

Observations on the remarkable effects of iodine in bronchocele and schrophula : being a translation of three memoirs published by I.R. Coindet, M.D. of Geneva.

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OBSERVATIONS
ON
THE REMARKABLE EFFECTS
OF
IODINE
IN
BRONCHOCELE AND SCROPHULA.

BEING
A TRANSLATION OF THREE MEMOIRS

PUBLISHED BY
I. R. COINDET, M.D.
OF GENEVA.

LONDON:
PRINTED FOR
LONGMAN, HURST, REES, ORME, AND BROWN,
PATERNOSTER-ROW.

1821.

OBSERVATIONS
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A TRANSLATION OF THREE MEMOIRS

EXAMINED BY

J. R. COINDET, M.D.

OF GENÈVE.

LONDON:

Printed by A. & R. Spottiswoode,
New-Street-Square.

TO

W. MORTIMER, Esq.

SURGEON, &C. BRISTOL.

MY DEAR SIR,

I FEEL great pleasure in laying before you a Translation of Three Memoirs, presented me by my friend Dr. COINDET, of Geneva, illustrative of the beneficial effects of Iodine (a new remedy) in Bronchocele and Scrophula, with the fullest conviction that you will, in the course of your extensive practice, give it a free and impartial trial.

Should you find it a remedy deserving of public confidence, or any way tending to the removal of so wide-spreading and general a disease in this country as Scrophula, you will, I am confident, agree with me, that it cannot be too soon introduced into general practice; on the other hand, should it prove of little or no utility, or be attended with disastrous results, it cannot be too quickly discarded.

It is doubtless a remedy of considerable activity, and may prove of essential advantage in many diseases unnoticed in these pages.

The well-known lines of Horace,

“ ———— Si quid novisti rectius istis
Candidus imperti, si non his utere mecum —”

may be fairly urged by the Author of these Memoirs.

I am, Sir,

Yours, very respectfully,

J. R. JOHNSON, M.D.

Bristol,

Oct. 3. 1821.

MEMOIR I.

DISCOVERY OF A NEW REMEDY FOR BRONCHOCELE;
COMMUNICATED TO THE HELVETIAN SOCIETY OF
NATURAL SCIENCES ASSEMBLED AT GENEVA,
JULY 25. 1820.

ABOUT a year since, whilst seeking a formula in the work of *Cadet de Gassincourt*, I found that Russell had recommended for bronchocele the *fucus vesiculosus*, under the name of *Æthiop's vegetabilis*.

Ignorant at that time what relation could exist between this plant and sponge, I suspected, from analogy, that iodine was the active principle in both these marine productions; I therefore tried it, and the astonishing success obtained from its use, encouraged me to continue my researches, which were the more useful, as they tended to the discovery of what we had to expect, from a medicine as yet unknown, in a disease, which, when it occurs in advanced life, or when the tumours which constitute it have acquired a certain degree of bulk and hardness, is so difficult of cure.

The bronchocele, or goitre, is, for the most part, an indolent tumour, formed by the developement of the thyroid gland occupying its centre, either of its lobes, or even its entire substance. It often happens that several lobules are developed upon a lobe already augmented in volume, which form prominencies that may ultimately become the seat of some organic affection.

Goitres are known to acquire an extensive size, and weigh several pounds. It is of rare occurrence, if, under these circumstances, we do not meet with deep organic lesions, or find the centre of these tumours, cartilaginous, cretaceous, or osseous; should they ulcerate, the ulcers are neither phaga-

denic nor painful, differing in this respect to what happens with lymphatic ganglions.

It not unfrequently happens, that, independent of these organic changes, the centre of these tumours consists of distinct sacs, containing different fluids, sanguine, purulent, gelatinous, aqueous, &c., similar in all these appearances to the cysts of the ovaries.

The organic alterations of the goitre are, probably, the effect of acute, or even dull or obscure pains, of spasms, contractions, swellings, which the patients experience, particularly about spring, on the change of season, or the approach of critical periods, symptoms too often despised or neglected, but which, to obviate their effects, would, in a great number of cases, demand a peculiar mode of treatment.

Medical practitioners have been greatly deceived by the false denomination of thyroid gland. This is not, perhaps, a gland; (affording an explanation why the goitre is an affection essentially distinct from scrophula)—it is an organ whose use is unknown. It differs in size according to age and sex; it is larger in the infant than in the adult, in women than in men; it varies in the colour of its tissue; we are unacquainted with its intimate nature; it has no particular coat, nor any excretory duct; it possesses nerves, and blood-vessels, which are proper to it. These last acquire, in their developement a considerable bulk, and thereby render the excision of the goitre frequently impossible, and almost always dangerous.

One of the forms of goitre, not uncommon, is what we vulgarly name *goitre en dedans*, in which the developement of one or both lobes takes place in the interior. It embraces the tracheal artery, which it compresses and flattens to a certain extent. The voice becomes affected—the respiration considerably embarrassed, particularly if the patient has taken exercise or walked much. It projects but little externally.

Such cases, which are, fortunately, of rare occur-

rence, were so much the more distressing, as, until the present period, all assistance from art had been unavailing. By the use of iodine, I have known a patient at first relieved, and shortly after cured, when nearly suffocated.

The immediate cause of this singular disease, which we should not confound with cretinism and scrophula, is still unknown; it has only given birth to erroneous hypotheses, or to conjectures, sanctioned by the names of illustrious individuals, who have considered it more like philosophers than physicians, and who have given credit to some general observations, or popular prejudices, which will not bear the slightest examination, since the goitre is endemical in those countries in which the causes, these authors think contribute to its formation, do not exist; and we find certain districts where this disease is scarcely known, in the neighbourhood of other districts, where nearly the whole of the inhabitants are affected with it, although they are both apparently submitted to the same influences of air, water, winds, mode of life, &c.

Two different causes have, in my opinion, produced the goitre at Geneva; the first, which is occasioned by the use of hard waters, or the pump-water of the lower streets in the city, brings on the goitre very speedily. Thus the soldiers of the garrison, composed especially of young persons, strangers to the canton, who drank these waters, were affected with it in a very remarkable and rapid manner. This form of the disease, rarely of any moment, passes readily away on changing the drink: distilled water hinders its increase, and even contributes to its diminution. I have had occasion to remark, that this cause often leaves behind a trace of the goitre, which, at an after-period, becomes developed.

The second is connected with causes that may be considered as mechanical and local—others, as physiological; the former are produced by the effect of a laborious parturition, vomiting, coughing, crying,

anger, or by the custom of the women in this place bearing heavy burthens upon their heads; they affect, more especially, the lower class of society. The latter operate, more particularly, upon the female sex, and seem attributable to that sympathy existing between the neck and generative organs. Hence it is that the goitre takes place more frequently during a first pregnancy, becoming larger each succeeding one; this also happens even during the period of suckling.

In many cases it is developed on the approach of the critical age; chagrin, nervous attacks, moral affections, also contribute to its formation. These different circumstances explain, why in the adult age the goitre is much more frequent among women than men.

The thyroid gland is susceptible of becoming considerably inflated, almost instantaneously, during a certain period, and of afterwards recovering its former condition. A goitre becomes particularly developed during the first pregnancy of a young woman; twelve hours after delivery it has entirely disappeared.

Calcined sponge has hitherto formed the basis of all those remedies which have had any success in goitre. We are indebted to *Arnoldus Villanovanus* for its introduction. It has been given under the form of wine, troches, powder, &c. almost always combined with tonic medicines, to destroy its unpleasant action upon the stomach; but whatever corrective we employ, it occasions spasms of this organ, which, continuing long after the remedy has been discontinued, produce, in some instances, a chronic malady difficult of cure.

These unpleasant symptoms occur more particularly when the goitre is of great magnitude, and the patients far advanced in life, for the preparations of sponge seldom produce those effects upon infants where it is of little size, and more recent. The spasms have been attributed to the disappearance of

the goitre, but they probably depend on some peculiar unknown combination in calcined sponge, since iodine produces nothing like it, whilst it removes goitres of a larger size, and much more rapidly than sponge, or any of its preparations.

What is that peculiar substance in sponge which acts in so specific a manner in goitre? It appeared to me probable that it was iodine, and this opinion was confirmed, on my learning that Mr. Fyfe, of Edinburgh, had discovered iodine in sponge towards the close of 1819, when I had already witnessed for six months its surprising effects in this malady.

Iodine exists in so small a quantity in sponge that it is impossible to determine the relative proportion in any given quantity; what I employed was obtained from the mother-liquor of the several Fuci.

Iodine, thus called from the fine violet colour it assumes in the state of gas, does not appear to form one of the constituent parts of marine productions; it would seem to be only of accidental occurrence, since it does not exist in those alkalies that are prepared in Sicily, Spain, and the Roman states. Sponge washed and macerated previous to its analysis, yields a much less quantity.

A peculiarity of this substance but little known, is, that of its forming an acid when combined with either oxygen or hydrogen. The salts produced by its combination with oxygen being little soluble in water, I have not employed them. I prefer those obtained from hydrogen, for which iodine has so great an affinity, that it seizes upon it, wherever found, forming an acid known under the name of *hydriodic acid*. It saturates the several bases, and forms neutral salts. From these I have selected for medical use, the *hydriodate of potass*. I have also employed with equal success the *hydriodate of soda*. The *hydriodate of potass* is a deliquescent salt, forty-eight grains of which represent very nearly thirty-six grains of iodine. This quantity, dissolved in an ounce of water, is what I most frequently employ.

The solution of this salt, in a sufficient quantity of water, may take up still more iodine, and thus form an *ioduretted hydriodate of potass*, a peculiarity of which I have availed myself to increase the force of the remedy in those cases where a goitre of hard consistence, great bulk, or long duration, would seem to resist the action of the simple saline solution; in this way I have often obtained the most remarkable cures.

Iodine will dissolve in a certain proportion in ether and spirits of wine. Gay Lussac found that water dissolves 1-7,000th its weight.

One ounce of spirits of wine at 35° of concentration, dissolves at 15° of Reaumur, (67° Fahrenheit) and under the ordinary pressure, 60 grains of iodine, or about one-ninth part of its weight; at 40° of concentration, and under the same condition, it dissolves 84 grains, or about one-sixth, from whence it appears the spirit of wine dissolves more or less according to its strength.

To avoid all error in the dose in this third preparation, which I employ under the name of tincture of iodine, I am in the habit of prescribing 48 grains of iodine, to one ounce of spirits of wine at 35°.

This preparation I have employed more frequently than the preceding, (perhaps with greater success) on account of its being easily prepared in places where we cannot always find apothecaries sufficiently instructed to obtain pure saline *hydriodates*, deeming it the principal object of my researches, to be assured of the effect of a remedy I am anxious may pass into general use.

The tincture should not be prepared long before its use, since it gives place to a crystalline deposit of iodine; besides, from the great quantity of hydrogen the alcohol contains, and its great affinity for iodine, it is speedily converted into *ioduretted hydriodic acid*.

This is doubtless an exceedingly active remedy, but as there are, in certain cases, reasons for pre-

ferring one of the three preparations before mentioned, they should each be duly prepared, to render the treatment more effectual, and to allow of the proper deductions.

I prescribe to adults ten drops of either of these preparations in half a glass of capillaire-syrup and water, taken fasting, at an early hour in the morning; a second dose at ten o'clock, and a third in the evening, or at bed-time.

Towards the end of the first week, I prescribe fifteen drops in place of ten, thrice a day; a few days after, when the iodine produces a sensible effect upon the tumours, the dose is increased even to twenty drops, to keep up its action; twenty drops contain about one grain of iodine.

I seldom exceed this dose, which I find sufficient to dissipate goitres of the greatest bulk, provided they are only an excessive developement of the thyroid gland, without any other organic affection.

After about eight days treatment in this way, the skin becomes less tense, and seems a little thickened; the tumour, previously to its diminution, softens, which is readily perceptible to the touch; a few days later this softening is much more evident; the goitres, or goitrous tumours, if several exist, become more distinct and separate, and in many instances soften and dissolve gradually.

The nucleus which forms them, or to speak more correctly, the parts organically diseased, become harder, lessen in size, and then separate; some of these tumours become moveable, in proportion as those surrounding them are dissolved by the iodine; hence arises an incalculable advantage of this powerful remedy in those serious cases where an operation is indispensable, for in diminishing the volume of the goitre, and permitting, in consequence, at the end of a certain period, the arteries and veins, which have been considerably dilated, to recover their natural condition, the operation becomes less difficult and dangerous.

Some of those tumours that appear goitrous resist the action of this remedy under whatever form I prescribe it, and however long its use is continued. I have, however, reason to believe that these are not real goitres, or at least that their entire substance has undergone some organic change.

The cellular tissue which surrounds the tumour, remains in some cases swollen, and imparts to the touch the sensation of an empty cyst.

A goitre is often dissipated incompletely, but yet sufficiently so as to occasion neither inconvenience nor deformity.

In a vast number of cases it is removed in from six to ten weeks, and in such a way as to leave no trace of its existence. To obtain the full and isolated effect of this remedy, and that it should be disengaged from every foreign combination, I have avoided making use of any local applications — such as *sachets*, *colliers*, &c. which by the compression they produce, as well as from the saline or resolute substances that enter into their composition, are not wholly inefficacious.

Iodine is a stimulant; it gives tone to the stomach and excites appetite; it neither acts upon the bowels nor kidneys; produces no perspiration, but exercises its action upon the generative system, especially upon the uterus. If given in a certain dose, and continued for some time, it is one of the most active emenagogues with which I am acquainted; it is perhaps from this sympathetic action, that it so frequently cures the goitre.

I have employed it with complete success in one of those cases of *chlorosis*, where I should have otherwise prescribed myrrh, preparations of iron, &c. had I not suspected this peculiar action.

This substance again merits, even under this new point of view, the attention of medical practitioners, and I make no doubt of its becoming, under skilful hands, one of the most powerful remedies with which modern chemistry has enriched the *Materia Medica*.

MEMOIR II.

FURTHER RESEARCHES UPON THE EFFECTS OF IODINE,
AND UPON THE PRECAUTIONS NECESSARY TO BE
OBSERVED IN THE TREATMENT OF GOITRE BY THIS
NEW REMEDY.

AT the time I communicated to the Helvetian Society of natural sciences, assembled at Geneva last July, my discovery of a new remedy for the cure of bronchocele, I had assured myself, during the space of a year, of a sufficient number of facts, fully confirming the effects of this powerful specific, and at the same time proving it to be in no-wise injurious. *

Since that period I have been informed of the distressing and unpleasant symptoms peculiar to iodine, and which have manifested themselves in persons, who from their rank and merit, have excited the public attention in this city. The employment of this remedy has been therefore strongly decried; such terror excited, and such strong opposition shown, that I can only compare it to the clamours raised against antimony, and inoculation for the small and cow-pox.

I ought, however, to render homage to truth, by observing that those of my brother-practitioners, as well Genevese as strangers, who have administered the iodine, do not decry it; but on the contrary,

* I was well aware of the pecuniary advantage I might derive from my discovery, had I wished to have kept it a secret remedy; but, independently of such speculation being beneath the dignity or respect that a physician owes to the honourable profession he exercises, I experienced such delight in thinking, that, as a Swiss practitioner, I had discovered a remedy adapted to a complaint of such frequent occurrence, and almost endemical in my native country, that I hastened to render public the fruit of my researches.

think it a powerful remedy, still but little known, and which should consequently be employed with discrimination and prudence.

The welfare of the public requires, that I should shew to what extent these reproaches and fears are founded, and that I should endeavour to trace their true cause.

As among 150 patients to whom I have administered iodine, or its different preparations, not one who has regularly and strictly followed my advice, has been exposed (at least in any great degree) to the disastrous effects attributed to it; I have, but not without considerable chagrin, been made acquainted with what has happened to three or four persons, not one of whom was ever entrusted to my care. *

Confident in such success, and to render it still more striking, I begged of the faculties of medicine, chemistry, and pharmacy, assembled the 13th of January last, at the town-hall, under the presidency

* Mr. Colladon, apothecary, has shown me a letter from Mr. Irminger, of Zurich, from which I transcribe the following passages relative to iodine: — “ I have treated,” says this able practitioner, “ seventy individuals of both sexes and dissimilar ages with the tincture of iodine, according to the formula and dose indicated by Dr. Coindet: two ounces of this tincture are generally sufficient to dissipate very voluminous and long standing goitres; sometimes even a third ounce has been necessary to effect a complete cure. In some cases, the iodine has altogether failed in removing the goitre, but I have never observed it to produce any injurious effects. Children from five to ten years of age have taken this remedy in smaller doses than adults, without the least disadvantage, on the contrary, with the best possible effect.

“ I prefer the tincture to the *hydriodates of soda or of potass*, because this preparation is more simple and less costly.

“ Of the seventy individuals submitted to this treatment, none have experienced any unpleasant effects when they followed my advice; so far otherwise, two-thirds have been freed from their goitres, and in the rest they have suffered considerable diminution; indeed there are few who have used it that have not received some benefit.” This success, at which I am not surprised, looking to the acknowledged talents of Mr. Irminger, confirms the opinions I advance in this Memoir, and which we may reasonably expect from its use, when placed in the hands of able and prudent practitioners.

of a syndic, that if any of its members had knowledge of any alarming case, among those persons that had been committed to my care, they would have the kindness to mention it, stating I should regard such a declaration as a mark of friendship on the part of the individual who should relate it; but as no unfortunate accident had occurred, none could be cited.

One of my patients for whom I had prescribed iodine, laboured under a goitre, of the size of an ordinary apple, (*pomme-reinette*,) which was entirely removed without the least accident in the space of six weeks. I could not reflect on the astonishing activity of this remedy, to which, in this respect, no other can be compared, without immediately considering that iodine must prove a dangerous remedy if injudiciously administered; that is to say, if either prescribed in too large doses, or continued too long without any intermission, or more particularly, if given to feeble and delicate subjects, or those affected with any other disease.

I had no reason to doubt, that iodine, if injudiciously administered, would produce some distressing symptoms; therefore, to avoid and recognise them as soon as they should appear, I have refused, and I still refuse prescribing it for those with whom I suppose it will disagree, or be absolutely injurious. Selecting none but persons in other respects exceedingly healthy, and observing them with much attention, I soon discovered the deviations from the state of ordinary health, and have been thus enabled to appreciate, in a very exact manner, the symptoms peculiar to this remedy. On any of these symptoms occurring, I immediately suspend the iodine, and fulfil the different indications that present themselves, when the patient soon regains his accustomed health; I am then a fit judge whether I should resume, or altogether abandon its employment. With some individuals, I have considered it my duty to interdict its use after a few days' trial.

In reflecting upon the difficulty under which I

have laboured, in the proper administration of iodine, in marking those cases in which it was prudent to prescribe or suspend it, I was soon convinced, that it would be better to invite apothecaries not to sell any to the public but when ordered by a surgeon or physician, or in other words, not to sell this remedy but to those who were under the immediate care of one of the faculty ; and this I should have done had not a sentiment of delicacy restrained me, and a fear lest such a proceeding should be ill interpreted.

I cannot too warmly applaud the wisdom of the Council of Health, in the canton of Vaud, who took measures to regulate the sale of this remedy ; and cannot but express my surprise, that physicians, who enjoy the just esteem of their brother-practitioners as men of science, and great confidence as medical practitioners, resting probably upon the experiments of Orfila, should have pronounced this remedy a corrosive poison.

But these experiments, I may remark, have no reference whatever to the manner in which I prescribe the use of the iodine. There is no person but is well aware that certain medicines, such as the concentrated mineral acids, corrosive sublimate, arsenic, &c. have two different modes of action. When given at once, in a certain quantity, the stomach is instantly corroded, but introduced daily into the stomach in doses sufficiently small not to offend it, they produce at length, in the animal economy, actions peculiar to each, and it is upon this second mode of action that the employment of these substances in medicine is founded. If then the council of health, in the county of Vaud, or any physiologist had wished to rest an opinion upon facts, it surely should not be formed from those experiments, in which dogs have taken all at once inordinate quantities of iodine, such as would never be prescribed, for instance, more than two drachms, but rather from those experiments, where, in giving every day to these animals, a proportionate quantity, we should ulti-

mately produce the symptoms, peculiar to this singular substance.

It will not be useless, if I here mention the quantity of iodine employed at Geneva, in order to know in what degree it has obtained the sanction of experience.

By the reports the apothecaries have made me, there has been a sale of 140 ounces. This, at forty grains to one ounce of vehicle, supposing the mean to be two ounces for each person, proves that more than 1000 persons have been treated with it, from the time of my discovery, until the present day.

Admitting that one half of these have been treated in this city, we shall see, that not one of the heroical remedies, which physicians are in the habit of prescribing every day, such as the preparations of mercury, antimony, arsenic, opium, &c. occasions, in the same proportion, so small a number of unfortunate occurrences.

I have thought it fit to remark, that the different preparations of iodine, produce an action and symptoms peculiar to each; thus calcined sponge produces very different effects from the spirituous tincture of iodine, which acts more especially upon the stomach, is of more difficult management, and produces more readily the symptoms which I term *idiotic*, than the *hydriodates*; of all the preparations the *ioduretted hydriodate of potass* has appeared to me the most easy to manage, and occasions the fewest accidents; it is on this account, I use it almost exclusively. I dissolve thirty-six grains of this salt, and ten grains of iodine, in an ounce of distilled water. I prescribe it at first in doses of from six to ten drops, in half a glass of water, sweetened with sugar, thrice a day, increasing or diminishing the dose according to its effects.

I regret not having yet employed the *hydriodic acid* alone, uncombined.

To prepare the *hydriodate of potass*, or of *soda*, the base, or its carbonate, is saturated with *hydriodic acid*. This acid may be procured by the following process : — Iodine suspended in water, or what is better, an alcoholic solution of this substance, is submitted to a current of sulphuretted hydrogen gas ; the sulphur is precipitated, and the iodine unites with the hydrogen. This liquor is afterwards filtered and heated to remove the excess of sulphuretted hydrogen and alcohol ; the *hydriodic acid* then remains pure.

The difference in the action of iodine, according to its preparation, is not peculiar to this substance. We find it particularly the case in mercury, to which iodine bears the greatest affinity in regard to its mode of operating ; thus the grey oxyde of mercury, calomel, and sublimate, are three preparations, identical as to their base, and all employed in the disease for which this metal is the specific, but they are each prescribed according to the form of the disease, state of the patient's health, season, &c. ; differing greatly in their effects.

From this consideration, I am induced to hope, that by the combined exertions of physicians, surgeons, and chemists, we shall, sooner or later, be made acquainted with other preparations, more sure, and of easier administration than those I have been hitherto accustomed to use, and sufficiently in harmony with the animal economy, not to be at the same time *useful and pernicious*, dependent upon the *sagacity* of those who may prescribe them.

In observing the action of iodine, a phenomenon occurred that induced me to modify my treatment ; that is, it appeared to me to saturate the animal economy, and in some cases develope the idiopathic symptoms more or less suddenly, much after the manner in which the mercurial symptoms manifest themselves ; but on examining attentively what passes, it will be found they never appear so suddenly

but what the action of iodine has been previously established by a softening or diminution of the goitre, by frequency of the pulse, or by some other symptoms peculiar to it. And as it seems that all further action is not only useless, but even injurious; for as the iodine is continued, the body is further saturated, it ought to be immediately suspended. This forms an essential part of my practice, to which I attribute more particularly the success accompanying its use. I think it necessary to watch the moment when the iodine is about to manifest its action, in order to suspend it immediately, and to resume it in eight or ten days after; that is to say, at the precise period in which the action of that previously given has ceased, to abandon it again, resume, and again suspend it, observing merely the same rules in this respect, that every prudent physician observes in the administration of mercury, a rule which I by no means think has been complied with by all those who have employed iodine, the omission of which has necessarily injured the success of the remedy.

I cannot too much press upon the attention of medical men this part of my treatment. I impose upon all my patients the express condition of calling upon me at least every five or six days, and I think it owing to the negligence of this precaution, that some have been more or less affected by iodine.

There are some individuals, who, without consulting any physician, have taken the remedy themselves, and continued its use until they were saturated with it; others observing, that after having used it fifteen days in the dose of ten drops thrice in the twenty-four hours, the goitre had diminished, for example, half an inch, without experiencing any unpleasant symptom, have believed that by doubling the dose they would be cured in half the ordinary time; but each have suffered from their imprudence, and my opinion has been requested when the unpleasant idiodic symptoms had manifested themselves.

Among those who have been strongly affected with

iodine, I have observed the following symptoms: great acceleration of pulse, palpitation, frequent dry cough, insomnia, great loss of strength, and wasting away, swelling or tremours of the lower extremities, painful hardness in the goitre, diminution of the breasts, remarkable and sustained augmentation of appetite, and in almost all those I have seen, to the number of five or six, a very rapid diminution or disappearance, more or less complete, of a hard, bulky and ancient goitre, during the continuance of those symptoms.

In these cases I suspended the iodine, and prescribed milk, especially ass's milk, warm bathing, valerian, kino, carbonate of ammonia, preparations of opium, and other antispasmodics. To remove the painful indurescence of the goitre, I ordered leeches and emollient fomentations. In a woman of advanced age, who laboured under tremours and palpitations, the prussic acid produced a remarkable relief, sudden but transient.

The above treatment allays these symptoms more readily than I could have imagined, but some individuals have been affected for a very considerable period with marasmus, muscular debility and paleness.

The rapid disappearance of a goitre, either from the treatment being carried too far, or the patient being too susceptible of the action of iodine, demands all the attention of medical practitioners, since it proves that these severe symptoms are only the effect of too great a saturation, and points out the necessity of keeping up an action, more slow it is true, but exempt from danger.

The general duration of the treatment has appeared to me to be from eight to ten weeks.

I once witnessed a very violent action from iodine; it is remarkable from the light it throws upon the manner in which this remedy acts. I observed it in the following case:—

A man, fifty years of age, had been affected for

several years with an enormous goitre in both lobes of the thyroid gland. It was still increasing—very hard to the touch, but not painful. He complained of a sense of strangling and oppression when he walked, more especially when he ascended or descended a stair-case; in other respects he enjoyed good health. I prescribed thirty drops a day of the solution of the *ioduretted hydriodate of potass*, (*d'hydriodate de potasse ioduré.*) On the fifth day he complained of an increase in the size of the goitre, of hardness, aphony, sharp pricking pains; his pulse was hard and frequent. The following morning these symptoms were aggravated, accompanied with fixed acute pains in the centre of the trachea—all which he attributed to the iodine.

From the rapid manner in which he had been attacked, I was of a different opinion, and imagined he had taken cold. I suspended the iodine, and directed ten leeches to be applied to the goitre, particularly upon the trachea, an emollient cataplasm, with proper diet, confinement to bed, &c. I found on the following morning the leeches had only produced temporary relief; return of the pains and hardness in the goitre; further application of leeches, repetition of cataplasm, &c. By this treatment, the patient had, in about fifteen days, recovered his usual state of health, with the exception of his voice, which still remained hoarse. On examining the goitre I was not a little surprised to find it considerably diminished and softened. I now entertained the same opinion as my patient, and considered the iodine to have been more active than I had supposed.

In about a month after, the patient, who was engaged in business, and had enjoyed tolerable health since the diminution of the goitre, was desirous of making a second trial of it; to which I acceded the more willingly, as the action excited by the iodine was altogether new to me, and had occasioned some doubts. I saw him every day; on the fourth, precisely the like symptoms re-appeared with

equal degree of violence, when the same treatment had the same success. In about fifteen days, the goitre, without being removed, was so far diminished as no longer to incommode him.

This case, interesting in more than one respect, serves to confirm me in the opinion, that nothing is more uncertain than the mean dose (*que la dose moyenne,*) of iodine for the treatment, and that there are some individuals, upon whom iodine almost immediately exercises its effects, whilst with others, even after its continued use for several weeks, it excites no apparent action.

This proves how highly important it is, that a physician should closely attend to the action of iodine, for had this person taken the remedy unadvised, or practised the *rule of three* which has produced such unpleasant symptoms upon several who have taken it of their own accord, or had even a physician prescribed it without distrusting its effects, and not immediately discontinued it, I doubt not but this patient would have experienced the most severe and dangerous symptoms.

Iodine ought never to be immediately or indiscriminately administered in every case of goitre, for there are some cases in which there exists a true local inflammatory condition, evidently shown by tension, acute pains, or a nervous state connected with contractions of the neck, or a sense of strangling, accompanied with obstruction in the respiration, and frequently with a bilious habit of body. In such cases, previously to the employment of iodine, leeches and emollient fomentations should be applied to the goitre, and a few anti-spasmodics taken, or rather those remedies which re-establish the state of the stomach, without which the action of iodine can be scarcely supported.

These different symptoms occur also during the treatment, and require the same remedies. It is not sufficient to give the iodine alone to a person affected with goitre ; there are other indications to fulfil, the

omission of which renders the cure more or less successful.

From the manner in which iodine acts upon the animal economy, we can readily conceive there are cases in which it ought never to be employed; such, for instance, as pregnancy, tendency to *menorrhagia*, incipient diseases of the chest, a state of marasmus, or slow fever, whatever be their cause. It should also be forbidden to nervous individuals, or those of too delicate or feeble a constitution.

This remedy has been attended with considerable success in those, who laboured under no other inconvenience than the goitre, especially if they had passed the adult age, or were greatly advanced in years.

A woman, seventy-five years of age, consulted me last autumn for an affection of the head, great tendency to drowsiness, debility, and numbness in the right arm, so that she believed she could touch objects only as with a glove. These symptoms increased in proportion as an extensive goitre manifested itself in the right lobe of the thyroid gland, in a manner rather severe, from the rapidity of its increase, for although it had commenced thirty years before, it had enlarged in the space of three months to nearly the size of the fist. It evidently interrupted the circulation in the brain, and compressed the brachial plexus. She had drank a great quantity of water during the summer.

This woman was alarmed at what she had heard respecting my remedy for the goitre. But, as I was acquainted with no other method that could prove equally successful, or even arrest the progress of her disease, I thought it my duty to prescribe iodine.

I attended her with all the interest the severity of her case required. In about fifteen days the disease was arrested; at the end of a month the goitre was diminished; there was less affection of the brain, and the touch became more sensible; she now perceived her ameliorated state, and thanked me for my treatment. In a month from this period, the goitre

was entirely dissipated, and the paralytic symptoms and embarrassment of the brain ceased. She enjoys, at present, perfect health.

In my former Memoir, I judged from analogy, that iodine, or its preparations, would be serviceable in *amenorrhœa*, and, I doubt not, when this remedy shall be more studied, and consequently better known, that it will prove useful, under skilful management, in some chronic diseases of the uterus.

On observing that, in a small number of cases, iodine appeared to have a marked action upon the mammary glands, I have been led to employ it with success in that indolent enlargement of the lymphatic glands of the breast consequent upon delivery.

Its powerful action upon the absorbent system, has induced me to employ it in scrophula, uncombined with fever, and where the enlarged glands of the neck were indolent. In such cases, I have obtained from it the most satisfactory success. This very circumstance, which gives additional importance to my discovery, has been confirmed by one of the most distinguished physicians of this city.

I regard, then, the iodine as a remedy which ought to rank among the most useful we possess: and whatever be the attacks directed against its employment, and the prejudices with which, in this place, they would wish to surround it, it must undergo the fate of all active remedies on their first discovery. We must doubtless study it a long time before we are thoroughly acquainted with its power.

I dissuade every person from employing it without consulting his medical attendant, and I recommend medical practitioners never to prescribe it, but for those whom they can see from day to day; to give it in moderate doses, suspend it in proper time, avoid that injurious state which I have denominated saturation, and especially forbid its use among those who are in either of the states I have mentioned: in this way the faults of the individual who may employ it will not be cast on the remedy itself.

MEMOIR III.

ON THE ADMINISTRATION OF IODINE BY FRICTION,
AND ON THE APPLICATION OF THIS MEDICINE IN
SCROPHULA, AND DISEASES OF THE LYMPHATIC
SYSTEM.

IN a former Memoir, upon the employment of iodine in medicine, I expressed a wish, that, from the joint exertions of chemists and physicians, we should be made acquainted with a preparation, more in harmony with the animal economy than any at present known, and which would not be at the same time *useful and pernicious*, dependant upon the *sagacity* of him who might prescribe it.

The intention of the present Memoir is, to point out, not a new preparation, but a new mode of employing this substance, which will do away those reproaches cast upon its internal use, and one, moreover, of simple and easy application, possessing this advantage, that in the majority of cases the same active vigilance will not be required on the part of the medical attendant, and it will be scarcely possible for patients to exceed in the dose.

I hope, in the course of this Memoir, to command and fix in a particular manner, the attention of my brother-practitioners upon the employment of iodine in scrophula, for if the success I have obtained from its use be confirmed, this medicine will become the more valuable, as this disease is of general occurrence, the remedies hitherto prescribed uncertain, and its cure always exceedingly slow, and at times even impossible.

It would appear that several of the unpleasant symptoms, arising from iodine, are attributable, either to the action of this substance upon the mucous membrane of the stomach, (which has occurred

in a few individuals, who, by a sort of idiosyncrasy, perhaps momentary, cannot well support this remedy, if prescribed without intermission, or if its dose be indiscreetly increased) or to its peculiar action upon the lymphatic system.

The symptoms differ essentially in each of these instances, but they may be combined or occur separately.

To avoid these actions, and particularly the first, for it is upon the second, but moderated and directed by a prudent and skilful hand, that the success of this remedy in diseases of the lymphatic system is founded, I thought that if iodine could be introduced into the animal economy by any other way than that of the stomach, all its efficacy might be preserved, and the untoward symptoms occasioned by its action upon the mucous membrane of the stomach, altogether avoided.

I prepared, in consequence, an ointment, composed of half a drachm of the *hydriodate of potass*, and one ounce and a half of lard, directing about the size of a hazel-nut to be rubbed upon the goitre itself; the enlarged glands in scrophula, those of the breast, &c.; and also, in the course of the lymphatics, night and morning, until it was completely absorbed.

A woman, twenty-eight years of age, had been affected for a considerable time with a voluminous goitre in the right lobe, but still more so in the left lobe of the thyroid gland. It enlarged considerably three years back during her pregnancy. I imagined it to be only an increase of volume without any other organic affection. It affected her voice, and impeded respiration. After eight days friction, the tumours became sensibly softer, and the skin thicker and more lax; in fifteen days, the diminution was still more considerable: the goitre was divided into several small distinct lobes. At the end of a month it had entirely disappeared; the voice and respiration be-

came natural, and the patient experienced no other sensible effect from the action of this remedy.

Encouraged by such success, I treated by this new plan twenty-two patients, of different ages and sexes, each affected with a goitre, more or less voluminous. More than one half were cured in from four to six weeks, and the rest more or less completely.

Iodine introduced in this way directly into the absorbent system, presents then results, similar to those obtained when it is prescribed internally. The duration of the treatment, the thickening and relaxation of the skin, the softening of the goitre, its diminution, its separation into several cysts, tumours, or lobules, the cessation of embarrassment in the respiration and change of voice, follow exactly the same progress.

This new method seems to be fully active with that by which we prescribe iodine internally, when it refers to a disease of the lymphatic system without organic lesion.

I consider this to be the completion of my discovery, since it presents a sure and easy mode of employing this powerful remedy, exempt from those objections made to its internal exhibition.

In the majority of cases, it will be of itself sufficient to effect a perfect cure; and in those instances, when it fails of accomplishing this object, we are enabled to complete it by the least quantity of iodine administered internally.

I ought here to mention, that a lady had taken five ounces of the solution of the *ioduretted hydriodate of potass*, without receiving any other advantage than a diminution of one of the largest and hardest goitres I ever saw. She had discontinued the remedy about six months. By this new mode, the rest of the tumour was, in the space of six weeks, entirely removed, proving that, in certain cases, these two methods may be powerful auxiliaries.

In three patients, the tumours, cysts, or nuclei,

which I was unable to dissipate, continued to dissolve entirely, after several days suspension of the frictions.

Although I have not perceived any of those unpleasant symptoms, attributed to iodine, follow this new process, yet I have observed the same prudence and distrust as when I exhibited it internally, suspending the frictions as soon as the action upon the goitre was duly established, and resuming it eight days after, when it began to get soft, ignorant in what degree the too sudden disappearance of tumours, often voluminous and of long standing, might prove prejudicial, and desirous, moreover, of avoiding those unpleasant symptoms which I imagined to proceed from a species of saturation, or from too violent an action upon the lymphatics.

I have, in reference to these patients, as well as those for whom I have prescribed iodine internally, placed the greatest importance in the local treatment of the goitre, either before prescribing this remedy, or during its employment.

This local treatment very essentially promotes the cure ; it consists, more particularly, in the application of leeches ; sometimes of emollient fomentations, which seem in many cases to favour the action of iodine. I have, however, met with some instances where the goitre, so far from softening, became hard and slightly painful, when there necessarily happened oppression about the neck. This local irritation, peculiar to iodine, was soon allayed by leeches ; and what throws some light upon its mode of action, the goitre was afterwards very readily cured. I have also frequently known iodine produce no sensible effect upon the goitre, when a few applications of leeches have effected a complete and rapid cure.

It is not sufficient then to prescribe iodine, indiscriminately, in goitre, scrophula, or any other such state of the lymphatic system ; there are other indications to fulfil, previous to our obtaining the full success of so valuable a remedy.

The powerful action of iodine upon the absorbent

system, has induced me to employ it in those cases of scrophula that are uncombined with fever, that is to say, in those instances of indolent enlargements of the glands of the neck which produce such desolation in families. And the success I have in such cases obtained from it, has exceeded my most sanguine expectation.

I have given it in solution in the smallest dose, and with the same precaution as in goitre; but as in these cases, there was that sort of debility generally attendant upon scrophula, I have been obliged to combine it with bitters and some aromatic syrup; the progress of the cure is exactly the same as in goitre. The tumours become detached, more moveable, smaller and softer, but the enlargement of the cellular tissue, imparting to the touch the sensation of an empty cyst, continues a long time before its entire removal. From a few cases, I select the two following:

A young girl, seventeen years of age, had been affected for the last fifteen months, with several scrophulous glands, situated under the angle of the jaw, and running across the neck, the lowest of which was ulcerated. A variety of remedies having been tried, but to no purpose, I prescribed the solution of the *ioduretted hydriodate of potass*. In the course of six weeks she was perfectly cured, with the exception of that gland which was ulcerated, and this, from a fistulous aperture occupying its centre, required surgical treatment.

Another young girl of fourteen had been troubled for six months with several enlarged glands situated along the neck. The several remedies, general and local, indicated in such cases, had been, but unsuccessfully, resorted to. By taking the solution of the *ioduretted hydriodate of potass*, she was, in about a month, perfectly cured.

There are, however, some cases where I have failed of obtaining any effect from its use, beneficial or otherwise, and where I have been unable to assign

any cause for so great a difference: the same also takes place in respect to the goitre.

I am acquainted with several cases, where preparations of iodine taken internally, have been attended with the greatest success in certain scrophulous affections, such as ophthalmia, &c.

I have employed, in scrophula, my new mode by friction, with a success nearly equalling that obtained from the saline solution. I however give the preference to the latter, since in small doses it is eminently tonic. *

May not a medicine which manifests so powerful an action upon the lymphatic system, be particularly successful, should its use be alternated with that of mercury, or should the iodine combined with this metal under the form of *iodure* or *hydriodate of mercury* be administered in cases of syphilis combined with scrophula, a combination, unhappily but too frequent, among the lower classes in great cities, where debauchery is generally connected with the most abject misery? Mercury ceases, in these cases, to be the specific for a degenerated complaint, and the treatment is that alone of the symptoms, no remedy being able to reach the seat of the disease.

May not this combination of iodine with mercury, thus become one of the most efficacious preparations in those cases, where, according to the learned author upon the diseases of the skin, the syphilitic virus from one of the parents may develop scrophula in their children? †

There exists an analogy, particularly striking from the practical results that may be deduced from it, between the organic affections of the ovaries, and the

* I applied upon two persons, the one affected with a scrophulous enlargement, the other with a goitre, a plaster, composed of a few grains of the *hydriodate of potass*, mixed with the plaster *de vigo et de mercure*, which producing a pustular eruption similar to that occasioned by the *pommade d'authenrieth*, compelled me to abandon its use.

† Vid. Alibert. *Descript. des Maladies de la Peau*, fol. 226.

thyroid gland. In both instances, one common envelope encloses cysts, differing greatly as to their contents; such as osseous or cartilaginous concretions, gelatinous effusions, some sanguine, others purely lymphatic, or serous; these last frequently attain a considerable size.

Having, among the great number of goitres that have fallen under my care, observed some which appeared to me to be evidently serous cysts, which, notwithstanding, were cured, and calculating therefrom the astonishing action of this remedy upon the absorbent system, I have reason to hope, that iodine will be one day beneficially employed in some one of those cases of dropsy, general or encysted, where the principal indication is to quicken absorption.

Let no one, however, believe, that I wish to make the iodine an universal panacea; the experience of two years upon more than two hundred patients has proved to me, that this remedy is one of the most energetic stimulants we know of the lymphatic system; and the variety of diseases in which I have prescribed it, such as goitre, scrophula, enlarged glands of the breast, or other parts, in some instances degenerating; combinations of the venereal disease, certain affections of the uterus, some cases of dropsy, general or encysted, &c.; this variety, I say, is only apparent, since the whole of these diseases are but lesions of the same system.

Here then, every thing is new upon this subject—the medicine, the choice of the preparation, the best manner of employing it, its mode of action, the peculiar circumstances of the system which neutralise its effects, or render them so active, and those in which its use is contraindicated, opens a wide field to the researches of physiology and practical medicine; but I cannot too frequently repeat this well-known axiom of Boerrhave, “*At prudenter a prudente medico, si methodum nescis, abstine.*”

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