Fifty Years Ago:

A FAREWELL RETROSPECT.

By JOHN KENT SPENDER, M.D.LOND.,

Sometime Physician to the Royal Mineral Water Hospital, Bath.

A PHYSICIAN or a surgeon who began to practise fifty years ago may ask himself a simple question: Is there any doctrine within the scope of my work which has survived the "changes and chances" of time and fashion, and which is as firm and immutable now as it was in the middle of the last century?

If the medicine and the surgery and the therapeutics of 1852 could be reproduced on a screen, some of it would look crude and thin; and there would be some that we might repudiate as not only imperfect, but absolutely wrong. The group of healing sciences as they exist in 1902, how will they appear to the practitioner of 1952? Of this we may be sure, that certain principles will be the same then as they are now. There will be many new discoveries, and new developments of old knowledge; but not all the "familiar friends" will have passed away. Shifting sands come and go; bed-rock truths will last for ever.

Of these deep facts, let me quote one as especially rich in useful results—the administration of medicines in comparatively small and frequent doses. It is a settled ordinance that nearly all great medicines are also great poisons. The dynamic forces which make a substance medicinal make it also toxic: it is a question only of form and degree. Good and evil are always near neighbours; excess of good may become malign; and so it is sung by our great dramatist: "Within the infant rind of this small flower, Poison has residence and medicine power." And the plain didactic verse of Pope is not less clear: "As poison heals, in just proportion us'd."

This, then, is our complex pharmacological problem. We want to get the greatest amount of good from a medicine with the least amount of harm. Its capacity for good is a measure of its capacity for harm; the latter is wrapped in the former, and cannot be wholly separated from it. Etymologically a "dose" is a thing given; in formal terms it denotes a quantity which is calculated to do a specific duty. The *British Pharmacopoeia* for 1885 was the first *Pharmacopoeia* which contained tables of doses; but there was no instruction about the number which ought to be given, or what interval there should be between any two doses. The perplexity is increased by the fact that a drug may show opposite qualities in comparatively small and large doses respectively. Here the human agent comes in; here he compasses his purpose by a skilful repetition of doses, by the nice adjustment of means to an end, and by directing every other aid (moral and mental) which may help the object that he has in view.

Many people insist that, well or ill, they cannot take a particular medicine because it "upsets" them, or "disagrees" with them in a real or fancied way. The supposed disagreement may be caused partly by the medicine being taken in a bulk which disturbs a natural function. Break up that bulk (so I advise) into four, and administer each of those four exactly four times as often. In this manner we get the same therapeutic influence with the minimum of disturbed function; and the influence is not impeded or thwarted—possibly it is even favoured. If a quantity termed *X*, given to a patient every fourth hour, causes symptoms of more or less toxic gravity; then split *X* into *x*, *x*, *x*, *x*, and each of these petty factors may be administered every hour with no more evident effect than if they were so many rations of cold water.

This canon of therapeutic art is of far-reaching importance. It abolishes the old belief that a drug must demonstrate itself to be a poison before we can accept it as a medicine. We find that when we disarm it of every physiological terror its therapeutic victory is the more complete. The evil spirit is dislodged, and the good spirit has a larger field of action; poison has no longer residence, and medicine has wider power.

In 1864 or 1865 the late Dr. Anstie published a small book

which was full of inspiring thoughts for practitioners and students. The theme was *Opium as a Stimulant and as a Narcotic*. By clear and cogent reasoning he showed that opium is a stimulant to nutrition and to vital force generally. That opium promotes textural repair had been proved by surgeons in the treatment of ulcers. But the grand key of Dr. Anstie's thesis was that opium acts as a stimulant only within definite limits. If the drug be pushed so as to trespass in the slightest degree on the domain of narcosis, a toxic shock countermines all the benefit. Excretory functions are checked, the circulation is depressed, and the whole organic machinery is thrown out of order.

Dr. Anstie's book touched the imagination, and was widely read. Many of its hints and suggestions were fruitful in unexpected ways; the science of therapeutics was helped all along the line. Next, the philosophy of the therapist had to be translated into action. Opium is our great analgesic; no code of healing can do without it; and the wit of practitioners was devoted to the urgent question, How can we get most good from opium with the least possible evil?

In the spring of 1866, a gardener (aged about 55) came to me at the Eastern Dispensary, Bath. He was afflicted with a stage of chronic rheumatic arthritis, which was then almost impossible to differentiate from rheumatoid arthritis. He was weak and very lame; obviously there was much damage in the structures of several joints, but his chief complaint was about sharp and almost constant pain "all over him." Without any preliminary treatment beyond one or two aperient doses, the man was supplied with a number of pills, each containing one-twelfth of a grain of powdered opium, mixed with extract of gentian. He was told to take at least six of these pills in the day and night of twenty-four hours, and not more than eight; and there was to be an interval of at least two hours between any two pills. Special emphasis was laid upon these points: He was never to be drowsy or thirsty, and never to suffer more than the slightest approach to headache. An intelligent wife promised to obey all commands. No baths were ordered, and no special diet of any kind; and he was allowed a sparing use of alcohol and tobacco. His habits had been quiet and abstemious. At the end of three months the opium treatment had conquered nearly all pain, and had improved his muscular power so much that he could "muddle about" (to use his own words). All this was done without any drawbacks; the opium was gradually left off, and cod-liver oil was prescribed in its stead.

Morphine is the essential principle of opium as an analgesic; perhaps codeine somewhat helps it. But morphine has collateral excellences, which we do not value enough. When an eye is acutely "inflamed," we can see things which in other parts are hidden under many veils; and we can trace also the operation of our remedies. We learn what congestion and inflammation really are, and how they may be controlled without any local interference. Between thirty and forty years ago it was not the "ritual of routine" to drop atropine into every eye that was red and hot; a more common custom was to put a leech or a blister on the neighbouring skin. The apparent directness of these means makes us forget our powers for striking at vasomotor storms through the blood. Now, what can morphine do for vasomotor troubles of eye and ear?

In 1870 a London ophthalmologist of repute, the late Mr. Zechariah Lawrence, proposed a plan for soothing acute conjunctivitis (apart from iritis). He gave morphine in doses that were not relatively small or relatively frequent; the patient was secluded in a dark room, with the eyes closed and lightly banded. Pain and lachrymation were always much relieved; but gastric and other troubles were usually the heavy price which had to be paid. In the case of a male adult suffering in this way I reduced the dosage of morphine to gr. $\frac{1}{2}$ every hour for six or eight hours, continuing or slowly withdrawing the medication according to the local effect. As a rule the morphine disturbance was of the slightest kind, and was removed by a saline aperient draught.

My next trial was with *antimonium tartaratum*—tartarated antimony. In old days this was prescribed in order to produce a certain visible effect; and its synonym, tartar emetic, perpetuated a bad reputation. The heroic and potent force obscured finer characters; and thus a cloud gathered round the medicine, hiding for a time its better side. Assumed to

have qualities which are mostly coarse and unmanageable, tartarated antimony may be coaxed to operate with the suaveness of a child. Wherein lies this happy secret? Solely in the mode of administration. Let the story of two cases tell the tale.

In September, 1866, I attended a healthy lady, aged about 28, in her first labour. The only point of note in an otherwise normal process was the amount of *post-partum* hæmorrhage, and the difficulty in restraining it. An obstetric doctrine of that day was that this puerperal accident is often followed by breast abscess; and therefore special care was taken. In less than a week my attention was called to a sudden inflammation of the right breast, and clearly there was no time to lose in fighting a serious complication. Neither book nor monograph told me what to do. My thoughts turned to tartarated antimony; and a mixture was prepared, containing 15 minims of antimonial wine (= gr. $\frac{1}{2}$ of the salt) to half a fluid ounce of distilled water. This was ordered to be taken every hour for sixteen hours; sleep was not to come in the way; the mandate was peremptory, and a capable nurse promised absolute obedience (barring anything unforeseen). Frequent sips of cold fresh milk and dry biscuits were the only food allowed. The treatment was begun at 7 o'clock in the evening, and at 10 o'clock on the next morning sixteen doses of the mixture had been taken, equivalent to one grain of tartarated antimony. Heat and redness and throbbing had quietly gone away; the breast was rather larger than the other, and that was all. The same dose was taken every second hour until late on the same afternoon. All trace of local inflammation had then disappeared; a more liberal diet was prescribed, and the special treatment ended with a dose of castor oil.

In November, 1885, a married lady, aged about 50, staying in Bath for a few months, had a recurrent attack of exfoliative dermatitis. The disease affected chiefly the lower limbs, but there were scattered patches on the arms and back. A diagnosis of congestive psoriasis diffusa was possible, but the point seemed to be of little moment. The general health was fairly good, but the irritation was persistent and almost intolerable. Nothing was applied to the skin, and (except a prohibition of alcohol) scarcely any alteration was made in the daily meals; but the patient was kept rigidly in bed, with a covering of light clothes. A mixture of antimonial wine was prepared precisely as in the case recorded just now, and a dose was taken hourly for eighteen hours. At the end of ten hours there was much relief; eight hours later the colour of every patch had greatly faded, and the subjective sensations were proportionately less. The same doses were continued at lengthening intervals for three or four days more. When the "psoriasis" assumed the same tint that it had before, the medicine was stopped entirely. Great was the gratitude of the patient that we spared her the worry and the "mess" of ointments and lotions. She told me that her skin troubles had been called "external gout" by competent authority. Tradition assigns to gout everything which we do not understand; but the young prophets know better, and only laugh. Whether gouty or not the pressing symptom yielded to a remedy which struck down the vasomotor rebellion, and cared not where it came from.

Both these persons took tartarated antimony according to the same formula. Neither was in the least hurt by it; there was no consciousness that any drug was being taken. A clear explanation of my treatment gave the "reason why;" but the name of the medicine was not disclosed.

Mark, then, the following points: Tartarated antimony acted in these cases not by magic or by mystery, but according to definite therapeutic law. It has no alliance whatever with a heresy which masquerades under the name of Medicine. A fourth of a grain, given to a patient every fourth hour, might cause bodily wreckage in the shape of prostration and sweating. Divide that fourth of a grain into four other quarters, each to be administered every hour for 16 hours, and most probably there will be no appreciable disturbance of any kind. Every fraction of the drug tends to be eliminated as soon as it is given; all the glands help to cast it out of the system; dose runs after dose, but one never overtakes another; the poison of it is rejected, and only the good stays. Such is the delicate strategy which unfolds all the benefit of a remedy, and defeats all the mischief. Punctual administra-

tion is the main postulate of success; and attendance in a sick room should enforce this imperative duty. A dose omitted is a weak link in the chain; and two doses must never be given at one time to make up for the omission.

Various experiments with opium and tartarated antimony (between 1865 and 1871) were published in a paper contributed to the *British and Foreign Medico-Chirurgical Review* for January, 1872. And further illustrations of the same subject were added in my Fothergillian Essay on *Therapeutic Means for the Relief of Pain* (1874).

A question much debated between thirty and forty years ago was the use of tartarated antimony for acute pneumonia in a previously healthy adult. It was favoured by men of a surgical habit of mind, because they like weapons which have a quick despotic energy. The physician inclined to a more lenient discipline; he was just as eager to quench the local combustion, if it were possible; but the patient, the human creature, must be supported and lovingly handled. And so he neglected a medicine which, because too often employed with heroic force, had fallen into discredit. Both physician and surgeon were wrong: both saw only one side of the truth. The narrative of one more case will testify to the advantage of that middle path which is often difficult to find.

A retired tradesman, born in or about 1830, living about a mile out of Bath, was under my care between 1884 and 1894. Ordinarily he had fair health, although declared by himself to be "gouty;" but there was occasional and transient glycosuria. During nearly every winter he had an attack of "congestion" of one lung—a term often loosely applied to a state which easily glides into classical pneumonia. In his first illness of this sort my attendance was not requested soon enough, and therefore no special therapeutic effort was made. A few months afterwards he was seen by me early one day when the pulmonary trouble had only just begun, and the pyrexia was relatively slight. Fifteen minims of antimonial wine were prescribed to be taken every hour with half a fluid ounce of cold water, and an austerely milk diet. An afternoon visit found him cool and perspiring. Late on the same evening the constitutional and local symptoms were favourable; the medicine had been taken hourly for 12 hours, and it was now ordered to be taken every second hour through the night. On the next day the man was joyfully convalescent, and the medicine was discontinued. Every precaution was observed to guard against relapse. In every subsequent attack of the same nature the same prompt treatment was successful.

A remarkable effect is sometimes produced by combining very small quantities of antimony and morphine. In the days before salicin, it was my practice to give very small and very frequent doses of quinine and Dover's powder to every person having rheumatic fever; but this treated only symptoms, and not the disease.

A famous doctor once said, Do not be afraid of power. Every valuable medicine represents power; a power for good or for evil according to the skill of him who works with it. *E libris nemo evasit artifex*. A medical workman can no more tell his secret than an accomplished musician can tell another how he touches an instrument, or how the melody is begotten. But there are principles which can be taught, and rules which must be obeyed. The physician sees a dangerous substance, but it does not frighten him; he breaks it into fragments, and endows each morsel with a new and benign efficacy. Thus a base thing may become an engine of mercy and comfort. On the same lines we use belladonna and chloral; and there are deadly agents, like strychnine, which can be persuaded to do splendid work when piloted with an unerring eye and a courageous hand.

In the management of chronic disorders by this method there is a difficulty in rousing punctual effort where there is not the urgency of acute distress. When a person protests in abrupt phrase that "the game is not worth the candle," a medical man has nothing to do but politely to retire.*

It is interesting to choose a symptom which is a common factor of several diseases, and study the varying behaviour of

* Every physician should carry in his wallet, besides the conventional furniture of stethoscope, clinical thermometer, hypodermic syringe, etc., two fluid drachms of liquor morphinae hydrochloratis, four fluid drachms of antimonial wine, a glass minim measure, and a two-ounce phial bottle. Precious moments might often be saved if these therapeutic necessities were always within immediate reach.

the healing art towards that symptom. It was the custom at King's College in the days of our great master, Dr. Todd, to look at isolated symptoms from a clinical standpoint. In the summer of 1850 he gave (in the theatre of King's College Hospital) the memorable lectures on Delirium and Coma, which drew audiences from every medical school in London; and my pencil notes of those lectures are among my most precious relics. Following Dr. Todd's precept, let us take dyspnoea, and examine it partly to discover the harm which may be done by a wrong therapeutic scheme. We may literally shorten life (or put it into peril) in our anxiety to save it; and the road along which we ought to go is not always easy to determine.

Whether the comity of heart and lungs be upset by disease or by an exaggeration of what may be called physiological dyspnoea,† the result is pretty much the same. With lapse of time the secondary static changes become fixed and practically irrevocable. It is the companion neuroses which concern us now; those neuroses which cry with appalling force for relief. The bronchial neurosis of asthma is a serious trouble; but the cardiac neuroses have a grave danger besides, as they connote stress and storm in the very citadel of bodily life. How far can we be assisted in our battle with these neuroses by the administration of any medicine in comparatively small and frequent quantities?

The anginoid pangs which haunt the chest of the cardiac sufferer may be alleviated by specific remedies; this is well known. But long before the virtue of these remedies had been established by Sir Lauder Brunton and others, two papers by Professor Clifford Allbutt in early numbers of the *Practitioner* (1870 or 1871) made a deep impression. He showed the value of hypodermic morphine in soothing a starved and worried heart; in granting peace to a heart turbulent with too much blood; and in quelling the riot of eddies and currents which have lost their way from damaged valves. But all this set me thinking—might not an equal benefit be done by giving morphine through the mouth in very tiny and repeated doses? For, in the most cautious hypodermic medication there are conceivable risks which a prudent man is glad not to encounter.

Imagine a case like this. A young man or woman has had one or two attacks of rheumatic pyrexia at an early age; endocardial disease has been started with more or less abiding consequences. If life be of a quiet and sedentary kind, those consequences may be so latent as almost to elude notice; but the family doctor knows by auscultation all about the lesion, and he keeps his ear on the weak spot. If life, however, be a continuous physical strain, with the excitement of a laborious business, it is easy to foretell the issue. And one of those issues is the searching and piercing pain, which comes and goes one can hardly say why or whither; existence becomes crippled and wretched from the bare fear of what may happen; and the patient is an invalid before the joy of middle years has begun. One of these invalids, a woman, aged 30 (maiden daughter of a country clergyman; I am drawing from my private records), is seized with sudden faintness. She writhes and groans: the face is a sheet of blue pallor: the arms are thrown about; and the respiration is irregular. The medical attendant is luckily close at hand. He puts his patient semi-recumbently on a sofa, throws a rug over her, and enjoins absolute silence in the room. He pours 16 minims of the hydrochlorate solution of morphine into a fluid two-ounce bottle, fills it with cold water, and places his watch on the table. Every minute he

administers one fluid drachm of this mixture, so that at the end of a quarter of an hour one-eighth of a grain of morphine has been taken. And what happens? Calm succeeds tempest, lethal coldness and whiteness yield to warmer hues, the rhythm of breathing returns, and there is thanksgiving all round. The same dose is given every third minute during another quarter of an hour. The patient is then left for a while, with the instruction that if sleep should come it is not to be broken; otherwise the dose is to be repeated every fifteen minutes until the next medical visit. It is assumed that there is every help in the shape of warmth and fluid food; but for the moment alcohol would be a poison.

No therapeutics can alter or mend a textural flaw; but tiny and frequent morphine steadies cardiac nerves, and quietly readjusts cardiac function. Step by step the work is done; there is no hurry, no shock of narcosis, no fear that the medicine will bring another peril. The plan is as safe as it is gentle; and the fundamental treatment (if any) can be resumed in due order and at the proper time.

In prescribing morphine for any disorders which are subacute and may become chronic, the prudent physician never forgets the possibility of a morphine habit being formed, working an ulterior mischief more devastating than the original disease.

There is extant a prayer by a mediaeval physician (Dr. James Horst, 1537-1600), a clause of which may be thus rendered: "O God, open Thine eyes and behold the poverty of our art." In a relative sense, this "poverty of our art" is always with us. But we submit that our aim should be not so much to acquire new remedies as to gain a more exact knowledge of those we have, and to win a more complete mastery in the use of them. Our official materia medica is a storehouse of good things; but how does it profit us if we lack the skill to employ those things to the best advantage? There is no royal way to this knowledge. Severe clinical study is the only road; personal experience is the only school.

The therapeutic method of which a sketch has now been drawn has not had (so far as I know) any recognition in authoritative books on the practice of Medicine. It may be said to be still on its trial. But during thirty years it was my trustworthy ally; seldom did it fail in a great emergency; it relieved some anxious burdens; and my farewell words can speak of it with enthusiasm. And so I commend it to the candid attention of my medical brethren.

ON THE TREATMENT OF DEAFNESS OF MIDDLE-EAR ORIGIN.

A PRELIMINARY COMMUNICATION.

By CHALMERS WATSON, M.B., F.R.C.P. EDIN.,

Physician for Diseases of the Eye, Ear, Throat, and Nose, Marshall Street Dispensary, Edinaburgh.

THE object of the present paper is to give a preliminary note of a method of treatment which I have pursued during the past nine months, and to indicate its results in a series of cases. The basis of the treatment is the use of a preparation of bone marrow, and in a later communication, when dealing with the *rationale* of the new method, I shall indicate the line of research which led to its adoption. It will then be seen that the use of this preparation in cases of chronic non-suppurative middle-ear disease has been a particular application of a general theory regarding the function of the bone marrow.

In broad outline my theory is that the bone marrow produces an internal secretion of vital importance in the economy: that this substance is a powerful prophylactic against the injurious action of various bacteria which in health are present as saprophytes in different tissues; and that defects in this active ingredient are liable to be followed by pathogenic action of these same micro-organisms. The results of this pathogenic activity vary much in different subjects, in accordance with the all-important factor of individual reaction. As the main sites of these bacteria are the respiratory tract, alimentary canal, the skin, etc., it follows that disease will be more or less directly associated with one or other of these channels as the main place of infection. This preliminary communication deals with chronic non-

† People who went to Switzerland thirty-five or forty years ago may remember that before the railway was made to the top of the Rigi boys attended the mules which carried travellers. The animals went at a steady pace of about three and a-half miles an hour up a steep ascent, and of course the boys were always "out of breath." This daily agony, going on all through the four months of summer, worked early mischief in heart and lungs. The poor fellows were pale and bloated; the face was often stained with ecchymoses, and dropsy sometimes appeared in the lower limbs. Their lives were short and sad. Many English servant girls endure a like painful discipline on stairs. In both cases there is a too long or too frequent draw on the "reserve forces" of Nature, and then follows disease—perhaps incurable.—The central idea of this paper came into my mind on one afternoon in August, 1863, when I was in a boat on the Lake of Lucerne. A wave of therapeutic scepticism had been spreading for some years, due much to the narrow resources of the *Ph. Lond.* of 1851 (published in Latin). The *British Pharmacopœia* (in English) appeared for the first time in 1864; but its chemistry and pharmacy were so faulty that the edition was soon withdrawn, and republished in 1867.