An Address

ON

THE ART OF PRESCRIBING.

DELIVERED BEFORE THE ST. MARY'S HOSPITAL
MEDICAL SOCIETY.

BY

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THE decline in the art of prescribing is a subject which has given me cause for much painful reflection for several years, and it is one which, in my opinion, affects very closely the welfare of the public as well as the usefulness and dignity of the medical profession. I think there cannot be the slightest doubt that the art of prescribing—that is, of ordering suitable remedies in suitable forms for the treatment of morbid conditions—is declining, and that this very important function of the medical man is being replaced by what I consider to be the slovenly habit of writing an order for some proprietary preparation or for some compressed form of drug, and then dignifying such an order with the title of a prescription. There is, I think, a tendency at the present time, in this era of brilliant discoveries in medicine, pathology, and bacteriology, and in this age of splendid advances in surgery, to neglect the treatment of common and minor ailments by drugs. Let me, however, impress upon you that in the treatment of such ailments lies the principal part of your work as medical practitioners, and that the gauge by which your success in practice will be mainly measured, and the esteem in which to a great extent you will be held by your patients, will depend upon the success you attain in the treatment and cure of what may superficially appear to be but trifling ailments, but which, none the less, as departures from ordinary health, are naturally considered by the individual sufferers as important, and therefore as deserving the careful attention and the skilled therapeutic resources of the medical man.

There is a tendency nowadays to adopt a sceptical attitude as to the utility of drugs, to regard them as mere placebos. It is an attitude which I have specially observed in those who have neglected to acquire any thorough knowledge of the use of drugs and of their methods of correct administration. Do not be over-influenced by the brilliant work that has been done, and is still being done, in the inoculation departments of this and other hospitals. While pleading for greater attention to the art of prescribing, I have no intention of questioning the usefulness of inoculation treatment, since I am fairly constantly employing it in my own department of work, and am therefore well acquainted with its utility in certain diseases. But it is a method of treatment which has its limitations, and you will find, when you are in general practice, that the great bulk of the ailments you will be called upon to treat are not cases for inoculation treatment, but require the prescription of drugs.

In my opinion, the main reasons for the present decadence in the art of prescribing are the altogether inadequate attention given to the teaching of the subject by the majority of the members of the staffs of the various teaching hospitals, and the scanty test applied by so many of the examining bodies as to the possession of a knowledge of rational prescribing on the part of candidates presenting themselves for the final examinations. The want of attention to the teaching of the subject in our large hospitals is certainly in some measure due to the over-pressure of work consequent on the number of patients that have to be seen and treated in a given time—an over-pressure which necessitates, to some extent, the ordering of medicines already prepared according to some formulæ in the hospital pharmacopœia. The prescribing of these ready-made medicines undoubtedly saves the time of the physician or surgeon and of the dispenser, but, unfortunately, the outcome of the custom of ordering ready-made mixtures, etc., is that the students soon fall into the habit and carry it with them into private practice. Consequently they have no opportunity of acquiring confidence in their own powers to write a useful prescription, and so fall a ready prey to the tempta-

tions offered them by manufacturers to prescribe some ready-made proprietary medicine or some form of a compressed drug. It has been stated that the hospital practice of ordering mixtures, pills, etc., by the titles under which they appear in the hospital pharmacopœia is not detrimental to the acquisition of a knowledge of correct prescribing, since the student can always refer to the pharmacopœia for information as to the composition and strength of the medicine ordered. I, however, strongly maintain that the information so obtained is in no sense comparable to the educational advantages of hearing the dictation of a prescription in full. There is no better method of acquiring a knowledge of correct dosage, and of the avoidance of incompatible ingredients, than by hearing the physician or surgeon dictate his prescription, comment on the dosage of the ingredients, and give his reasons for the employment of such ingredients. On the other hand, if it is left to the student to look up the composition of a medicine from the hospital pharmacopœia he is apt to forget to do so, and certainly he can never in that way either acquire a tithe of the knowledge or retain the information so well in his memory, as by hearing the dictation of a prescription in full.

There is a growing practice which is rapidly threatening to undermine to a great extent what I consider to be the skilled and rational employment of therapeutic agents in the treatment of disease. I refer to the too general use of powerful drugs in compressed forms and of proprietary preparations. I do not for one moment wish to suggest that the various forms of compressed drugs have not their proper uses; undoubtedly lamellæ and tabellæ of active principles in the hands of medical men are most convenient and useful for hypodermic and occasionally for other forms of administration; but it is the ready facility with which powerful drugs prepared in this form are obtained by the public which constitutes so grave a danger, a facility which is responsible to a great extent for the increasing practice of self-drugging—a state of affairs which I am afraid has been brought about by these preparations being so indiscriminately and so largely prescribed by medical men. Equally bad is the use of some of the proprietary preparations which are so speciously puffed, and with the samples and laudatory advertisements of which we are so profusely deluged, tempting the medical man as they do to the enervating habit of thinking that the writing of an order for such a preparation is the writing of a prescription, and gradually rendering him absolutely impotent to exercise the true art of prescribing. What a travesty on the art of prescribing it is for a patient to be given a so-called prescription which merely orders, say, No. 4 Mixture (Smith and Jones)! Can anything be more degrading than the spectacle of a duly qualified medical man lowering himself to be the mere exploiter of a puffed and probably over-vaunted preparation? It appears to me that such so-called prescribing is nearly on a par with the dosing that is carried out on those ships which carry a medicine chest but have no surgeon on board. The bottles of medicine in the chest are duly numbered, and with them is a book describing the symptoms which require a dose of such-and-such a numbered mixture. Many of you may remember the tale of the ship's steward who went to the captain stating that a sailor had some symptoms which, according to the book, required a dose of No. 9 mixture, but that No. 9 bottle was empty. "That does not matter," said the captain, who in the emergency almost rose to the level of many a modern prescriber, "give him equal parts of No. 4 and No. 5."

There is another aspect of this subject to which I wish to direct your attention. The practice of writing an order for a particular form of compressed drug, or for a proprietary preparation—for I cannot dignify such an act as the writing of a prescription—is apt to encourage patients to recommend such proprietary articles to their immediate friends who, in their opinion, are suffering from similar symptoms or from what they imagine to be a similar complaint. I need scarcely point out to you that what has been ordered as suitable treatment for A. may be remarkably bad for A.'s friends, and may be productive of serious harm to them. Moreover, to look at the matter from another point of view, by giving your patients the opportunity of recommending these proprietary articles to their friends, you are simply playing into the hands, and the pockets, of the manufacturers of those preparations.

You may, perhaps, say that if you write an orthodox prescription for a medicine the patient is just as likely to recommend that to his friends. As an actual fact my experience is that such is not nearly so likely to occur as when a patient can name a proprietary article which can be readily purchased of any pharmacist or at any drug store.

It is simply appalling to witness the habit that has grown up of people keeping in their houses and carrying about in their dressing-cases compressed forms of powerful drugs which they employ to relieve pain, either by taking them internally or by hypodermic administration, quite losing sight of the fact that the removal of the cause of the pain is much more important than the removal of the pain itself. Moreover, the temporary relief of pain frequently prevents the sufferer from seeking medical advice until the diseased condition which is the cause of the pain has become thoroughly established, and, therefore, more difficult to cure. In addition, the facility with which these forms of compressed drugs can be obtained and administered encourages that most evil of habits, the taking of narcotic drugs. Let me strongly advise you never to prescribe drugs of a sedative nature, such as antipyrin, antifebrin, etc., by such names, but by their scientific terms. For instance, order antipyrin as phenazone, antifebrin as acetanilide, and so on. In addition, never order them in compressed forms, but prescribe them to be taken in cachets or as powders. It is frequently my fate in my private consulting-room for patients to present for my inspection and supposed edification the so-called prescriptions of some of the very minor lights of medicine. These documents are frequently mere orders for some proprietary preparation possessing an outlandish name, the composition of which is generally absolutely unknown to the prescriber, whilst for its supposed therapeutic effects he has to depend on the statements of the manufacturer of the article. These orders are to me sad illustrations of the ease with which the writers have departed from the path of therapeutic righteousness—across each one there appears to my mental eye written the word "Ichabod." On the other hand, it has frequently been my privilege to see the prescriptions of one who certainly ranks amongst the greatest and most scientific of physicians that in the past graced the staff of this hospital, and it is at once apparent that each prescription has been carefully thought out and adjusted to the individual needs of the patient. To me these prescriptions, which are never debased by an order for a proprietary medicine, are grand therapeutic lessons.

What are the factors, then, which make for success in the art of prescribing? I will place them before you in the following groups: (I) A sound acquaintance with the therapeutic uses of drugs. (II) A thorough knowledge of the doses of drugs. (III) The avoidance of the mixing of drugs that are incompatible. (IV) The administration of drugs which are nauseous or distasteful in such a form or combination as to be palatable to the patient.

I. Knowledge of Therapeutic Uses.

It is unnecessary to insist on the importance of a sound acquaintance with the therapeutic uses of drugs as an essential preliminary to the art of prescribing, but I am not a believer in a medical man making use of a large number of drugs. Speaking for myself my armamentarium of drugs is purposely a comparatively limited one, but then I know them thoroughly, their action, their uses, and their doses. By all means give new remedies a fair trial, but do not be too prone to abandon old and proved drugs for new ones. In this respect you may well take to heart the advice given by Polonius—

Those friends thou hast, and their adoption tried,
Grapple them to thy soul with hoops of steel,
But do not dull thy palm with entertainment
Of each new-hatch'd unfledged comrade.

You will find when you are in practice that in the *British Pharmaceutical Codex* you have a work that will be of inestimable value in maintaining your prescribing at the highest possible level. It is a book that contains many useful formulae, and especially I would direct your attention to its incomparable collection of formulae for nebulæ or sprays.

II. Knowledge of Doses.

A thorough knowledge of the doses of drugs is essential to success in the art of prescribing. Learn your doses well. Many medical men shirk writing prescriptions because they are in doubt about the doses, and so fall back on the employment of proprietary preparations. Here I am in complete accord with the plea recently put forward by Dr. Leftwich as to simplification of doses. To remember, for instance, the different doses of the various tinctures in the *British Pharmacopoeia* is a great burden to the medical man, and there is no reason why the great majority of the tinctures should not be made of such a strength as to possess the same dose. Inability to remember the proper dose of a drug has sometimes led to the omission of the most suitable preparation, and on some occasions has even caused the death of the patient.

III. Incompatibles.

A successful combination of drugs demands not only a knowledge of their therapeutic action, but also of their chemical properties, in order to prevent the mixing of drugs which are incompatible with one another, unless such combination is deliberately intended in order to produce a new remedy. It might be contended that the question of incompatibility could be entirely avoided by prescribing in a medicine a single drug, but as against the use of a single drug it must be remembered that the combination of a drug with other drugs possessing a similar mode of action powerfully increases the action of the remedy. The following are illustrations of the more important drugs that are incompatible:

1. Acids and alkalis, including the carbonates and bicarbonates, should not be prescribed together, unless it is intended that they should be mixed at the moment of administration in order to make an effervescing mixture. This is an easy rule to remember, but all the same mistakes not uncommonly occur. For instance, in the treatment of chronic bronchitis ammonium carbonate and some preparation of squill are frequently and usefully prescribed together, but it should be remembered that the preparation of squill that should always be employed in such a mixture is the tincture, since the acetum, the oxymel, and the syrup all contain acetic acid. Again, aspirin should not be prescribed with an alkaline carbonate or bicarbonate, as I have frequently known it to be, since it is the acetyl-salicylic acid, and undergoes decomposition associated with effervescence if mixed with such drugs.

2. Alkaloidal solutions should never be prescribed with alkalis or the alkaline carbonates and bicarbonates, since these set free the alkaloid, which in many cases is precipitated or crystallizes out, with the consequent danger of the major portion of it being taken in the last dose. I will give two useful illustrations, of mistakes that are occasionally made in this direction. It is by no means uncommon to see liquor strychninae and liquor arsenicalis prescribed together, but they should not be, as the latter is an alkaline solution of arsenic. If strychnine and arsenic are to be given together, as they so frequently are in the treatment of some diseases of the nervous system, the liquor strychninae should always be prescribed with the liquor arsenici hydrochloricus, which is an acid solution of arsenic, and so prevents the precipitation of the strychnine; another proper method of combination of these drugs is to prescribe the arsenic and strychnine in pill form. Again, I have seen several prescriptions in which the liquor strychninae has been ordered along with the aromatic spirit of ammonia, which is an alkaline solution, and therefore incompatible with it.

3. A very useful method of administering both mercury and potassium iodide in the treatment of syphilis is to prescribe together in a mixture the liquor hydrargyri perchloridi with potassium iodide. This is a perfectly correct combination to prescribe, since the biniodide of mercury which is formed is kept in solution by the excess of potassium iodide as a double iodide of mercury and potassium, but it should be remembered that this double salt is Mayer's reagent, which precipitates practically all alkaloids, even if present in only minute amounts. The combination, therefore, of the liquor hydrargyri perchloridi and potassium iodide is incompatible with any alkaloidal solution, or with any tincture containing an alkaloid.

4. Spiritus aetheris nitrosi (sweet spirit of nitre) should not be prescribed with iodides or bromides, since the free nitrous acid contained in it would set free respectively iodine or bromine, with liberation of nitric oxide.

5. Sodium nitrite and ammonium bromide are two drugs which are frequently used in the treatment of high arterial tension, but they should not be prescribed together in liquid form, as they produce an explosive mixture. What decomposition takes place I do not know, and I have never seen these drugs mentioned as incompatibles, but I place the information before you as the result of an experience gained as an error in my own prescribing. On three occasions the bottle of medicine containing these two drugs burst, very much to the alarm of the patient, but fortunately without inflicting any damage.

6. Pepsin should never be prescribed along with alkaline substances, as it is rendered inert by them. It is best prescribed in solid form, but if given in a mixture the acid glycerine of pepsin is the preferable combination.

7. Heavy insoluble salts, such as the bismuth and some of the magnesium salts, can be suspended by means of a mucilage; but this should not be done when the magnesium peroxide is prescribed, since that salt sets into hard masses when mixed with mucilage. Magnesium peroxide is, in my experience, one of the most useful drugs in the treatment of hyperchlorhydria; but when so used it should be prescribed either as a powder to be taken stirred up in a little milk, or as a mixture suspended in some simple water, such as peppermint water.

IV. Palatable Prescriptions.

The last factor that makes for success in the art of prescribing, and one too frequently neglected by medical men, is the administration of drugs which are nauseous or distasteful in such a form or combination as to be palatable to the patient. With our present choice of the numerous preparations of drugs and of flavouring agents, and with the improved methods of administration, there is no necessity for a medicine to be given to a patient which should be offensive to the senses of taste and smell. It should nowadays be considered a discredit to the prescriber to order a nauseous medicine, which, considering how great is the influence of the mind on the body, must seriously detract from its useful therapeutic action. Neglect of this rule frequently induces patients to employ proprietary articles, which are generally compounded in a very palatable form, and so leads to the habit of self-drugging. For instance, most of the drugs in the form of powders which possess an unpleasant taste or smell can be given in cachets or gelatine capsules, and so are swallowed without any discomfort to the patient. Guaiacum, which is one of the most useful drugs in the prophylactic treatment of gout, should never be prescribed in the form of the tincture, which makes a most nauseous mixture, but in the form of guaiacum resin in cachets. The bitter taste of nux vomica is unpleasant to many patients, but in its place the compound glycerophosphate syrup can be prescribed, or the extract of nux vomica can be given in pills. All pills should be ordered to be gelatine-coated or silvered, so that they can be taken in an absolutely tasteless form.

Illustrative Prescriptions.

I will now give a few illustrations of some prescriptions which I have found most useful in my own practice, and which comply with the rules that I have laid down. Potassium iodide is a drug that I very frequently prescribe in the treatment of the various forms of fibrositis, and I invariably order it in the following combination: Taking an average dose for an adult, it consists of: Potassium iodide 10 grains, the compound glycerophosphate syrup (B.P.C.) 2 drachms, spirit of chloroform 12 minims, and peppermint water to the fluid ounce. The compound glycerophosphate syrup disguises the taste and counteracts the depressing effect of the iodide, while the spirit of chloroform and peppermint water act as preservatives, and so prevent the bacterial growth which otherwise would occur in the diluted syrup.

An extremely useful mixture for the relief of irritable cough, and especially of the troublesome post-influenzal cough, consists of: morphine hydrochloride $\frac{1}{4}$ grain, heroin hydrochloride $\frac{1}{4}$ grain, apomorphine hydrochloride $\frac{1}{8}$ grain, dilute hydrochloric acid 5 minims, syrup of

Virginian prune $\frac{1}{2}$ drachm, and chloroform water to half an ounce. This constitutes the tablespoonful dose, which should be taken every four hours. The medicine is very palatable, and the presence of the hydrochloric acid effectually prevents the precipitation of any of the alkaloids.

For the relief of pain, when the employment of morphine is not desired, a combination of analgesics is much more effective than the use of one alone. A most useful prescription for the relief of the pain of sciatica consists of novaspirin 7 grains, pyramidon 6 grains, quinine salicylate $1\frac{1}{2}$ grains, and codcia $\frac{1}{2}$ grain. This is prescribed in a cachet, which is to be taken every four hours.

A simple but effective medicine for the relief of ordinary headache consists of ammonium bromide 10 grains, phenazone 10 grains, caffeine citrate 5 grains, and chloroform water 1 fl. oz. This constitutes a single dose, which as a rule rapidly relieves the headache, but if necessary it may be repeated in two hours.

The most effective combination in my experience for the internal treatment of acute and subacute gout is a pill containing colchicine $\frac{1}{10}$ grain, sugar of milk $\frac{1}{2}$ grain, extract of nux vomica $\frac{1}{4}$ grain, extract of hyoscyamus $\frac{1}{4}$ grain, and extract of gentian sufficient to make the pill. The object of the sugar of milk is to allow the colchicine to be triturated with it before working it up with the extracts, as otherwise the minute amount of the alkaloid would not be evenly diffused throughout the pill mass, and so the risk of a poisonous dose of colchicine getting into one pill might be incurred. One pill is to be taken every three or four hours according to the severity of the attack, which is rapidly relieved by this treatment.

Gastric flatulence is a very common and annoying ailment, for which almost immediate relief can be obtained by a mixture containing in each dose aromatic spirit of ammonia 25 minims, spirit of chloroform 15 minims, spirit of peppermint 12 minims, and spirit of cajeput 8 minims. This combination constitutes a teaspoonful dose, which is to be taken in a wineglassful of water whenever the flatulence is troublesome.

For external use in the relief of pain, whether due to fibrositis, neuritis, or neuralgia, the following combination is most useful: Chloral hydrate 6 drachms, camphor 6 drachms, and menthol 3 drachms are well rubbed together in a mortar, when the three solids form a liquid without the addition of any fluid. This liquid should be painted over the painful area and gently rubbed in, when rapid relief from the pain is usually obtained. For those patients who object to the sensation of coldness produced by the menthol the equal parts of chloral hydrate and camphor can be used instead, as they also form a liquid when triturated together.

In conclusion, let me beg of you to endeavour during your studentship here to cultivate by every means in your power a knowledge of the art of prescribing. Let me entreat you never to become the instrument by which your patients may be tempted to drift into the habit of self-treatment by compressed and other easily administered drugs—a habit which is tending to displace the true therapeutic art, and which is gradually diverting into the hands of purely commercial men that function which should remain the prerogative and the glory of the medical man.

A NATIONAL League for the Protection of Infants has been formed in Italy. Its head quarters are at Bologna, and the President is Professor Carlo Comba of Florence. Local committees are to be formed in various centres.

THE following are said to be, in round numbers, the number of universities and students in the various countries of Europe during the past academic year. Germany has 21 universities and 49,000 students; Italy comes next with 21 universities and 24,000 students. The corresponding figures for the other countries and universities are: France, 16 and 32,000; United Kingdom, 15 and 25,000; Austria-Hungary, 11 and 30,000; Russia, 9 and 23,000; Spain, 9 and 12,000; Roumania, 7 and 5,000; Switzerland, 7 and 6,500; Holland, 5 and 4,000; Belgium, 5 and 5,000; Sweden, 3 and 5,000; Portugal has 2 universities; Norway and Greece have each one; the number of students is not stated. Taken together the universities of Europe number 131, with a total of some 230,000 students. Berlin heads the list with 13,884; Paris stands second with 12,985.