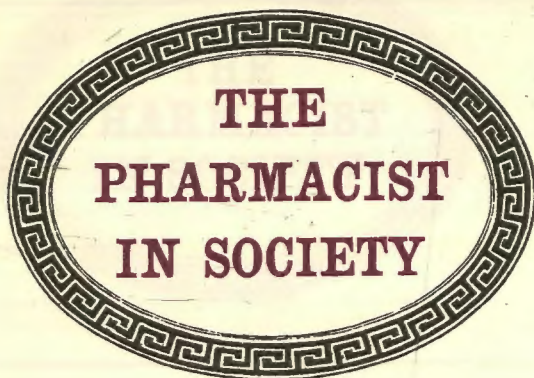


# THE PHARMACIST IN SOCIETY







Office of Health Economics

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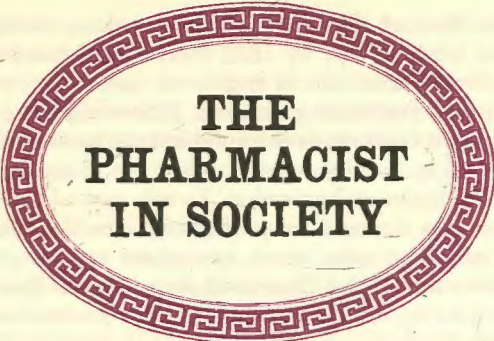
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*Illustrations*

The Cover has been taken from a print entitled, 'The Apothecary', which was published in 1830 by T. McLean, 26 Haymarket. The borders surrounding the chapter headings are taken from engravings of 19th-century pharmacists' labels, used for medicinal lozenges.

Prints and engravings kindly loaned by the Pharmaceutical Society Library.



# THE PHARMACIST IN SOCIETY

## THE EMERGENCE OF THE PROFESSION

A FEATURE of the development of Britain in the 19th century was the emergence of the organised professions. In medicine, law, engineering and accountancy, for example, there was the introduction or extension of formal training and minimum standards of admission. Professional qualifications restricted entry to those who had acquired sufficient skill and knowledge. Codes of practice were laid down by the professional bodies, who also became involved in questions of status and remuneration. However, within this broad pattern, there were substantial differences between individual professions.

In the case of the barristers, who were educated, admitted and disciplined by the Inns of Court, law – like the Church – had long been recognised as a profession. However, in the case of the articled clerks, who later became the solicitors, it was not until 1833 that their professional body, the Law Society, was formed, and it was 1860 before the Solicitors' Act required them to have a comprehensive education. But both the Inns of Court and the Law Society have remained strong and cohesive, and exercised strict control over all who enter the legal profession.

Accountants and engineers, on the other hand, have emerged as more diverse professions. Neither the Institute of Civil Engineers, founded in 1818, nor the Institute of Accountants, founded in 1862, grew up to represent the whole of their

professions. As each new branch of engineering emerged, new institutions were set up; by 1872 there were separate professional bodies for mechanical engineers, naval architects, electrical engineers and mine managers. This trend has continued into the present century, as aeronautical engineers, production engineers and radio engineers, for example, have each set up their own Institute or Institution. In the case of accountants, there grew up a demand for professional qualifications which could be obtained after more specialised or less protracted training than that of the Chartered Accountant. This demand was catered for by the formation of various professional bodies such as the Institute of Municipal Treasurers and Accountants.<sup>1</sup>

In essence, the function of a professional organisation should be to prevent any excessive or unscrupulous exploitation of the profession's activities, which would be detrimental to the profession or to the community as a whole. All professional men and women must earn their living; and there is no reason why they should not have an economic motive to work harder and better. But where this economic motive is in conflict with the interests of the community, professional standards must be established to reconcile this conflict. The member of a profession cannot merely seek to maximise his economic gains regardless of other considerations. Nowhere is this principle more important than in the many professions concerned with the health of the nation – the dentists, doctors, midwives, nurses and pharmacists, for example.

The professional status of the physician has long been acknowledged; for centuries medicine has been one of the superior faculties of the older universities. The barber surgeons were much later in establishing that status, and the professions of medicine and surgery were not consolidated until the statutory formation of the General Medical Council in 1858. Since then, this Council has set professional standards and granted licences to practice. The early history of organised pharmacy in Britain is intertwined with the history of medical practice. The members of the Society of Apothecaries, which was founded in 1617, not only dispensed for the physicians, but themselves recommended and prescribed medicines. Despite protests from the physicians, the apothecaries' legal right to give medical advice was upheld in a House of Lords' judgement in 1703 and, under the Apothecaries Act of 1815, they

were allowed to charge for advice as well as for the medicines they dispensed.

Parallel with this development of the apothecaries as a separate body of medical practitioners, there grew up a class of persons known as 'chemists and druggists' who prepared and sold medicines to the public and competed with the apothecaries in dispensing. The 1815 Act acknowledged the existence of the chemists and druggists, and as the apothecaries progressively assumed the role of general medical practitioners, so the chemists and druggists took over their role as dispensers of physicians' prescriptions. The foundation of the Pharmaceutical Society in 1841 gave coherence and direction to this new class of dispensers. The Society was incorporated by Royal Charter in 1843, and by a series of statutes it was given responsibility for the training, examination, registration and discipline of chemists and druggists, as well as for the enforcement of legislation controlling the sale of poisons. In effect, the chemists and druggists had become subject to statutory registration seventeen years earlier than the doctors. Membership of the Pharmaceutical Society remained voluntary until 1933. Thereafter, all registered chemists and druggists became members of the Society by virtue of registration. Since the Pharmacy Act of 1954 'registered pharmaceutical chemist' is their official description though 'pharmacist' is most commonly used.


The role of the chemists and druggists as dispensers had been further recognised by the 1911 National Insurance Act which made them responsible for the supply of most of the medicines for those treated under the Act. This was extended to the whole population by the National Health Service Act of 1946. Originally based largely on apprenticeship, the training of the pharmacist in recent years has become primarily academic. Entrance to the register is by way of a university degree in pharmacy or examination conducted by the Society following a comparable course.

Although the professional status of pharmacists and their exclusive right to sell scheduled poisons dates from the formation of the Pharmaceutical Society in the mid-19th century, pharmacists subsequently faced problems in maintaining and enhancing this status. The retail section of the pharmaceutical profession have found it difficult to exist without subsidy from the profit on other, non-pharmaceutical, activities such as the

sale of cameras and cosmetics.\* By comparison, for example, the recently formalised profession of ophthalmic opticians seems to have established a similar professional status more rapidly than have the older established dispensing pharmacists. Only in 1936 did the National Insurance Act make it illegal for an 'optician' to examine the eyes of a panel patient, unless he was on a list kept by the Ophthalmic Benefit Approved Committee. Qualification and registration of opticians was not finally established under a Central Professional Committee until the Second World War.

\*Both pharmacists and opticians established an interest in the sale of cameras and films. The former became involved because of the chemical aspects of developing and printing photographs; the latter through their expertise with lenses. Photography, like many aspects of pharmacy and optical work, now depends largely on industrial processes and products. It is specialised knowledge rather than specialist skills which are required by those who currently distribute photographic goods, and the wide range and specialised nature of modern cameras has tended to shift some of the camera business to dealers concentrating exclusively on photographic goods.





# THE PHARMACIST TODAY

IN contemporary society, pharmacists have six main fields of responsibility; in the manufacture of medicines; in their distribution; in ensuring their quality and safety; in teaching; in academic and industrial research; and as advisers on pharmaceutical matters, both to doctors and to the public. Others apart from pharmacists are also engaged in each of these activities but the pharmacists' influence extends far beyond the work they actually undertake. In 1963 there were about 20,000 pharmacists engaged in retail dispensing; about 1,700 in hospital pharmaceutical departments; 2,000 in the pharmaceutical industry; and 1,200 in other occupations, including teaching.<sup>2</sup>

Older pharmacists have seen two fundamental changes affecting their work. First, the mixtures, powders and pills prepared by the pharmacist in his dispensary were gradually replaced by compressed tablets and bulk mixtures, mostly produced in comparatively large manufacturing plants of wholesale druggists. These concerns, which were generally under the control of a pharmacist, supplied the needs of local pharmacies from their bulk production. The local dispensing pharmacist began to lose his role as a maker of medicines.

The second fundamental change followed the discovery of the first sulphonamides by industrial chemists in the 1930's. They proved that it was possible to find synthetic compounds which could kill bacteria without harming their host. If it was

possible to make chemicals with this therapeutic action, it seemed likely that other synthetic compounds might be discovered which would also be of value in medicine. Manufacturers therefore began to invest heavily in pharmaceutical research in the hope of finding such compounds, and a therapeutic revolution started.

This revolution gained a new impetus, in the early 1940's, with the demonstration by Florey and Chain of the vast therapeutic potential of penicillin. Within a few years, a group of chemical companies, mostly already familiar with deep fermentation techniques, succeeded in developing large-scale methods of growing and extracting the mould. Other antibiotics, which could be produced by fermentation processes and by chemical synthesis, were soon discovered.

Many of the companies who developed these new chemotherapeutic substances had no previous experience in making medicines. They had been dyestuff manufacturers, or producers of organic chemicals. It was only when the chemotherapeutic revolution occurred that they started to recruit pharmacists to assist in their new pharmaceutical activities. It has taken time to integrate the new pharmaceutical manufacturers with the traditional 'wholesale druggists'. Only now are they beginning to form a homogeneous industry, in which the role of the pharmacist can be clearly established.

## THE PHARMACIST IN INDUSTRY

Although research is the basis of the present-day pharmaceutical industry, pharmacists as such have not generally played a dominant part in the search for new chemical compounds. Some pharmacists have specialised in pharmacology and undertaken fundamental research; however, it is more often pure chemists, pharmacologists and other biological scientists who have been engaged on this type of work. Pharmacists, partly for historical reasons and partly because of the nature of their training, have tended to become involved at a later stage. However, this situation will probably change in the future because of the broader academic training which pharmacists are now receiving, and because of the general tendency for them to undertake more postgraduate research of all kinds.

Manufacture of modern medicines is divided into chemical and pharmaceutical production, which are usually organised

separately. The chemical production unit manufactures pure chemical substances and, in the main, it is under the control of chemists and chemical engineers. It is far removed from traditional pharmacy, and only, as it were, by accident have some pharmacists become engaged in this type of work. The second stage, pharmaceutical manufacture, is concerned with incorporating these chemicals into the preparations which can be administered to patients – ointments, tablets, capsules, injections or aerosol sprays, for example. This second stage – pharmaceutical processing – is the lineal descendant of the traditional pharmacists' work – the compounding of medicines. It is in this sphere that his influence has always remained dominant.

Although evolved from traditional methods, current pharmaceutical manufacturing processes and their control are far removed from the techniques of even fifty years ago. The art of dispensing has been almost entirely replaced by the science of modern production. Much of the work is mechanised, and most of the remainder can appropriately be carried out on production lines manned by semi-skilled labour. The role of the pharmacist in industry is no longer to carry out physical manufacture himself. He supervises and, more important, experiments to develop better pharmaceutical formulations for the future. The pharmacist has become more of a scientist and less of an artisan. This is the key to the changed role of the pharmacist in the second half of the twentieth century.

As medicines have become more powerful and more specific, the most careful consideration not only of the quantity of active ingredients but also of the exact formulation has become vital. The effectiveness and safety of a medicine may be substantially affected, for example, by the disintegration properties of the tablet, or by variations in the particle size of the active chemical. These variables, and the research into their clinical significance, are important aspects of modern pharmaceutical formulation for which a pharmacist is generally responsible. The many pharmacists who are engaged on research in the industry are more generally involved in development research concerning this stage of manufacture.

## THE PHARMACIST IN DISTRIBUTION

The chemotherapeutic revolution of the 1940's has had a profound effect not only on the manufacture of pharmaceutical

products but also on those who distribute them. Here, too, the pharmacist's manual skill has been largely superceded. Local manufacture in retail pharmacies has largely disappeared. The nature of pharmaceutical research and manufacture has inevitably resulted in a trend towards branded pharmaceuticals. The system of brand names ensures continuity of sales for the originator of a new product, and distinguishes between perhaps significantly different formulations of the same basic chemicals. More than two-thirds of National Health Service prescriptions are now written for branded medicines, and this trend has further altered the role of the dispensing pharmacist (*Fig. 1*).

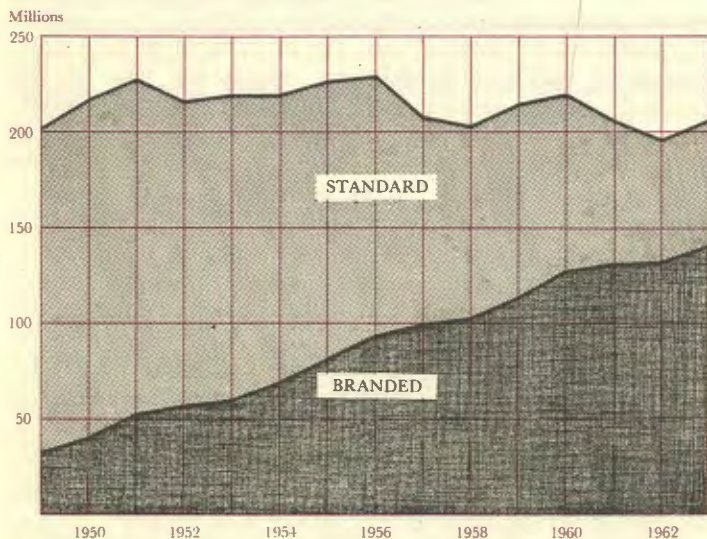
He can buy a formulary medicine from many different sources, and he must balance differences in price against quality. His assessment of the latter, if it is to be soundly based, requires considerable pharmaceutical judgment. When a branded medicine is prescribed the doctor has chosen a specified manufacturer's product. Under these circumstances it is the manufacturer who is primarily concerned to ensure the quality of the product, because it is his reputation, associated with that of the brand name, which is most at stake. The pharmacist has only to satisfy himself by inspection that it is in good condition when dispensed. The changing role of the retail pharmacist, which is discussed in more detail later, has made it appropriate that he should be regarded as 'a general practitioner in pharmacy' rather than as a retailer, and this is the description which has recently been adopted by the Pharmaceutical Society.

The same trends have affected both wholesale distribution and hospital dispensing. Progressive wholesalers have met the change by replacing their entrepreneurial skill, in buying at the best moment in the best market, by an efficient mechanised stock-keeping and distribution system. They still act as an important link between manufacturer and the local pharmacist, although they are judged nowadays by the promptness of their service rather than by comparisons of their prices. Wholesalers have to keep a range of many thousands of different products and packs, and are expected to deliver to the retail pharmacies within a few hours of receiving an order for any one of those. By so doing they can enable the patient to get the medicine prescribed for him without delay, even if it is an unusual treatment not commonly stocked in the local retail pharmacy. The wholesaler can also provide a clearing house for technical

7  
**FIG. 1**

Total number of prescriptions and estimated number of prescriptions for Branded products. England and Wales 1949-1963.

*Source:* Ministry of Health Annual Reports.



information, and some can now supply both pharmaceutical and pharmacological information about the products they handle.

Apart from being responsible for the distribution of medicines in hospitals, the hospital pharmacists have, up to the present, had two distinct roles in manufacturing. One, which they must undoubtedly retain, involves the production of special preparations which are required urgently, or for special purposes such as clinical trials. The other involves the manufacture of standard formulations, which are part of the hospital's routine requirements, but which are readily available from the pharmaceutical industry. The manufacturers of these products argue that such routine needs can generally be met more economically by the purchase of supplies manufactured in bulk by the pharmaceutical industry. This argument is gaining acceptance amongst hospital pharmacists, especially if they apply the same extensive routine quality control techniques as industrial manufacturers, and if they cost fully both their production and their quality control procedures.\* Some standard formulations can appropriately be manufactured in the pharmaceutical departments of large hospitals in order to help to absorb the overheads of equipment required for special formulations. However, in general, hospital pharmacists, like their colleagues in retail pharmacies, are less concerned with manufacture than in the past.

Nevertheless, the large quantities of medicines purchased by hospitals or groups of hospitals have given them more bargaining power and often enable them to buy at lower prices than individual pharmacies. This trend has developed with the system of regional contracting. In addition hospital pharmacists often have more influence over the prescribing patterns in hospital than retail pharmacists have, in the past, exerted on general practitioners.

### ENSURING QUALITY AND SAFETY

On the whole, therefore, pharmaceutical distribution has become divorced from pharmaceutical manufacture, and involves less commercial judgment in the buying market than formerly.

\*One production unit has estimated that the labour involved in quality control procedures costs about 3s. 0d. per 1,000 tablets for batches of 10,000; for batches of 500,000 the figure falls to about 1d. per 1,000.

The dispensing pharmacist's responsibility for ensuring the quality of the products he dispenses has also taken on a new character since the therapeutic revolution. Much emphasis has been placed on those activities and responsibilities of which the dispensing pharmacist has been deprived by the changes which have occurred. Too little attention has been paid to his new responsibilities and the new scope of his work.

An example of these is in the fields of quality control and the safety of medicines. The two are separate, though in some way related, concepts. There can be few areas where quality and safety are more important than in the manufacture and distribution of pharmaceutical products.

The safety of a medicine depends on eliminating as far as possible the chance that it may cause an adverse reaction in any patient to whom it is administered. In the main, this risk is minimised by pharmacological testing on animals, and carefully supervised clinical investigations. These studies measure the likelihood of undesirable or even dangerous reactions occurring, and allow the prescribing physician to balance any such risks against the benefit he expects from treatment. But, in addition, there may also be the risk that a small number of individuals may be unduly sensitive to a certain compound, and it is difficult to predict cases in which adverse reactions may occur as a result of this sensitivity. Thus, despite the extensive toxicity tests carried out or arranged by the manufacturers, absolute safety of medicines can never be guaranteed.

However, two particular dangers can be avoided, and in both the pharmacist can play a vital part. First, unnecessarily high dosage or prolonged administration may, in some cases, substantially increase the risk of adverse reactions. The pharmacist can advise prescribing doctors that smaller doses may be adequate and safer. They can also remind doctors of the dangers associated with prolonged administration of certain potent medicines, and discuss whether the hazards are justified by the benefits. Because the occasions when such advice is necessary will occur infrequently, it requires especial vigilance on the part of the pharmacist to take advantage of these opportunities to help to minimise risks. Apart from this, patients often question the practicing pharmacist as to whether they have received the right medicine if they experience early side-effects such as dizziness. This affords a good opportunity for the pharmacist to refer the patient back to the doctor, who

may use the symptoms as a guide in reassessing the treatment or modifying the dosage. The pharmacist's intervention in this way can, on the very rare occasions when a human error has occurred, provide an invaluable safeguard. More generally, pharmacists can be a useful source of background information on the safety of the medicines which they handle.

The second danger can arise because medicines sometimes become less safe when two or more are administered together, or when patients eat certain foods while undergoing treatment. Alcohol and cheese are among common items which can make some otherwise harmless medicines dangerous. It was a traditional charge on the pharmacist to know 'incompatibilities' which made it difficult or impossible to include particular combinations of drugs in a single mixture. It is now even more important that the pharmacist should recognise combinations of medicines which may be dangerous for the patient, and dispense them only when he is certain that the risks are fully understood and justified. In such cases as salicylate, alkali and nicotinic acid therapy, the doctor may not know that a patient is already buying and taking a proprietary medicine with similar ingredients to that prescribed. The pharmacist is in a good position to ascertain whether the patient is already taking a home remedy which might conflict with prescribed treatment. In these ways the pharmacist has a unique opportunity to make modern medicines safer.

On the quality of medicines, also, the pharmacist can have a profound influence. At the same time as the scope and techniques of pharmaceutical production have developed, the need for quality control has extended. Formerly, it was often sufficient to see that the right quantity of a drug was present, and that it was relatively unadulterated. Now, when the therapeutic action depends on minute quantities of a highly potent pure chemical, very much closer control is often necessary. Not only must the exact quantity be included, but it must be released from its tablet, or other vehicle, at the right speed, and perhaps in the right part of the body. In these cases, not only chemical but also physical tests must be adopted to ensure the optimum quality of the preparation.

The risk of potentially toxic impurities being introduced during chemical manufacture has also become greater. For this reason amongst others, quality control is now, in many cases, an integral part of manufacture, rather than a matter of tests



applied only after production has been completed. The importance of quality control is reflected in the introduction during 1964 of a Diploma in Pharmaceutical Analysis, following consultations between the Pharmaceutical Society and the Royal Institute of Chemistry.

Pharmacists are responsible for a large proportion of the quality control carried out within industry. They are also responsible for it in hospitals, where not only are tests carried out on supplies purchased from outside manufacturers, but there is also a growing recognition that it is necessary to carry out analytical tests on medicines prepared in the hospital itself. This trend reflects the higher standards of safety and quality which are now expected, both by the professions and by the public. However carefully medicines are prepared, their consistent high quality can often only be ensured by regular analytical tests on their physical and chemical properties both during and on completion of their manufacture.

The safety of medicines is already the concern of an independent Committee on Drug Safety which has been operating since January 1964. So far its closest liaison has been with the medical profession and the pharmaceutical industry. Once the Committee's primary concern with new products has become established as a routine, it might give more consideration to the role of the dispensing pharmacist in ensuring drug safety.

There are, at present, only limited arrangements for the independent evaluation of the quality of pharmaceutical preparations. In general, these consist of asking pharmacists to dispense test prescriptions, which are only subjected to comprehensive analysis if they are for formulary as opposed to branded medicines.

Most pharmaceutical manufacturers, whether selling branded or unbranded medicines, set standards for themselves which are often more stringent than those laid down in the British Pharmacopoeia and elsewhere. However, it has been shown that where low price is a primary consideration, as in some hospital supplies, there is a risk that some of the preparations purchased may be of poor quality. This has been used as an argument to support the need for comprehensive independent surveillance on pharmaceutical quality. The majority of manufacturers should welcome this as a deterrent to those who at present are tempted to sacrifice quality in order to sell at low

1900  
prices. There has been some debate about the role of the pharmacist in the independent supervision of quality control. It would seem appropriate that whether this is the responsibility of the public authorities or the Pharmaceutical Society, the pharmaceutical profession should play a major role in providing for this further safeguard.

### THE ACADEMIC PHARMACIST

It is in teaching and academic research that pharmacy has undergone the most dramatic transformation in the past fifteen years. Until the early 1950's, most pharmacists took the Chemist and Druggist qualification, which from 1928 onwards required two years full-time study – one year leading to an intermediate examination, and one year for the post-intermediate qualifying examination. In 1952 it became compulsory to take the longer Pharmaceutical Chemist qualification, requiring at least a one-year course to reach intermediate level, and a further two years to qualify. From 1958 onwards, the subjects previously covered in the intermediate examination were included in the entrance requirements of the schools of pharmacy, and the qualifying course was extended to three years. Therefore, within a decade, the minimum period of post-intermediate academic training required to qualify as a pharmacist was extended from one to three years.

Although about 70 per cent of all pharmacists practising in 1963 took the former Chemist and Druggist examination,<sup>2</sup> the younger men and women now entering the profession have had three years scientific training at degree level. This change has been exemplified by the growth of university schools of pharmacy awarding B.Pharm. degrees, and by the fact that the schools of pharmacy in the colleges of advanced technology are being raised to university status. Eleven of the seventeen schools of pharmacy in Britain are either in universities or have university status.

In the same way, before the 1950's there was little systematic research undertaken in the schools of pharmacy. Even as recently as in the period between 1957 and 1959 there were only five schools which published more than six research papers. For the remainder, research was confined mainly to the work of a small number of post-graduate students.<sup>3</sup> Up to that time nearly all the important research had been under-

taken by the pharmaceutical manufacturers.

Since then there has been a steady growth in academic pharmaceutical research. This covers pure chemical research (the search for new medical chemical compounds, and methods of synthesising them), pharmacognosy (especially the isolating of the active ingredients from both old and new medicinal herbs and from other naturally occurring substances), pharmacology (studying the mode of action and the eventual fate of medicinal chemicals in animals and men), pharmaceuticals (improving formulations, methods of administration and storage properties of pharmaceutical preparations), physical pharmacy (the fundamental study of physical systems involved in pharmacy, such as powder compression) and pharmaceutical analysis and quality control.

Many of the schools of pharmacy are now well equipped with the expensive instruments which are required for pharmaceutical and biochemical analysis, and they have modern pilot-scale manufacturing plant similar to that used in the development departments of the pharmaceutical manufacturers. These changes are another indication of the emergence of pharmacy as an applied science. More attention is now paid to the theoretical aspect of the formulation, administration and safety of medicines, and to research into these subjects. Many of the pharmacists trained in this academic environment are unwilling to work in the style of retail pharmacy which grew up under the former system of training. They question the extent to which it is necessary and desirable for scientifically trained pharmacists to spend their time and energies on the general business and trading problems common to most small retail establishments.

On the other hand, pharmaceutical training does also cater for the fact that pharmacists do generally have to have a knowledge of the skills required in any business activity, such as costing and accountancy. The commercial training they receive is not only of value if they go into the general practice of pharmacy, but can also be helpful if they eventually go on into the broader field of general management. This happens in pharmacy as in other professions. In the larger retail pharmacies, for example, the pharmacist may have assumed the role of general manager rather than being primarily concerned with his professional activities. In the pharmaceutical industry, also, Membership of the Pharmaceutical

Society is one of the wide range of scientific qualifications which is found amongst the directors and senior managers.

### THE PHARMACIST AS AN ADVISER

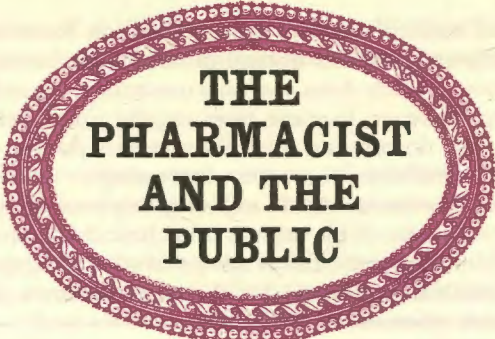
One of the most important aspects of modern scientific progress is communication. The sheer volume of the new knowledge in medicine, as in other fields, has created a substantial problem. In the past, difficulties in medical treatment usually centred on the inadequacy of available medicines and surgery. Now, an increasingly important task is to see that the potentialities and limitations of recent advances are generally understood. The latest preventive and therapeutic measures should be put into practice as soon as their value has been established. They should be used whenever appropriate; and they should never be misused. Although it is easy to state these principles, the rapid rate of discovery of medicines, and of the development of new medical and surgical techniques, has made them difficult to apply.

Some of the most dramatic discoveries have been in the pharmaceutical field. The power of modern medicines to do good is enormous, but misapplied they can also do much harm. The pharmacist plays a very important part in disseminating the necessary information about both old and new medicines. He is able to encourage their careful use and at the same time discourage their unwise administration and misuse. Although the latter is a more sensational task, and one which attracts more attention, it is the former which is more needed and can do more to improve the health of the nation.

Although pharmaceutical manufacturers always enlist the help of doctors in compiling the information to be disseminated about their products, it is the pharmacists in industry who are responsible for much of the preparation of technical literature. Also, though by no means all, medical representatives working for the pharmaceutical industry are qualified as pharmacists, their training and technical information is usually provided by pharmacists as well as doctors. Almost half of the 2,000 pharmacists in industry are involved in marketing or representation.<sup>2</sup>

In addition, both in hospital and in general practice, pharmacists can act as a link between the pharmaceutical manufacturers and the prescribing doctors. Hospital doctors

or general medical practitioners can call on them for details about different products instead of necessarily having to seek information directly from the pharmaceutical manufacturers. This may, however, in some cases require a new relationship between the doctor and the pharmacist. As the range of available medicines becomes increasingly complex and specialised, the doctor should expect to rely increasingly on the pharmacist as one of his sources of technical information and advice. Unfortunately, this is not yet always recognised either by the medical profession, by the manufacturers or by the pharmacists themselves.



# THE PHARMACIST AND THE PUBLIC

THE problem of understanding the role of the pharmacist in the 1960's is sharply reflected in his relationship with the general public. At the time when apothecaries were still prescribing and dispensing, the chemists and druggists grew up as professional shopkeepers and retained this role into the twentieth century. Their only qualification for giving general advice on health matters was the experience gained during years of handling their pharmaceutical wares. The new generation of pharmacists, despite three years of academic training on subjects such as chemistry, physiology and pharmacology, have to a great extent inherited the mantle of their tradesmen predecessors. The public, who generally see the pharmacist behind the counter, must often think of him more as a shopkeeper than as someone engaged primarily in the field of medicine.

Other professions – accountants, doctors, lawyers and teachers – work and give advice in more 'professional' surroundings. In many overseas countries pharmacists, also, distribute medicines from establishments which bear little resemblance to other types of retail premises. Yet even in those countries the pharmacists have to live, as do those in Britain, by selling their medicines. How should the trading activities of the pharmacist be reconciled with their professional training and status? Should there, in fact, be any distinction between the pharmacist who earns his living as a retailer and the more 'professional' pharmacist working in hospital or in a university?

The situation created by the changing nature of pharmacy has been accentuated by the changing pattern of retail distribution as a whole in Britain. In all branches of retailing the small shopkeeper has found it increasingly difficult to compete with the large stores and supermarkets. The high rents in re-developed shopping centres have resulted in many of the best trading sites being occupied by the large multiple chain-stores. Small independent retailers of all types are tending to lose their share of the market, and this has aggravated the economic problems of the independent pharmacist. The average general practitioner in pharmacy has traditionally had to supplement his pharmaceutical dispensing business with other types of trading activities. Owing to the conditions under which pharmacy has developed in this country, Britain has a larger number of pharmacies in relation to its population than many other European countries (*Fig. 2*). Even before the present pressures on the independent shopkeeper, sales of pharmaceutical preparations by themselves were unable to provide a reasonable living for the pharmacists.<sup>4</sup>

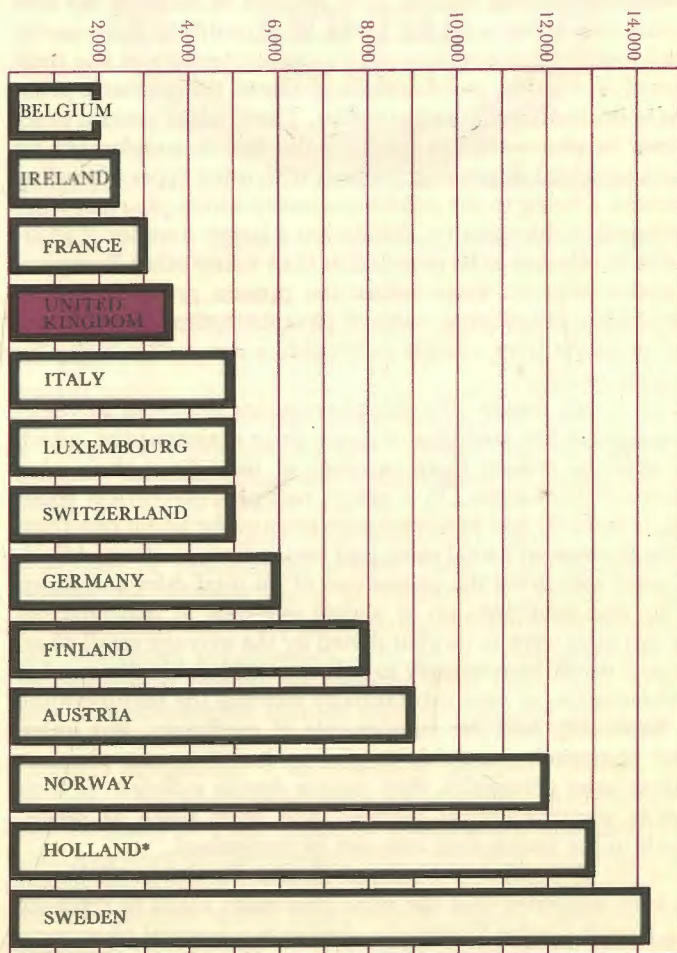
This is one reason why the pharmacists protested so vigorously against the abolition of resale price maintenance, which will tend to reduce their earnings at least from their non-pharmaceutical sales. On average, non-pharmaceutical goods such as cameras and cosmetics now account for about one-third of the pharmacist's total sales, and tonic wines, medicated foods and such like bring the proportion of his total sales accounted for by non-medicines up to almost one-half. If non-pharmaceutical sales were to be abandoned by the average retail pharmacy, it would be necessary to reduce considerably the number of pharmacies, or very substantially increase the remuneration for dispensing and the counter-sale of medicines. But unless retail pharmacists are able to give up handling non-pharmaceutical sales personally, they cannot devote sufficient of their time to pharmaceutical matters, and their place as professionals in the health field may not be recognised.

For the dispensing of National Health Service medicines, it has been suggested that the retail pharmacy could be replaced by a Health Centre dispensary, similar to a hospital pharmacy. There may be some place for such establishments, but they could never satisfactorily replace the existing type of independent pharmacy. Pharmacists have an important part to play in distributing and advising on non-prescribed medicines, and

FIG. 2

Estimated population per pharmacy in various countries 1962.

Source: 'The Economic Future of the Pharmacist'. *Pharm. J.* 1964, 1, 395.



\*A large proportion of medicines in Holland are sold through 'drug stores' instead of pharmacies.



other health goods, such as bandages or medicated toilet preparations which the public will always continue to require. Non-prescribed medicines at present account for about one-third by value of all medicines used in Britain. Not only does this relieve the Health Service of a considerable financial burden, but it also helps to prevent unnecessary calls on the medical profession, and can contribute to the health of the community.

Not all medicines are sold by pharmacies. Some non-prescribed medicines, such as tablets to prevent sea-sickness and analgesic tablets containing codeine, are restricted to sales through pharmacies by law. In other cases the manufacturers choose to make their products available only to pharmacists. However, a third category, including many of the widely advertised household remedies, are available from both pharmacists and other types of retail outlet, often including vending machines. By value, probably almost half the broad range of non-prescribed 'health goods' go through supermarkets and other non-pharmaceutical outlets.

The desirability of as large a proportion of medicines as possible being distributed through pharmacies has been used as a strong argument in favour of their retail prices being maintained. The pharmacist is less able to indulge in price-cutting than the supermarket. If supermarkets were permitted to cut pharmaceutical prices it seems almost inevitable that they would gain a larger proportion of the sales of self-prescribed medicines. This would not only further aggravate the economic problems of the pharmacist, but would mean that the pharmacist had less opportunity to exercise his professional skill in advising people when they purchase their own medicines.

The balance of public interest may well lie in the public paying a higher price to obtain their medicines from a pharmacy rather than being tempted to purchase them at a lower price from a supermarket. However, this in turn depends on the retail pharmacist actually spending a substantial proportion of his time in contact with the public, rather than remaining in his dispensary. One way to make this possible would be the elimination of the present time-consuming practice of dispensing tablets out of a manufacturer's large container into many small ones for the individual patients. Instead, the retail pharmacist could adopt the continental practice of dispensing a manufacturers' small original pack to the patient whenever this

is possible.\* This would make dispensing more efficient, and would allow the pharmacist to concentrate on more professional activities than counting tablets.

The pharmacist who is able to spend much of his time in contact with the public can play an important part in the health education of the community. Such education can encourage people to avoid many health hazards, such as smoking or over-eating; it can advise people with early symptoms of possibly serious disease to seek medical attention; and it can encourage people to make wise use of the broad range of health services – and to avoid their misuse. In this last area – especially as it concerns the use of medicines – the pharmacist may have more opportunities than anyone else to educate the public.

At present the Central Council for Health Education works mainly through the Local Health Authorities, who have also been responsible for much of the preventive medicine and many of the campaigns for early diagnosis in this country. A large proportion of the public generally have no occasion to visit the local authorities' clinics. Therefore considerable publicity has been necessary to get people to attend, for example, in order to have their chest X-rayed, or to be immunised against diseases such as diphtheria and poliomyelitis. Where, alternatively, as with programmes of diabetes detection, voluntary workers have taken the test kits to the public in their homes, considerable costs have been involved. The health education programmes to emphasise the dangers of cigarette smoking seem to have had little impact so far in reducing smoking.

Thus there are substantial arguments, on the grounds of efficiency and economy, that both health education, and early diagnosis, should make use of already established contacts between the public and the professions responsible for medical care. One of the most frequent of these which has been largely overlooked in this context is the contact between the public and their pharmacy. Apart from its potential role in health education – displaying posters and distributing leaflets – the pharmacy could be a centre either for conducting tests for early diagnosis, or else simply for distributing and collecting simple do-it-yourself diagnostic aids, such as glucose oxidase strips

\*It is required by law that all branded medicines should be dispensed in an original manufacturers' pack in Belgium, France, Norway and Sweden and the same is true for 'pharmacist only' preparations in Germany. In Britain, on the contrary, the pharmacist is required under the National Health Service to dispense from a pack size which is related to his total demand for the particular medicine.

with which the patient can test their own urine for the presence of sugar.

It may well be that in the future some pharmacies will have a small room set aside for sessions during which presymptomatic tests could be conducted by the Local Health Authority or even hospital medical staff. Simple 'health tests' could be carried out at the pharmacy in the same way as 'eye tests' are carried out at the optician. Clearly such developments would have to have the support of the general medical practitioners, the Local Health Authorities and the public. From the point of view of the pharmacy, the advantages could be considerable. These broader health services which the pharmacist could offer would attract more customers into the pharmacy; and conversely, the more successful the business, the greater the number of people who would be likely to take advantage of the early diagnostic or health education facilities provided.

The pharmaceutical profession does not wish to repeat the early history of the Society of Apothecaries, when the physicians and dispensers became involved in rivalry and conflict. Pharmacists therefore feel that they should not be responsible for giving specific medical advice to the public.\* Nevertheless, without in any way conflicting with the role of the general medical practitioner, the pharmacist can make an important contribution as a professional member of the health team. At present only a minority of people who feel unwell consult a doctor.<sup>5</sup> Many of the others will be seen by the pharmacist, who may not only provide a medicine for home treatment but, if appropriate, should advise the patient to seek qualified medical advice.


It has been pointed out that "the 'usual condition of health' of the great majority of individuals is not one of complete physical wellbeing, a point recognised by physicians from Galen onwards. Headache, dizziness, indigestion and constipation are for a great part of the population chronic complaints, or so frequent that for the individuals concerned they comprise part of the 'usual condition of health'. Means of relieving these incidents, essential if normal activities are to be maintained, are

\*Conversely, some pharmacists in general practice feel that too many doctors are entitled to do their own dispensing, under the National Health Service. At present a doctor in a rural area (providing the patient requests him to do so) may dispense National Health Service medicines if the patient lives more than one mile from a pharmacy. They feel that this distance from a pharmacy does not necessarily involve inconvenience for the patients, and they would like to see permission granted less frequently.

usually identified in early life. For these persons, the unusual severity or duration of the familiar symptom on any occasion in later life may be as clear an indication to seek medical advice as would be the development of a new symptom in an individual previously in a perfect state of health."<sup>6</sup> Many people who have had a chronic or recurrent condition diagnosed by their doctor feel it unnecessary to get a prescription from the doctor each time they require more medicine. If the doctor has given them only general instructions to take a mild analgesic, for example, they are better seeking the advice of the pharmacist instead of relying on their own choice of preparation. Under the National Health Service, the existence of a small prescription charge has probably encouraged patients to purchase 'household' medicines from the pharmacist in this way, instead of taking up their own and their doctors' time in obtaining them through the National Health Service.

Before the advent of the National Health Service, the baby scales in many pharmacies provided the basis for a form of post-natal welfare service, and 'counter prescribing' was often an important part of the pharmacist's work. Since then, medicine has become more scientific, more freely available, and more extensively organised. Nevertheless, there is still a vast hinterland of minor unwellness for which the formal Health Services cannot and should not attempt to cater. The public is immeasurably better off seeking advice from the pharmacist for these minor deviations from complete physical wellbeing, instead of - as they often do at present - relying on advice from their friends, from newspapers, or from television. In the context of the National Health Service the general medical practitioners are likely to be able to give more attention to those who need it most if their patients get into the habit of discussing health problems with their pharmacist. The professional is much more likely than the layman to know whether a patient really needs to consult his doctor or not. Both unnecessary visits to the doctor and undue delay in consultation should be reduced, if the public seeks more advice from the pharmacist.

(Footnote) Some pharmacies in general practice in Great Britain are entitled to their own dispensing under the National Health Service. At present a doctor in a rural area (providing the patient requires him to do so) may dispense National Health Service medicines if the patient lives more than one mile from a pharmacy. This has not the same effect as a pharmacy does not necessarily involve convenience for the patient, and they would like to see Parliament raised his facilities.



# THE FUTURE OF THE PHARMACIST

IT seems that the general practice of pharmacy must continue to develop, both to take account of the new trends in retail distribution, and to take account of the higher academic qualifications of the pharmacist. The professional and business interests of pharmacy must always remain complementary, so that there should be no conflict between the professional and trading activities of the pharmacist. The more customers coming onto the premises to make a purchase, the more will be able to benefit from the professional advice available on health matters. The more who seek to take advantage of this advice, the more potential customers will come into the establishment. Some pharmacies may concentrate primarily on providing a comprehensive pharmaceutical distribution and advisory service, with several qualified men and women on their staff. It would be appropriate for such pharmacies to be located close to group medical practices where these exist. This would not only be convenient for the patients but would also facilitate regular consultation between the medical and pharmaceutical practitioners. Other pharmacies may continue to adapt to the modern style of retailing with establishments having not only pharmaceutical departments, but also dealing in a wide range of other goods. The training of the pharmacist will enable him both to supervise the pharmaceutical department, probably with qualified assistant staff, and to manage the unqualified staff handling the other types of goods.

Small pharmacies, in which the proprietor must spend a considerable proportion of his own time handling non-pharmaceutical sales, will probably become less common. As a result the total number of pharmacies will continue gradually to diminish, as it has been doing in recent years (*Fig. 3*). In some districts, however, especially in the rural areas, the closing of smaller pharmacies can cause serious inconvenience to the public. This problem could be overcome by providing financial incentives for the rural practice of pharmacy. This would be similar to the way in which doctors already have special incentives to practice in underpopulated areas. It is also likely that some rural pharmacies will continue to act as general stores, meeting many of the needs of the local community. In towns, however, the rationalisation of the number and distribution of pharmacies can be expected to continue.

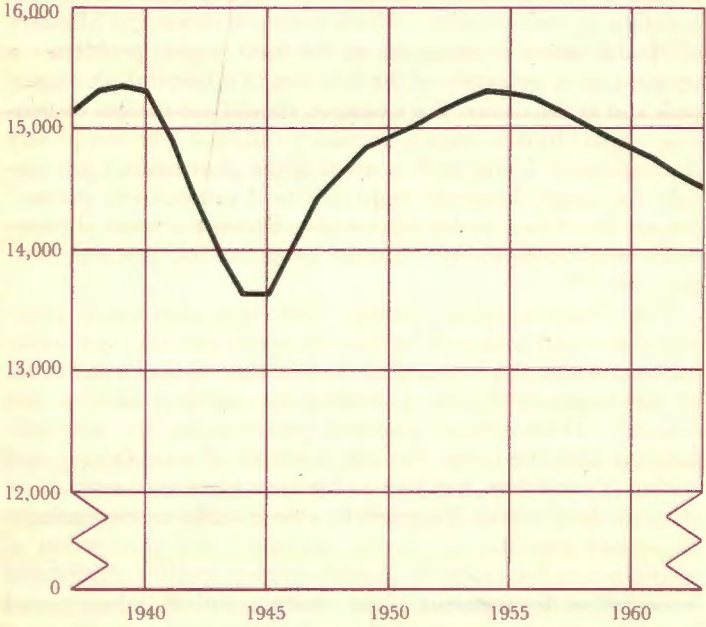
The personal disturbance caused to the proprietors of the smaller retail pharmacies by this process will to some extent be ameliorated by their age pattern. In 1963, 68 per cent of male pharmacists in retail pharmacy were over the age of forty-five; in the years since 1939 smaller numbers have entered the profession, and a larger proportion have gone into industry.<sup>2</sup> In the future, larger numbers of pharmacists may be engaged in academic and industrial research, and be employed in the production and information departments of the pharmaceutical manufacturers. This would result from the continually expanding research effort aimed at finding better and safer medicines, and from the need for more comprehensive information about their proper use in practice.

Hospital pharmacy faces special problems at present, largely inherited from the pre-National Health Service days. Although the remuneration of hospital pharmacists has risen more rapidly than earnings from retail dispensing, the maximum salary for chief pharmacists in the largest hospitals, unless they are entitled to special allowances, is only about £1,700 a year. This scale of salaries appears to be too low to attract young men into this branch of the profession as a career. More than half the hospital pharmacists are female, and two-thirds of the men are over the age of forty-five.<sup>2</sup> One effect of the present shortage of hospital pharmacists has been to make it increasingly necessary for medicines for out-patients to be dispensed by retail pharmacies, instead of in the hospital. The only solution to the present shortage seems to be to raise hospital sal-

**FIG. 3**

**Number of Registered Pharmacies. Great Britain 1937-1963.**

*Source: The Pharmaceutical Society.*



aries until they attract sufficient pharmacists, and offer reasonable career prospects. Some of the increased cost of these high salaries might be met by a rationalisation of the pharmaceutical services in hospitals, for example, eliminating uneconomic manufacture and streamlining dispensing procedures. A similar need for reappraisal was suggested at the 1964 British Pharmaceutical Conference: "Quite apart from the question of remuneration - which everyone except the Ministry of Health seems to recognise as the most urgent problem - a reappraisal is necessary of the function of a hospital pharmacy now and in the future. For example, should out-patient dispensing - apart from a certain necessary residuum - be completely discontinued? Is the work-content of the pharmacist's job outside the larger hospitals satisfying to a professional person? Should there be a closer relationship between schools of pharmacy and hospitals for teaching programmes, research projects, etc."7

The Pharmaceutical Society, and those that teach pharmacy, are well aware of the present needs, and they are training and examining young pharmacists able to take a full share of the responsibility for providing the medical care in this country. These newly qualified pharmacists are not only familiar with the latest scientific methods of manufacture and testing of medicines, but also understand more than ever about their mode of action. They will be able to make an increasingly important contribution to the discovery and production of medicines, in the research, manufacturing, quality control and information departments of the pharmaceutical industry, and by undertaking research in the universities and colleges.

It is important that pharmacists recognise the need to cast off the mantle of their artisan predecessors and take a more active part in providing information and advice about the medicines which they handle. This may not be easy because many of the pharmacists now practicing were trained before the recent rapid advances in new knowledge on pharmacy and pharmacology. The medicines now in general use did not exist when they qualified. This problem is by no means unique to pharmacy, or to our present time; but the very rapid advances in therapeutics and in pharmaceutical training since 1950 mean that it is especially important that the older pharmacists should recognise the rising status of pharmacy as a whole. Both those organising the Health Service, and the public at



large, must acknowledge the modern scientific role of the pharmacist. Whether involved in teaching, in manufacturing, or in the distribution of medicines, the pharmacist is entitled to recognition as an important member of the health team. The long historical standing of pharmacy as a profession should be fully recognised in fact as well as in name.

## REFERENCES

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- <sup>1</sup>Millerson, G. 1964. *The Qualifying Associations*.
- <sup>2</sup>Pharmaceutical Society. 1964. *Manpower Position in British Pharmacy*.
- <sup>3</sup>Earles, M. P. 1960. 'Research in Schools of Pharmacy 1949-1959.' *Pharm. J.* 1960. ii. 5.
- <sup>4</sup>Teeling-Smith, G. 1964. 'The Economic Future of the Pharmacist'. *Pharm. J.* 1964. i. 395.
- <sup>5</sup>O.H.E. 1964. *New Frontiers in Health*.
- <sup>6</sup>Dukes, M. N. G. 1963. *Patent Medicines and Autotherapy in Society*. University of Leyden.
- <sup>7</sup>Grainger, H. S. 1964. 'The Manpower Survey and Future Needs for Pharmaceutical Manpower: Hospital Aspects'. *Pharm. J.* 1964. ii. 316.



THE Office of Health Economics was founded in 1962 by the Association of the British Pharmaceutical Industry with the following terms of reference:

1. To undertake research to evaluate the economic aspects of medical care.
2. To investigate, from time to time, other health and social problems.
3. To collect data on experience in other countries.
4. To publish results, data and conclusions relevant to the above.

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THE APOTHECARY.