

Dosimetric medicine, or, A reform of pharmacy & therapeutics : an address to the physicians of Great Britain / by Dr. Burggraeve.

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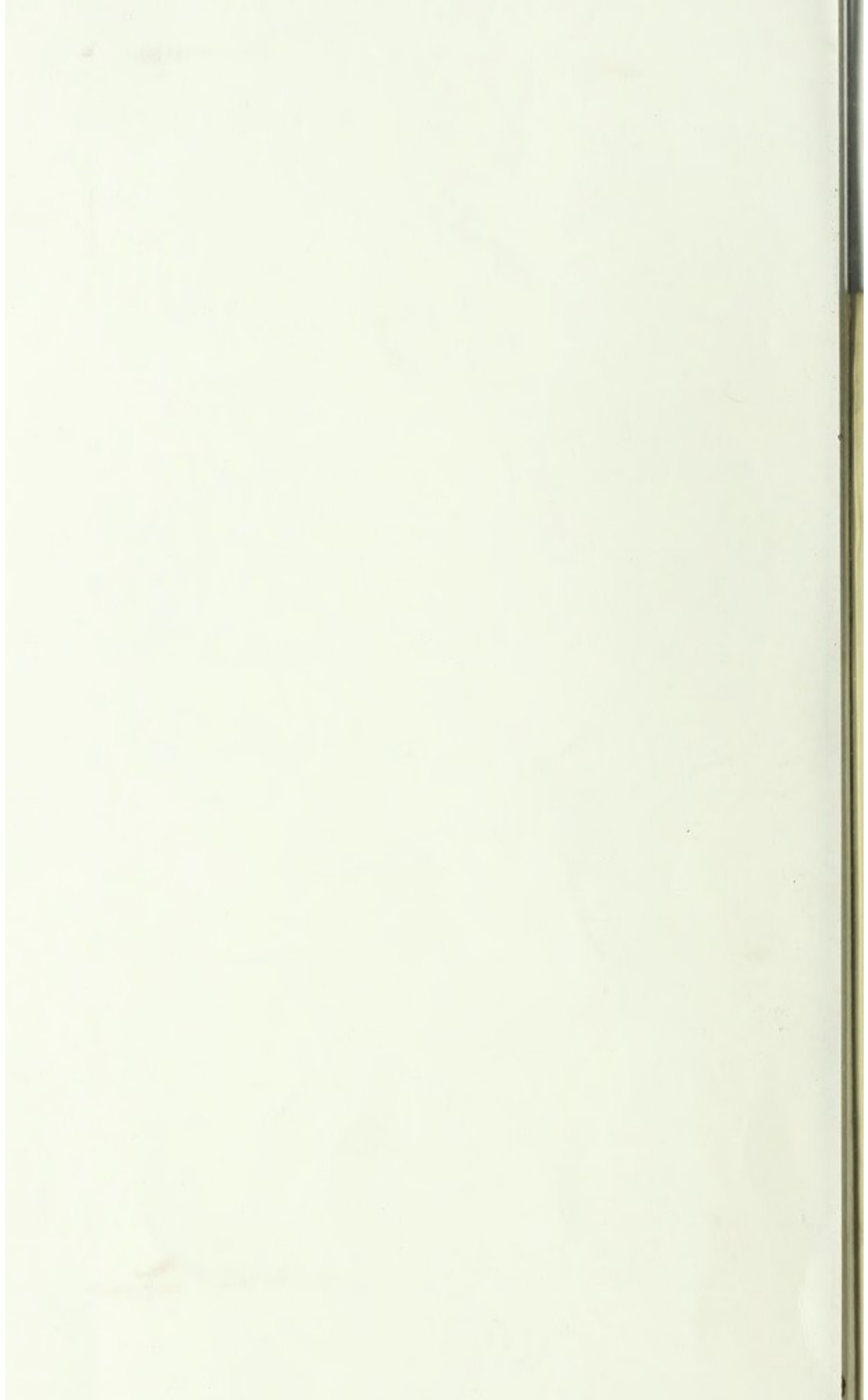
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DOSIMETRIC MEDICINE

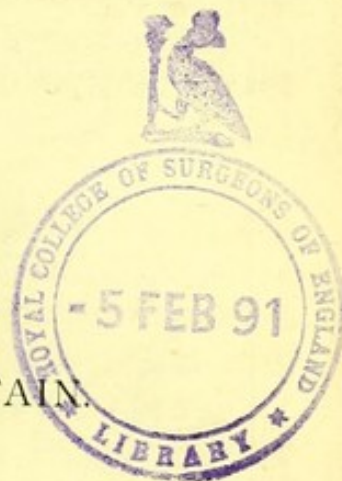
OR

A REFORM OF PHARMACY & THERAPEUTICS.

AN ADDRESS

TO THE

PHYSICIANS OF GREAT BRITAIN.



BY

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Madrid, Lisbon, Paris, Oporto, Rio de Janeiro, etc.*

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DOSIMETRIC MEDICINE.

To the Physicians of Great Britain.

HONOURED AND ESTIMABLE COLLEAGUES,—

Permit me to introduce myself to you, although it is not precisely the custom of your country.

I am not the latest arrival in our profession, for I entered it more than fifty years ago.

At first a clinical student in a large hospital, that of Ghent; then, promoted to the degree of Doctor of Medicine, it was not long before I became connected with the University of that town, first as assistant-professor, afterwards as Professor of Anatomy, and I finally occupied the Chair of Surgical Pathology.

For fifty years I have devoted myself to the duties of these various posts, to the satisfaction of my pupils, and I have published many works relating to the lectureships which I have held.

Several of these works have had the honour of appearing in new editions, among others my *Génie de la Chirurgie Contemporaine, ou la Chirurgie Conservatrice*, and my *Histoire de l'Anatomie*, of which the third edition is now in the press.

On the occasion of the centenary of the discovery of vaccination, I brought out a large volume, in 4to, entitled, *Monument à Jenner, ou Histoire générale de la vaccine*.

In surgery I have introduced great simplification in the treatment of accidents, especially of fractures, by cotton-wool apparatus (*appareils ouatés*), to which I devoted a volume in folio, with plates, *Les appareils ouatés ou application sûre et commode des appareils inamovibles*.

When my time of professorship had terminated, and allowed me to retire with the usual Government pension, I voluntarily withdrew from the lecture-room in order to apply myself to the

reform of pharmacy and therapeutics, which my long experience had taught me to be necessary.

I had had personal experience of the uncertainty and inconvenience of the galenic pharmacopœia. The schism which introduced itself into medical practice with the appearance of homœopathy had no other cause ; and the public easily accepted this new method because it substituted for compound medicines those of a simple nature, if we can designate medicaments those globules and solutions devoid of all medicinal qualities, in other terms, myths.

But it was this mythic quality itself that brought them into vogue, for the public is easily misled by anything that addresses itself to the imagination.

Then we saw the struggle arise between *allopathy* and *homœopathy* ; the former making use of massive doses, the latter operating by those called *infinitesimal*, that is to say, which were beyond the power of physical or chemical analysis, and rejoiced only in what is termed dynamicity.

Between these two rival camps there were a certain number of medical men who entrenched themselves in the practice of *expectation*, which, as far as the public is concerned, is simply the negation of art, for it is impossible to understand how a physician can remain inactive with his arms folded in the presence of disease.

Homœopathy was a disguised expectation, administering fictitious medicines, in order to have the appearance of doing something, but in reality acting only upon the imagination of the patient.

The Hahnemannian schism threw misgivings upon the art of medicine ; all wise men regretted to see it thus becoming the imitator of the ancient science of augury at Rome.

It was necessary that this state of things should cease.

Such is the object of Dosimetry, which has already struck firm roots wherever it has become acclimatized, that is, wherever it has been seriously and loyally submitted to the test of experiment.

In France, Spain and Portugal, in the Brazils, in South America, Belgium, Holland, Russia, etc., this method of treatment has obtained constant success, because it is founded upon the vitalism of Hippocrates, and because its object is to produce calm in the functions of the economy instead of throwing them into a state of perturbation.

I am intimately convinced that Dosimetric Medicine will obtain the same success in Great Britain as soon as the medical men of that country shall have tested it by experiment.

What is Dosimetric Medicine ?

I will reply to that question in a few words.

It is the art of appropriating remedies to the nature and progress of diseases, to their symptoms, and to individual idiosyncrasies.

It makes use, not of the complex formulæ of the official pharmacopœia, but of the simple principles which pharmaceutical chemistry has placed at our disposal, notably, of the alkaloids, the metallic salts and the metalloids, whose pharmaco-dynamism can be put in evidence by direct experiments.

Thus I have experienced the action of the greater part of these remedies upon myself, and I can guarantee the certainty of their action and their innocuousness.

My English colleagues will, therefore, run no risk in following the same path. They will find all the necessary instructions in the little work, entitled, *Nouveau Guide de Médecine Dosimétrique*, which I have just published and shall be happy to place at their disposal.

This shall also be done as regards the dosimetric medicaments; they shall be delivered to them gratuitously *for their experiments*, if they will address a demand for them to Messrs. Burgoyne, Burbidges & Co., of Coleman Street, London. In the meantime, I give here a few abbreviated instructions which may prove acceptable.

Diseases are either *primitive* or *consecutive*: some acute and others chronic.

The former are functional disturbances of a simple nature, and fevers, which may be cut short whatever may be their rhythm; whether continuous, remittent, or intermittent.

We have an example of this in quinine which cuts short periodic affections.

Let us take a fever at the outset: there is an initial shivering, followed by burning heat; the thermometer indicates successively 101°, 102°, 104°, 106° Fahrenheit, and the danger increases like a fire which is gaining ground and threatens the entire building.

It is just so as regards the organism of the fever patient, *i.e.*, it is necessary to place the organs beyond danger. Allopathic practitioners, in order to extinguish this fire, employ bleeding, counter-stimulants, alterants, evacuants, and cold water. But all these means do not arrest the disease at its source, and leave the patient in a great state of debility; hence a very long period of entailing convalescence.

That this debilitating treatment does not always succeed, we have ample proof in the fact that so many physicians withdraw under cover of expectation, restricting themselves to some general hygienic prescriptions.

But such is not medical practice ; it is, at most, a dietetic treatment as understood by Hippocrates.

Had the father of medicine known the resources of modern pharmaceutical chemistry, he would certainly have made use of them. He would not have hesitated to administer the alkaloids, because they act as febrifuge remedies, that is to say, as excitomoters which oppose paralysis of the vessels, and, consequently, the inflammation of which the phenomena of heat, pain, and swelling, are the effects and not the cause.

The great fact of modern physiology regarding the vaso-motor nerves, thus finds its clinical, or therapeutic application, in the administration of the alkaloids at the commencement and during the progress of all acute affections.

Let us suppose an eruptive fever (variola, scarlatina, measles) ; the eruption cannot come out because the skin is hot and dry, just as a seed cannot sprout in a dry hot soil.

We have seen practitioners, in such cases, have recourse to cold water ; it is, however, a dangerous remedy, and moreover, inconstant. Others have recourse to bleeding, but the weak state of the patient is often a counter indication. Others, again, employ calomel to liquefy the blood ; but gastro-intestinal irritation often proves an obstacle to its use, and it only causes an increase of reflex or cerebro-spinal symptoms. Finally, some resign themselves to an expectant treatment, only holding themselves in readiness to oppose any complication that may arise ; but then it is often too late. What physician does not know that encephalitis, carditis, pleurisy, and pneumonia, are almost constantly fatal in the course of eruptive fevers ?

It will be replied to this that the medical man is not always summoned in time, as a consequence of the ignorance or carelessness of parents or others. But, then, the responsibility only affects the latter.

But even admitting that bronchi-pneumonia already exists ; by means of the alkaloids, such as strychnine, aconitine, veratrine, etc., there is still a chance of saving the patient, whilst with ordinary allopathic resources, all hope is apparently lost because they only "burn their vessels." In fact, what is to be done after bleeding and the administration of counter-stimulants, evacuants, revulsives, and stimulants ? We must wait to allow nature to act, which often means nothing less than death.

The jugulation of acute diseases is therefore the dominant fact of Dosimetry, and one which, by itself alone, ought to recommend

it to all practitioners. Strychnine is necessary at the outset of these diseases, in order to prevent visceral paralysis. Thus, in rapid pneumonia, the patient dies of suffocation, which never happens when the contractile force of the lungs and respiratory muscles is increased. We should give, then, at the same time, strychnine, aconitine, and veratrine: one or two *granules* every half-hour, until respiration becomes easier, and the fever has given way. As regards spasm of the bronchial tubes, which always occurs in these cases, it will be dissipated by hyosciamine, whilst expectoration will be facilitated by means of emetine and scillitine in preference to mineral kermes, which is a very uncertain remedy, as it is decomposed by exposure to light.

Dosimetric medicine has especial advantages in the treatment of the acute diseases of children.

We have only to open the *Lectures* on this subject by West (one of the best medical authorities in England), to become aware of the difficulties met by the physician in the allopathic treatment of children's ailments. First of all, as regards the medicines, whatever they may be, for they are invariably repelled by the infant. "The struggle with a child," says West, "in attempting to constrain it to take physic . . . generally does more harm than the administered remedy can do good, and the deluge of tears which it saves in the nursery, is one of the most powerful recommendations of homœopathy to the choice of the public." What an admission of weakness on the part of so distinguished a practitioner! It is true that West immediately adds: "but the *most complete* expectation does not deprive us of the power of regulating the diet of the child, the temperature of the room . . . to avoid strong light and noise; and it requires no more than these simple precautions to get rid of a great number of slight ailments pertaining to tender years."

But if the affection is a serious one—if it places the life of the child in danger—will the medical man still content himself with the "most complete expectation"? No one could answer this question in the affirmative.

If it were a case of inflammatory fever, would the child be bled? But West replies to this: "We must remember, 1st, that great loss of blood is less easily supported by children than by adults; that if syncope occurs, its effects do not disappear so rapidly, and leave a state of depression much more durable. 2nd: That the shock produced by great loss of blood declares itself not only in syncope, but oftentimes by the supervention of convulsions,

and these are easily provoked, especially where there exists already considerable trouble in the nervous system, even if this trouble depends upon a cerebral congestion, for which the bleeding was indicated.

"In these cases, as in comparatively slight affections of the heart, it appears that when the equilibrium of circulation is suddenly destroyed, it has no longer the power to right itself. Some years ago, a child ten months old was brought to me with symptoms of cerebral congestion: a hot head, fontanel swollen, burning skin, twitching of the tendons of the arms and legs. I prescribed leeches; they took well, but convulsions, which we had hoped to prevent, came on whilst the blood was actually being withdrawn; the infant fell suddenly into a state of coma, from which it never rallied completely, and it died in the course of twenty-four hours."

To this West adds (as if to excuse himself): "In this case most certainly the emission of blood was indicated, and in the verifications which took place after death, it was shown not to have been excessive; it had, however, been too rapid, and had I been present when the leeches were applied, I should have noticed certain changes in the state of the child, which would have caused me to stop the emission of blood, and might have led to a very different result."

This is true enough, but the doctor cannot remain fixed at the bedside whilst his remedies are being applied.

In inflammatory congestion when we give aconitine and veratrine at short intervals (every ten minutes, for instance), it has been pretended that such treatment was dangerous; such danger only exists in the imagination of those who have never used the alkaloids. On the contrary, there are no remedial agents more inoffensive; because, as soon as their action has been produced, they are eliminated in the urine or are decomposed in the system, especially when they are *glucosides*, like digitaline, for instance. How great is the danger, on the other hand, when the poisonous plant is itself employed!

I shall never forget having once prescribed an infusion of belladonna leaves as an enema, in a case of nervous constipation, when my patient was attacked by violent convulsions, and nearly died from head symptoms.

Scarcely a day passes that I do not prescribe either atropine or hyosciamine, and I have never had an accident with them; thus may I well exclaim, *Experto crede Roberto*.

The fear of alkaloids which is engrafted into the minds of young medical men is, therefore far from reasonable ; but, of course they must be used with discernment.

Let us see whether opiates are less exempt from danger. We will allow West to speak again : " The peculiar danger," says he, " which attaches to opium is partly due to the employment of badly-defined preparations, such as syrup of poppies, and partly to the administration of too large a dose or *too often repeated* ; the latter is the most frequent cause."

We have italicised the words "*too often repeated*" because it is precisely in that respect that dosimetric medicines differ from allopathic preparations. In fact, just as the latter are indefinite, so are the others precise, and almost, we might say, to mathematical exactness. Their effects are, therefore, constant, and they can be administered in fractional and repeated doses at short intervals, until the desired result is produced. Thus, for instance, in meningitis pains we find that bromhydrate of morphine does marvels.

Now, with respect to antimonial preparations ; it is still West that we quote : " A second remedy, which is very useful in the first years of childhood, is antimony ; although it is, also, often applied wrongly . . . its very powerful, depressive action upon the circulation is especially recommended to combat acute inflammation of the air passages . . . But even in this case, however, its exhibition requires to be watched, and you cannot continue it so surely as with adults, even when the infant can bear it. I shall have to show, later on, the tendency of the lungs to *collapsus* in childhood, when a weak inspiratory function coincides with an abundant secretion in the bronchial tubes. In these circumstances the pulmonary tissue endeavours, by its own elasticity, to expel the air from the vesicles, and if the muscular force has fallen to a certain extent, the efforts of the patient are insufficient to dilate them, and, moreover, a considerable portion of the lung becomes dense, deprived of air, and useless to respiration, as if it had been solidified by inflammation (grey hepatization) or by the compression of a liquid."

These are wise reflections, and should cause practitioners to be prudent in the use of antimonial preparations. What West fears, that is, pulmonary paralysis, is never to be anticipated with emetine and brucine, which are the true counter-stimulants for children.

West adds, moreover : " I am no partisan of antimony as an antiphlogistic in combating ordinary febrile affections, for the nausea it is apt to produce may disguise the appearance of cerebral

perturbation, and thus lead to a wrong interpretation of the symptoms."

It is on this account that aconitine is always preferable, because it is a sedative for the vascular system in general, and particularly for that of the brain.

The homœopathists said that aconite was their vital lancet; and it is true enough, but not in the fictitious manner in which they employed it.

Let us pass on to mercurial preparations, more particularly to calomel. This is what West says of it, though he is a partisan of its use in acute serous complaints (pericarditis, arthritis):—

"In childhood, mercury, instead of affecting the mouth, acts promptly upon the intestinal canal as an irritant; and the green-coloured motions, which are often regarded as satisfactory proof of the action of this medicine upon the system, are far from having, in all cases, this signification. They prove its local irritant action, a result which may be very undesirable, and obliges us often to diminish its effects, and sometimes even to suspend its exhibition altogether.

"Sometimes it happens, also, that calomel acts as an irritant upon the mucous membrane of the stomach, produces nausea and vomiting, and brings about such a state of depression, that it is necessary to cease using it."

We may add to this that calomel, which is a protochloride of mercury, often contains a certain quantity of bichloride (corrosive sublimate), that increases the danger of employing it; for what physician has the time at his disposal to enable him to assure himself of the perfect purity of the medicines which he prescribes?

If mercury be necessary for children, it is preferable to administer it as iodide, and in granules. In this case the iodine adds to the alterative action of the medicine.

Let us say a word on bromide of potassium and chloral hydrate, two therapeutic agents recently introduced into practice, and not unfrequently abused. We will again quote from West:—

"Bromide of potassium and chloral hydrate, either alone or combined, *appear* to act (West does not assert it) in producing sleep in various affections of the nervous system, such as spasm of the glottis in very young children, and chorea in a more advanced age They do not, however, annul pain as opium does, although they are capable of producing sleep; this sleep is not restorative, when, on the awakening of the patient, severe pain remains; and as they both have a tendency to depress the circula-

tion, they should not be given in cases of great exhaustion, nor, do I think, when there exists a serious organic affection of the heart."

Here, again, we must applaud the sagacity of West. We listen to the words of a true practitioner, and when he shall have become a partisan of dosimetry (which cannot fail to happen shortly), he will no longer arrive at such desolating conclusions as the following: "The difficulties which encumber the administration of internal medicines in early childhood, has contributed in no small degree to induce practitioners to have recourse to external applications, much more frequently than in the case of adults This is not the place to speak of the various kinds of fomentations, poultices, and liniments which have the power of relieving pain and arresting spasm, or which are usefully employed as counter-stimulants."

We might remark that this is not medical practice, and that it is useless to acquire a medical diploma if we are merely to act the part of nurses.

Among diseases that attack children, we must place diphtheritic affections in the first rank as most dangerous and often fatal. In these cases we have to consider: 1st, fever, in the state of incubation, invasion, increase, or decrease; 2nd, existence of pseudomembranes or parasitical productions; 3rd, obstruction of the glands and serous effusion; 4th, paralysis. All of these periods require a special treatment, in which allopathic practitioners are often embarrassed, having, as we have already said, "burnt their vessels," by blood-letting, counter-stimulants evacuants, and alterants, as will have been seen by the foregoing remarks upon the congestive and inflammatory diseases of children.

The fever of incubation is characterised by great depression and nervous prostration; it is therefore necessary to sustain the strength of the little invalid by means of brucine and hydroferrocyanate of quinine; then, when the temperature rises to 102°, 104°, 106° Fahrenheit, as often happens, administer aconitine and veratrine, a granule of each every half-hour or every fifteen minutes. To combat parasitical productions we should give small enemas composed of five or six granules of sulphide of calcium, which can be broken up and dissolved in a clear solution of starch, adding one granule of iodhydrate of morphine to enable the patient to retain them. In a short time a strong odour of sulphuretted hydrogen is perceptible, which indicates that the system is saturated with it, and we know that sulphur kills these *microbas* as it does the *oidium*.

With regard to exudation-plates, they must be touched with a camel's-hair brush steeped in lemon juice, rather than in mineral acid, which deeply cauterizes the mucous tissue; the whole throat must be rubbed with a chloroform and collodionised tincture of iodine liniment.

With respect to attacks of paralysis, they will be prevented by brucine; one granule every half-hour.

A salt diet is necessary here, in order to counter-balance the analbuminosis of the blood and albuminuria, which always exists in diphtheria.

The same treatment is applicable to croup, which is oftentimes only an extension of croupy angina, as the latter is of rhinitis, an affection more or less similar to glanders, which requires painting with tannin. For this, again, we have only to break up a few granules of tannic acid in a little gum water. In fact, the medical practitioner can, and should have with him a complete pocket pharmacy.

The true type of physician is he who knows how to attack the symptoms of a disease by means of medicaments whose action is certain, that is, mathematically constant, such, in fact, as dosimetry supplies us with. Here is a recent case:—

An individual, aged 72, was brought to our ward at the hospital for treatment of irreducible hernia, existing already for four days; vain efforts had been expended to reduce it, and had only made the state of the patient worse. The tumour was inguino-scrotal, tender, painful, without our being able to say that there was constriction of the ring or neck of the sack, for the hernia continued along the inguinal canal in the form of a long bowel. It was evident that the contraction existed higher up. This state of things—and a strong contraction of the pupils with blepharospasm—caused me to admit the possibility of an internal spasmodic contraction, a kind of ileus; the more so, as the patient was troubled with hiccough, and had fecaloid vomiting, which could not be explained otherwise on account of the width of the inguinal ring.

With this idea I decided upon administering hyosciamine granules, four at a time, every half-hour; and I remained with the patient to watch the effect. In the course of three-quarters of an hour dilatation of the pupils became apparent, and almost at the same moment the hernia went in, without even the simple pressure of the hand, and with a gurgling noise, which echoed through the whole abdomen, whilst an abundant emission of gas took place by the mouth.

My diagnosis was therefore perfectly accurate.*

Before the discovery of Dosimetry I should have operated in such cases, and probably have lost the patients, as it happens too often in inguinal hernia of the aged.

On another occasion it was a case of strangulated abdominal hernia on the median line above the navel. The patient was suffering from lead poisoning, and had paralysis of the extensors of the forearm. I note this circumstance as it enabled me afterwards to modify my diagnosis. When the operation was effected, I ordered the patient some granules of hyoscyamine with castor oil; two granules every half-hour with a teaspoonful of castor oil.

The next morning I found there had been no action of the bowels, and the large intestine was enormously swollen; the patient was in a state of anxiety, and had not slept during the night, so that the administration of the granules had been continued all the time. The pupils of the eye were very much dilated, and there had been no more hiccough and vomiting. This was a relief; but the bowels had not been moved. I then drew the attention of my pupils to the paralysis of the extensors of the forearm, and I told them that I should combine strychnine (sulphate) with the hyoscyamine, and probably the obstacle would be overcome.

I said that as there was contraction of the fingers on account of the rupture of equilibrium between the flexors and extensors, there must exist a paralysis of the straight fibres in the intestines, and spasmodic contraction of the circular fibres. It was only a supposition, but it soon turned out a reality when the medicines just mentioned were administered. In fact, in the course of one hour and a half the desired effect occurred, that is to say, after the patient had taken eight granules of hyoscyamine and eight granules of strychnine; and as another piece of good fortune, he was quit, at the same time, of pain in the bowels.

What a number of facts of this kind we could quote had we space to do so! Here is one more, still more decisive, as we have double proofs.

An individual also aged (73 years) was attacked for some years with hæmaturia, which came on at irregular times, like what we observe with the menstrual period in woman when change of

* A similar case, treated in the same manner by hyosciamine, is described by Dr. Alph. Dejace, of Seraing (Liège), in the *Répertoire Universel de Médecine dosimétrique*, 15th September, 1879. The hernia was easily reduced after eight granules of hyoscyamine (two, every quarter of an hour).—*Translator's note.*

life approaches. In a last attack the emission of urine was suppressed, and the bladder, painfully distended, rose as high as the region of the navel. It was evident to the touch that the superior portion contained liquid, whilst the lower portion contained clotted blood through which the catheter could not pass, or, at least its orifice became clogged, and it brought forth no liquid.

Under circumstances of so urgent a nature, my colleagues and myself in consultation were of opinion that it was necessary to have recourse to hypogastric paracentesis by means of the apparatus of Dieulafoi.

This operation was obliged to be renewed every day until complete absorption of the clot had taken place. Fearing that hæmaturia might return we kept the patient under the influence of hydroferrocyanate of quinine.

Finally there supervened a marked vesical tenesmus, which obliged us to have recourse to cicutine and hyoscyamine. We owe it to our colleagues to remark that, although allopaths, they did not object to this dosimetric treatment. Let us note what happened:—Under the influence of these two medicines the urine flowed easily, but there was incontinency. As soon as this was perceived, I remarked to my colleagues that by ceasing to give hyoscyamine, and replacing it by sulphate of strychnine, all would come right. And so, in fact, it happened. The conclusion was that we had opened the neck of the bladder too much before re-establishing the contraction of the body of this viscera, which had been enormously distended.

This case, and many others of a similar nature, shows that dosimetric medicine may be used as a touchstone in diagnosis.

How often it happens that a medical man remains in suspense as regards the cause of an ailment! Thus, in the two last cases which we have cited, that of saturnine enteralgia, and that of hæmaturic incontinency, it might be enquired what caused an obstacle to the emission of fœcal matters and of urine? Was there spasm or paralysis? The question was solved by the hyoscyamine and the strychnine; and, although having quite different actions, these two alkaloids each produced their proper effect. And this proves that the action of dosimetric medicaments is *elective* and by no means *antagonistic*, as certain writers of *materia medica* have pretended.

It is true that these writers have never tried the medicines upon patients, and as to their experiments on animals, they have administered these so-called "poisons" in doses at which they really do poison. That is not therapeutics, but simply toxicology!

It remains to say a few words on dosimetric medicine as applicable to chronic diseases. These diseases may be simply functional or organic.

It will be easily seen that the former are susceptible of rapid cure, in the same manner as acute diseases, provided that their exact nature be well recognised. Thus neuralgia gives way sometimes to aconitine and veratrine, when there is hyperhæmia ; or to hyoscyamine and morphine, when there is painful spasm. Sometimes, again, to strychnine alone, when there is subparalysis of the sides of the stomach ; or to strychnine, hyoscyamine and morphine combined, when there is rupture of physiological equilibrium, that is to say, painful spasm of the sphincters and subparalysis of the body of the viscera. That is, in fact, what most commonly occurs. Subnitrate of bismuth, medical charcoal and magnesia are only palliatives, since they do not reach the cause of the disease, but only tend to counteract the effects.

Thus we have seen how superior dosimetric treatment is to allopathy, since it annuls the cause, and with it the effects : *Sublata causa tollitur effectus*.

In chronic diseases *cum materia*, that is, "organic," it will be understood that everything depends upon the nature and extent of the anatomo-pathologic lesions ; in other terms, upon the possibility or not of effecting a cure.

Here the physician must employ the greatest reserve, and whilst giving his patient the assurance that a cure is possible, though he may not have it himself, proceed as if it were possible ; that is, not give way to despair as regards the succour that art may afford, for it is infinite. He will confer in this sense with the members of the patient's family, encouraging in them, still, a certain spark of hope ; for it is inhuman to plunge parents and relatives into despair before the resources of art are exhausted.

Such a reproach may indeed be made to allopathy, which cannot escape from a cramped and often a vulgar circle of thought.

Take, for instance, pulmonary tuberculosis : who will say that, if not curable, it may not be checked ? The physician must then employ all the resources which therapeutics offer to him, and in the dosimetric system the resources are infinite.

Most frequently it is a case of leucocythosis, as Virchow has so well shown ; it is then requisite to have recourse to arseniates, or the reconstituents of the blood, in which we imitate Nature, who offers to us in the arsenical mineral waters, such as those of Bourbonne, truly precious resources.

I am persuaded that, by causing persons who are predisposed to phthisis to undergo a preventive treatment by means of the arseniates, their sad destiny would often be avoided. But, it may be said, that is supposing there are as yet no tubercles? What do we know about it? Nothing indicates tubercles when they are still in a state of granulation. But what is perfectly certain is when there is leucocythosis, then we must act energetically upon the blood by all the means in the possession of the hygienist and therapist, instead of keeping these poor invalids, or rather these predestined mortals in a purely negative condition. For this purpose they should be sent to arsenical waters, and, if necessary, caused to take sea voyages.

That is as much as to say that a saline diet is appropriate in these cases.

Phthisis takes frequently the form of a galloping consumption; we must then modify its progress by a *defervescent* treatment with aconitine, veratrine, caffeine, and digitaline, combined with metallic preparations. Finally, we must calm the cough and insomnia by means of iodoform, chloral, salts of morphine, codeine, and narceine, which have not the inconvenient qualities of opium in substance.

Here, again, we see how numerous and varied are the resources of Dosimetry.

I must say a few words on heart diseases, which prove fatal to so many physicians, as a consequence of the fatigues and anxieties of their profession.

Putting aside endocarditis, which produces lesions of the valves that are incurable, most of these diseases are the result of fatty degeneration, which may still be combated by arseniates of the alkalis, of antimony, of potassa, and of soda, in the form of granules; but it is necessary, at the same time, to stop the palpitations, the irregularities of the pulse, by means of digitaline, combined with arseniate of iron, and even if requisite, with the arseniate of strychnine when there is great shortness of breath. This treatment succeeded upon myself, for I was attacked by the commencement of a hypertrophy of the heart, with palpitations and shortness of breath, symptoms which have completely disappeared, thanks to the measures that I have just indicated, and that in spite of my seventy-three years of age. Let this be a warning to those of my colleagues who may happen to be in the same position.

Among constitutional or acquired diseases are classed the humoral affections properly so-called, which the ancients admitted

rather from induction than from scientific observation. Such is gout, gouty rheumatism, glycosuria, albuminuria, scrofula, rachitism, etc.

All these diseases demand a humoral or iatro-chemical treatment, but we must not lose sight of the state of vitality in the patient. The human body is not a crucible or a retort; all its operations, even those which approach nearest to pure chemical action, are subordinate to the laws of life. It is, therefore, before all things, necessary to act upon vitality. Thus, glycosuria depends, most frequently, upon an irritation, or rather upon an exhaustion, of the central nervous system, as happens after venereal excesses, or hard drinking. Hysteria, gastric irritation from excesses of the table, irritation of the kidneys by gravel or calculus, etc., may have the same results. It will be seen, therefore, that it is not a question of a *specific* but of a *rational* physiologic treatment, in which many of the dosimetric medicaments are called into action, such as aconitine, digitaline, strychnine, cicutine, bromated camphor, etc.

It is the same as regards albuminuria, unique in its effects—the presence of an excess of albumine in the urine—but complex as to its causes.

In fact, whatever may increase momentarily the albuminoid materials of the blood, either because they are not burnt or converted into tissue-substance, as in eruptive fevers (scarlatina, erysipelas), inflammation of the viscera (pneumonia, hepatitis) or membranes (pericarditis, endocarditis), etc., produces albuminuria that passes into Bright's disease when the kidneys themselves are affected—which soon happens if the ailment is left to itself. This lesion is characterized by a hypertrophy, which is often considerable, if the epithelial cells of the kidneys, as well as of the cortical portion, with a granular condition slightly different from the former, the whole complicated by the presence of a more or less considerable quantity of fatty granulations either great or small.

There are certain cases of albuminuria of a purely mechanical nature, for instance, those which are caused by a compression of the large vessels of the abdomen during pregnancy, or by their distension as a result of too large an accumulation of water (hydræmia).

The treatment of albuminuria is deduced from these various circumstances and not from a specific cause. We must employ successively: quassine, strychnine, ergotine, digitaline, the arseniates, and ferruginous preparations, remedies with which the dosimetric arsenal is amply provided.

Here, again, a saline diet is necessary in order to reconstitute the saline elements of the blood, which are generally wanting in cases of hydræmia. Artificial albuminuria can be produced by injecting water into the veins of an animal. We see, then, how wrong it is to load the patient with decoctions. It is requisite, on the contrary, to prescribe a dry regimen, that is to say, as few liquids as possible.

As to rachitism, it is well known that its causes are complex; in the first place an acid cacochymy, owing to a want of energy in the intestinal canal producing abnormal acids, such as lactic and butyric acids; next, a want of inorganic or earthy elements. In the normal skeleton the relative proportions of mineral and organic substance are as 31 to 69; whilst in the skeleton of a rachitic person this proportion becomes as 79 to 21. (Von Bibra, *Phys. Chemie.*)

It will be perceived how necessary the hypophosphites are in this case, as they are transformed, in the system, into phosphates, and we know what success has attended the treatment prescribed by Dr. Churchill, which has extended not only to rachitism, but to pulmonary consumption, and has produced excellent effects.

We will confine ourselves to this as regards humoral diseases, observing once more that we must not lose sight of vital perturbations; for it is life which is here the chemist, and the cacochymies are its products. The physician merely brings the functions of nutrition into their normal or physiologic rhythm.

We have seen that dosimetric medicine is never inactive, and that it employs medicaments in the simplest of forms, *in which they can never harm in any case*—a thing that cannot be said of the compound medicines of the allopath.

In every disease it is necessary to sustain the digestive powers for long fasting is often itself a disease. We should, therefore, have recourse to quassine as soon as the appetite of the patient becomes the least languid, and we should take care to facilitate the action of the bowels by means of the *Sédlitz Chanteaud*. It is important that the tongue be pure, and the breath fresh, which can be obtained by ordering the patient to take every morning a teaspoonful of *Chanteaud-salt* in a glass of water. The body will thus be better prepared for absorption, and the medicines will not be thrown away. The cause of such medication not succeeding is to be found in the presence of impurities in the intestines.

Such are, honoured and estimable Colleagues, the bases upon which reposes the dosimetric method of treatment, bases of a thoroughly vital nature, but in support of which all the natural sciences are called upon to co-operate in order to raise what the poet has called : *monumentum aere perennius*.

Until the commencement of the present century, contemporaries have not shown themselves sufficiently jealous of the glories of their epoch ; on the contrary, they have repulsed them by I know not what feeling of short-sighted egotism, for history has taken them to severe account.

The circulation of the blood discovered by your immortal Harvey met with bitter adversaries, who would have extended their opposition even to persecution, if Harvey had not been saved by the protection of Charles I.

The lightning conductor of Benjamin Franklin was ignored in the first place by the *Royal Society* of London, though it was the germ of the electric telegraph. Papin saw his first steamboat broken to pieces by the watermen of the Saone at Lyons, and a hundred years later Fulton was obliged to carry his invention to America.

All these inventions are nothing in comparison to the interest which attaches to the health and life of man.

Until now medicine has sought in vain for a safe road ; at present that road is found, and English physicians, who have always been in the vanguard of progress, will not now remain behind. In taking the dosimetric method under their patronage, they will prove once more that the country of Sydenham is still the land of the best medical practice.

English surgery has always taken the lead in all great innovations, and it must be so as regards the medical art ; for surgery and medicine are, now-a-days, bound to each other by tight and indissoluble bonds. Great physicians only can aspire to be great surgeons.

I have, therefore, the honour of proposing to you, gentlemen, as stated at the commencement of this address, that every physician who desires it shall receive gratuitously from the firm of Burgoyne, Burbidges & Co., of London, the dosimetric medicaments which he may require for his own experiments. These same medicines (after being thus approved by experiment) will be supplied by the same firm to all the hospitals and dispensaries at cost price.

As soon as these experiments shall have been made, a committee

will be formed to found an English *Journal of Dosimetric Medicine*, which will enjoy the free co-operation of every physician in the British Empire in the pure interests of Science.

Already my friend Dr. Phipson, of London, well known by his scientific works, has consented to receive all communications on this subject, and will be requested to undertake the direction of the Journal.

I conclude, honoured and esteemed Colleagues, by expressing the wish that it may be allotted to me in my old age, to witness the triumph of a method to which I have devoted what strength remains to me. I am one of the oldest physicians of the present epoch, and the whole of my scientific career has had for its object the progress of our noble profession. You will not cause me the grief of feeling that I now address you in vain, or that I am not now as ever able to combat in the service of humanity.

(Signed) DR. BURGGRAEVE,

Professeur Émérite de l'Université de Gand; Chirurgien principal de l'Hôpital Civil de la même ville; Membre titulaire de l'Académie Royale de Médecine de Belgique; Membre Honoraire des Académies et Sociétés de Médecine et de Chirurgie de St. Pétersbourg, Moscou, Madrid, Lisbonne, Paris, Oporto, Rio de Janeiro, etc.

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