be found in the *Environmental Health Report*, published each year by the Environmental Health Officers Association.

4. See, for example, E. N. Wakelin, 'Health and safety at work. Aspects of the act affecting the local authority', *R. Soc. Hlth J.* **95** (1957), pp. 309-12.

5. Report of the *Working Party on Medical Administrators* (London: HMSO, 1972), p. 31.

6. A report from the *Working Party on Collaboration between the NHS and Local Government on its Activities to the end of 1972* (London: HMSO, 1973), p. 17.

7. Joint Working Party on the Integration of Medical Work, *Community Medicine in Scotland* (Edinburgh: HMSO, 1973), p. 24.

8. Working Party on Collaboration's first report (no. 6). See also the Working Party's *Report on its Activities from January to July, 1973* (London: HMSO, 1973).

9. Details are given in HRC(73)34 and HRC(74)13, distributed by the DHSS.

10. From Table 3 it will be seen that there are thus 47 posts in England and Wales: 35 in NHS areas corresponding to Metropolitan districts, 4 in areas corresponding to London boroughs, 5 in single district areas corresponding to non-metropolitan counties, and 3 in single district areas corresponding to Welsh counties.

11. Thirty-three of those who replied were SCMs (EH), the remainder were DCPs.

12. Attempts have been made to introduce alternative arrangements in some local authority areas which, it is hoped, will substantially diminish the number of applications for rehousing which are referred to the MOEH. For example, see W. H. Parry, 'Medical priorities in rehousing: a new approach', *Br. med. J.* **3** (1975), p. 233.

### CHAPTER 3

1. I have made no attempt to describe environmental health services in any other countries. Those who are interested to know about services in Europe are referred to *Health Services in Europe*, 2nd edn (Copenhagen: WHO, 1975).

2. See Cmnd 5626, 1974, and Cmnd 6054, 1975, respectively.

3. Examples would be the Chief Medical Officer's circular outlining the provisions of the Zoonoses Order, 1975 (CMO(75)17), the *Memorandum on the Control of Outbreaks of Smallpox* (London: HMSO, 1975) and the *Memorandum on Lassa Fever* (London: HMSO, 1976). A draft *Memorandum on Rabies* has also been circulated, the definitive version of which will appear later in 1977.

4. Medicinal products for use in animal foodstuffs or in veterinary work are licensed by the Ministry of Agriculture, Fisheries, and Food.

5. See O. L. Wade and Linda Beeley, 'Monitoring adverse reactions to

drugs: towards a therapeutic adult,' *Internat. J. Hlth Serv.* 4 (1974), pp. 109-23.

6. These guidelines are contained in section 7 of the *Code of Practice for the Protection of Persons against Ionizing Radiation arising from Medical and Dental Use* (London: HMSO, 1972).

7. See for example, the recent decision in respect of viral hepatitis, Cmnd 6257, 1975.

8. These particular regulations are contained in Statutory Instruments 1974/1367 and 1974/226 respectively.

9. Cmnd 5780, 1974.

10. Details of the earlier projects are contained in the DOE's Pollution Paper, no. 1 (London: HMSO, 1974). The Department's Research Register for 1975, however, contains over 1,000 projects connected with environmental health and hygiene.

11. One other result of the Stockholm conference was the establishment of a United Nations Environmental Programme, the secretariat of which has its headquarters in Nairobi.

12. The titles of these are: 1. *The Monitoring of the Environment in the United Kingdom* (1974); 2. *Lead in the Environment and its Significance to Man* (1974); 3. *The Non-Agricultural Uses of Pesticides in Great Britain*; 4. *Controlling Pollution* (1975); 5. *Chlorofluorocarbons and their Effect on Stratospheric Ozone* (1976); 6. *The Separation of Oil from Water for North Sea Oil Operations* (1976); 7. *Effects of Airborne Sulphur Compounds in Forests and Freshwaters* (1976); 8. *Accidental Oil Pollution of the Sea* (1976); 9. *Pollution Control in Great Britain: How it Works* (1976); 10. *Environmental Mercury and Man* (1976); 11. *Environmental Standards. A Description of United Kingdom Practice* (1977); 12. *Lead in Drinking Water. A Survey in Great Britain 1975-1976* (1977); 13. *Tripartite Agreement of Stratospheric Monitoring between France, the United Kingdom and the United States of America* (1977); 14. *Lead Pollution in Birmingham* (1978).

13. M. Bremner, 'Hazards of school science', *New Scientist*, 69 (1976), pp. 550-2.

14. Some recent regulations include the Antioxidant in Food Regulations (SI 1974/1120); the Miscellaneous Additives in Food Regulations (SI 1974/1121); the Miscellaneous Additives in Food (Amendment) Regulations (SI 1975/1485); and the Preservatives in Food Regulations (SI 1975/1487).

15. The titles of the five reports issued by the Working Party are: *Survey of Mercury in Food* (1971); *Survey of Lead in Food* (1972); *Survey of Mercury in Food: a Supplementary Report* (1972); *Survey of Cadmium in Food* (1973); *Survey of Lead in Food: First Supplementary Report* (1975) (London: HMSO).

16. Food Additives and Contaminants Committee, *Review of the Lead in Food Regulations 1961* (London: HMSO, 1975). The recommendations contained in this review have not yet been acted upon.

17. ADAS Advisory Paper, no. 10, 1971.

18. These duties are specified in the Diseases of Animals Act, 1950, and the Prevention of Damage by Pests Act, 1949.

19. More details are to be found in the DOE's Pollution Paper, no. 3 (see note 12).

## CHAPTER 4

1. The report on the Radcliffe fever has been reprinted, together with an introduction by Meiklejohn in the *Br. J. Indust. Med.* **16** (1959), pp. 68–69.

2. A copy of Percival's resolutions appears in *A History of Factory Legislation*, by B. L. Hutchins and A. Harrison, 3rd edn (London: Frank Cass, 1966), pp. 9–11.

3. Peel's motives in introducing the bill were somewhat less than purely humanitarian. He was aware that his own factories were grossly mis-managed, but having no time to correct the faults himself, he passed an Act of Parliament to do it for him!

4. W. R. Lee, 'Emergence of occupational medicine in Victorian times', *Br. J. Indust. Med.* **30** (1973), pp. 118–24.

5. The Act embodied the recommendations of the Royal Commission on the Employment of Children in Factories. Chadwick was one of the commissioners, and it was probably due to his enthusiasm for centralization that the establishment of a new government department was proposed.

6. The title of Certifying Surgeon was kept until 1948 when it was changed to Appointed Factory Doctor. This office was abolished in 1973 by the Employment Medical Advisory Service Act of 1972.

7. Two acts were passed in 1867, the Factory Acts Extension Act, which regulated working conditions in establishments employing more than 50 people, and the Workshop Regulations Act, which applied to establishments where less than 50 were employed. For details of these acts see Hutchins and Harrison, *op. cit.*, pp. 120–72.

8. The history of this era in occupational medicine has been well recounted by W. R. Lee in 'Occupational medicine', in *Medicine and Science of the 1960's* (ed. F. N. L. Poynter) (London: Wellcome Institute of the History of Medicine, 1968), pp. 151–81.

9. Association of Certifying Medical Officers of Great Britain and Ireland, *Br. med. J.* **2** (1868), 65. The association lasted only about ten years, but was revived in 1889 under a new name, the Association of Certifying Factory Surgeons. Many of the officers in this Association were the same as those in the earlier one.

10. See C. F. Brockington, *Public Health in the Nineteenth Century* (Edinburgh: Livingstone, 1965), pp. 211–23.

11. These data are all contained in Simon's reports to the Privy Council and are available in a convenient form in Seaton's edited version (see note 19, Chapter 1), pp. 26–54 (fourth report), pp. 60–75 (fifth report), and pp. 101–20 (sixth report).

12. The Department of Employment administered the Factories Acts

and the Offices, Shops, and Railway Premises Act, enforcing them partly through the Factory Inspectorate and partly through local authorities. The Mines and Quarries Act was implemented by the Department of Trade and Industry and its Inspectorate of Mines and Quarries, whilst the agricultural acts were the responsibility of the Ministry of Agriculture, Fisheries, and Food and the Department of Agriculture and Fisheries for Scotland and their Inspectorates.

13. After the 1971 act, sixty-three classes of works were placed under the jurisdiction of the Alkali Inspectorate. In Scotland the provision of the acts were enforced by the Industrial Pollution Inspectorate of the Scottish Development Department.

14. See Margaret Casey, 'Employment Medical Advisory Service', *Br. J. Indust. Med.* **30** (1973), pp. 92-94.

15. *Safety and Health at Work*, Cmnd 5034 (London: HMSO, 1972). The report met with a very mixed reception from occupational physicians. Compare for example, the views of R. C. Browne ('Safety and health at work: the Robens Report', *Br. J. Indust. Med.* **30** [1973], pp. 87-94) and K. P. Duncan ('Health care of people at work in Britain Occupational health services', *J. Soc. Occup. Med.* **26** [1976], pp. 31-34). Browne considers the report to be 'authoritative and laced with common sense', whereas Duncan writes, apropos of chapter 12, that the comments contained therein were 'as ill-formed as they were unhelpful . . .'.

16. The Royal Commission on Environmental Pollution in their fifth report have recommended that the Alkali Inspectorate be returned to the direct control of the DOE and form the basis of a new inspectorate for which the Commission has proposed the name, Her Majesty's Pollution Inspectorate (HMPI). This new inspectorate would be charged to monitor all types of pollution in the general environment. (Royal Commission on Environmental Pollution, *Air Pollution Control. An Independent Approach*, Cmnd 6371 [London: HMSO, 1976].) It remains to be seen whether this recommendation is acted upon.

17. The scope of EMAS has been widened as compared with the old Medical Inspectorate, and its responsibilities now include all the following:

(1) Advice on occupational health aspects of health and safety regulations and codes of practice including notifiable industrial diseases and gassing accidents (arising under sections 82 and 85 respectively of the Factories Act, 1961).

(2) The medical examination of persons employed on particular hazardous processes subject to regulations made under the Factories Act, 1961 (and in future any regulations which may be made or codes of practice which may be approved under the HSW Act).

(3) Other medical examinations, investigations, and surveys of workers in connection with their employment.

(4) Advice to the constituent inspectorates of the Health and Safety Executive and to employers trade unions, employees, and others concerned on the medical occupational aspects of toxicology, carcinogenicity and teratogenicity, immunological disorders, physical hazards (such

as noise, vibrations, and ionizing radiations) pulmonary diseases, and ergonomics.

(5) Occupational health research: identifying needs, planning and mounting epidemiological and other studies, commissioning studies from the Medical Research Council and other outside bodies, and co-operating in studies mounted by industry.

(6) Advice on the the provision of occupational medical, nursing, and first aid services and facilities and on the development of occupational health services in industry.

(7) Maintenance of occupational health statistics.

(8) Oversight of the Health and Safety Executive's medical laboratory.

(9) Advice on medical aspects of rehabilitation for employment and of training for and placing in employment, principally to the Employment Service Agency, Training Service Agency, and Careers Service.

(10) Medical supervision, medical guidance, and medical examination of people attending the Employment Rehabilitation Centres of the Employment Service Agency and the Skillcentres of the Training Services Agency, including first aid cover.

(11) Medical and nursing advice on international aspects of occupational health (for example matters arising from the EEC and International Labour Organization).

18. *Report of a Committee of Enquiry on Industrial Health Services*, Cmnd 8170 (London: HMSO, 1951).

19. Lord Taylor and C. H. Wood, in *Modern Trends in Occupational Health*, ed. R. S. F. Schilling (London: Butterworth & Co., 1960), pp. 282-93. In fact things have slightly improved as the EMAS survey, published since the text for this chapter was written, shows (*Occupational Health Services. The Way Ahead* [London: HMSO, 1977]. See especially Tables 1 and 2, p. 10).

20. See Duncan, *op. cit.* (note 15). A slightly lower estimate is given by I. J. Sawtell and Jane Cooper, 'Medical officers in industry', *J. Soc. Occup. Med.* **25** (1975), pp. 38-49.

21. In the Todd Report, only 7 out of 445 medical students gave industrial medicine as their first choice for a career (*Royal Commission on Medical Education 1965-68*, Cmnd 3569 [London: HMSO, 1968], p. 359)

22. They are: the Central Middlesex, Harlow, North of England, Rochdale, Slough, Telford, West Midlands, and East of Scotland Industrial Health Services. In addition, the National Occupational Hygiene Service offers a hygiene service, but no medical service.

23. In 1974, only 15 out of 25 medical schools in the United Kingdom gave any formal training in occupational medicine and in most of those it occupied a total time of less than six hours (H. A. Waldron, 'Undergraduate training in occupational medicine', *Lancet*, **ii** [1974], pp. 277-8).

## CHAPTER 5

1. *National Environmental Health Programmes: Their Planning, Organization and Administration* (Geneva: World Health Organization, 1970), p. 10.

2. S. Gauvain, *Occupational Health: A Guide to Sources of Information* (London: Heinemann, 1974).

3. *Report of the Committee of Inquiry into the Smallpox Outbreak in London in March and April 1973* Cmnd 5626 (London: HMSO, 1973), p. 116.

4. N. S. Galbraith, 'Epidemiology and the Green Paper. A national epidemiological service?' *Lancet*, ii (1968), pp. 1339-40. For an account of the CDSC see, N. S. Galbraith, 'A national centre for the surveillance and control of communicable disease', *Proc. Ry. Soc. Med.* 70 (1977), pp. 889-93.

5. Cmnd 8170, 1951, p. 19.

6. *A Review of the Medical Services in Great Britain* (London: British Medical Association, 1962), pp. 137-41.

7. The views of the BMA concerning the future developments of occupational health services have been outlined in Appendix 8 of the Porritt report (note 6, pp. 257-63). Those of the Society of Occupational Medicine were contained in their evidence to the Robens Committee (see *Trans. Soc. Occup. Med.* 21 [1971], pp. 43-46). The Robens Committee, however, came down in favour of leaving occupational medicine outside the NHS, at least for the immediate future (Cmnd 5034, 1972, pp. 115-23).

8. In their recent discussion document (*Occupational Health Services, The Way Ahead* [London: HMSO, 1977]), the Health and Safety Commission have indicated some of the ways in which they would like to see occupational health services develop. Amongst their suggestions are that large firms might be encouraged to open their facilities to their smaller neighbours, that joint services be provided for firms within the same industry, and that the practicality of organizing local health services based on occupational health nurses should be investigated. It is tacit within this document that there is no likelihood that central government will develop a comprehensive health service for those at work.

9. *The Care of the Health of Hospital Staff* (London: HMSO, 1968).

10. I am referring here to the provision of a full occupational health service of the kind which is provided, for example, at the Central Middlesex Hospital, or the Bedford Hospital or Northwick Park Hospital. Although a comparatively large number of hospitals employ nurses to provide a service for their staff, few are fully trained in occupational health nursing (see J. D. Harte 'Occupational health for area health authority staff', *Ry. Soc. Health J.* 94 [1974], pp. 292-5). The whole topic of occupational health services in hospitals is discussed in some detail in *Proc. Ry. Soc. Med.* 65 (1972), pp. 447-66, and in J. A. Lunn's book *The Health of Staff in Hospitals* (London: Heinemann, 1975). The place and purpose of health services in local authorities is discussed by C. H. Shaw ('Occupational health in local government', *Ry. Soc. Health J.* 94 [1974],

pp. 289-92). It should be noted that some of the larger authorities already employed their own medical adviser.

11. Or rotate them all in turn if this seemed a more equitable arrangement.

## CHAPTER 6

1. *Report on Medical Education* (see note 21, Chapter 4), p. 116.
2. P. J. Heath and W. H. Parry, 'Community medicine: has it a place?', *Lancet*, ii (1976), pp. 82-84.
3. J. Parkhouse and C. McLaughlin, 'Career preferences of doctors graduating in 1974', *Br. med. J.* 2 (1976), pp. 630-2.
4. *Report of the Working Party on Medical Administrators* (see note 5, Chapter 2).
5. The form which postgraduate training in occupational medicine will take has yet to be agreed, but will depend largely upon the Faculty of Occupational Medicine recently established within the Royal College of Physicians. One of its first tasks will be to devise an examination system for the membership, the first part of which could with advantage be common to part I of the MFCM, although there is almost no likelihood that this will be the case. For further details see 'Faculty of occupational medicine', *Lancet*, i (1978), pp. 1081-2.



# The Medical Role in Environmental Health

H. A. WALDRON

The reorganization of the National Health Service Act, 1973, profoundly changed the role of the medical adviser to local authorities. The former medical officer of health was a statutory officer, with clear-cut duties to his local authority laid down in the Local Government Act, 1933, the Public Health Officers Regulations made under that Act, and other legislation.

In the Act, the office of Medical Officer of Health was discontinued and largely replaced by the Medical Officer for Environmental Health, although some responsibilities were dispersed to the Specialist in Community Medicine (Child Health) and the Specialist in Community Medicine (Social Services).

The main thesis of the book is that the medical input into environmental health is diminishing and that ways should be found to correct this trend.

This book merits careful study, not only by specialists in community medicine, but also by environmental health officers and others. A better basis for communication and shared responsibility is necessary, and there is a need to review further the services for environmental health, both nationally and locally.

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