STUDIES

ON THE MINERAL WATERS

OF

VALS

(ARDÈCHE)

VALENCE

PRINTED BY JULES CÉAS & FILS

RUE DE L'UNIVERSITÉ, 9.

The Waters of Vals can be obtained of :

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ESSAYS

ON THE

MINERAL WATERS OF VALS

By the Dr CHABANNES,

Médical inspector.

VALENCE

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NOTICE.

Several essays have been published in the medical periodicals by Dr Chabannes medical inspector of the mineral waters of Vals. The main object of the writer was to attract the attention of physicians to the principal sodical bi-carbonated waters, the first of their class for such complaints as are to be cured by their use.

Practioners know that the waters of Vals from their low temperature and richness in carbonic acid may be sent to distant countries and may be kept for many years in bottle without undergoing the least alteration. An experience of every day, repeated thousands of times, has proved that those waters are as good at a hundred leagues distance as at the spring.

We therefore considered that by reuniting the different essays of Dr Chabannes we might be useful to physicians and to patients who may thus, profit by the long experience of the eminent inspector. They may thus at all times and every where use a remedy which will never fail if taken on proper indications.

The essays of Dr Chabannes are written with great impartiality; one feels that the authority and independence of science guided the learned writer.

ESSAYS

ON THE

MINERAL WATERS OF VALS

(ARDÈCHE).

When we go back to the days of Lewis XIII and of Lewis XIV and see, says Dr Chabannes, in the history of that century, the deplorable state of the roads, and particularly in the Vivarais, we feel satisfied that so long a journey as that from Paris to Vals, for instance, must have been undertaken but for reasons of great urgency. Indeed it is but since the end of the last century that that country so healthy and so picturesque has anything like a regular road.

And yet Mme de Sevigné wrote already : One goes to Vals because he lives in Paris, the other goes to Forges because he is at Vals; thus proving the truth of the old saying, even applied to springs — no one is a prophet in his own country.

A passage in Diderot and Dalembert's Encyclopedia informs us that it was quite the fashion for the Parisians to go and drink the waters at the springs and to have them brought to Paris.

The simple arrangements and the difficult access to the springs, in the mountains, lead us to the belief that fashion alone could not have given rise to the great affluence of which Vals was the object, from the very first discovery of its waters.

It is towards the year 1601 that their first use is mentioned in history. In 1610 their lithontriptical qualities already meet with a grateful patient, Claude Expilly, president of the parliament of Grenoble. He had undergone the operation of the cutting of the stone two years before and on the stone for-

ming again he was sent to the waters of Vals by the physicians of the Dauphiné. Two seasons preserved his life for thisty five years more.

There still exist several pieces of poetry by Claude Expilly on the waters of Vals and a recapitulation of their curing properties.

To prove in after times the authenticity of his work the author had it registered by order of a special committee.

Expilly informs us that the lodging houses were *stock full*, such is his expression.

Soon after consciencious and competent judges of the satisfactory results of the Vals waters become more numerous and many of their observations, to be found in the books of that period, would perhaps undeceive such of our modern doctors who think that medical hydrology is our contemporary.

The first physician who wrote on the waters of Vals was Antoine Fabre. In his treatise, on the mineral waters of the Vivarais, begun and published at the instigation of the Etats du Languedoc he qualifies the waters of Vals : *Most universal remedy*.

We here transcribe the titles of a few chapters.

1° Excellent-waters for complaints in the stomach, cholics, flux and worms;

2° Capital waters for obstructions in the mensentery;

3° Excellent to cure a great flux of hemorrhoids;

4° Wonderful in cases of irregular monthly terms, weakness of the liver and jaundice;

5° Incomparable for obstructions in the spleen;

6° Wonderful to cure hypochondriacal melancholy;

7° Excellent to cure atrophy and cachexy;

8° Sovereign cure for gravel and calculus.

These opinions expressed so long ago are not contradicted by modern writers.

Serrier, a celebrated physician of Arles, published in 1673 two works, the result of long experience, and in vhich he often mentions the waters of Vals.

One is entitled: *Observationes medicæ*; the other *hydotologia*.

By reading this author we are informed that at that period Vals was in high fashion and that the courtiers held Vichy in less esteem.

Serrier, in many passages, shows his perfect knowledge of the therapeutical properties of the sodical bi-carbonate waters. In the article on calculus, for instance, we find this phrase : Prescribuntur equidem peritis medicis aquæ Vallenses, quibus non frangitur equidem calculus, sed vi sua abstersiva eluitur a parietibus renum.

There is an old testimony to oppose to the modern partisans of the dissolution of the stone in the organs by the contact of alkaline waters.

Again in the article Amenorrhea he says :

Indisinenti, mentruorum fluxu... Si a vitioso eluvio, purgationes erunt ex usu, si ab incendio præcordiorum semi cupia *aquæ Vallense*.

We shall have to mention those quotations again, but we shall give another were it but to prove how wisely conducted were the experiments on the waters of Vals and how far advanced.

In the article, tumour of the spleen we read : Numquid enim multoties est observatum hypochondria prædura mollia evasisse aqua impregnata spiriture solutivo chaly bis, aut usu aquarum mineralium Vallensium, quæ non caliditate et humiditate has tumores superant, sed vi insiti salis et spiritus qui insitum cum materia crassa in hypochondriis resolvit plane planeque discutit.

Already there had appeared in 1659 : observations on mineral springs, distilled by Jacques Reinet, apothicary at Aubenas.

They were dedicated to the potent lady Marie de Montlor, baroness of Aubenas, Vals, etc., etc., widow of messire Jean-Baptist d'Ornano, marechal of France.

Reinet informs us that he was instructed by Simon the Baroness'es physician to analyse the waters. This work now very scarce, was approved by Ranchin and Cartaud, the former a physician and chancelor of the university of Montpellier, the latter the Dean of the same *Faculté*.

The use of the waters of Vals in Paris is easily acertained by reading the documents of the times.

In 1675, Duclos, a member of the Academy of sciences, entrusted with the analysis of the mineral waters of France, to found in the spring *Dominique* a little green vitriol. The other springs leave on being evaporated a white nitrous salt very lixivial in smaller or greater qûantity according to the springs.

In 1768, Lamartinière, in his Historical Dictionary, quotes a passage by Pigagnol, taken from his Description of France, fol. 4. He mentions the different properties of several springs.

In 1774, Vincent Raulin, in his Analytical treatise, gives them a whole chapter.

In 1778, Richard de la Prade, in his Analysis and virtues of the mineral waters of the Forez and some other springs, gives the analysis of some of the waters of Vals.

In 1779, Boniface gives also the analysis of the springs.

In 1781, Madier, of Bourg-St-Andéol, wrote a memoir of all the springs of Vals. The indications and counter-indications are mentioned at some length.

In 1784, Arnaud, head surgeon of Vals, published a little treatise which contains, the situation of the mineral waters, an enumeration of the disordes and complaints for which they may be used successfully;

It is curious to know from what parts came the patients to Vals, those who applied to M. Arnaud, far so early as that period Vals had a physician as superintendant.

We here transcribe some of his observations.

One came from Montpellier (Hérault).

Quartan ague, cured with the *Dominique* waters. Three from (Ardèche), tœnia or solitary worm, extraordinary cough, incoercible vomitings.

One from Macon (Saône-et-Loire) nephritical cholics.

Two from Nîmes (Gard) Jaundice, nephritical cholics.

One from Switzerland, hypochondriacal affection.

An irishman, major in the regiment of Baraich, liver complaint.

One from Balisse (Vaucluse), enteralgy.

Those patients coming from every direction show how well known were the waters of Vals at that time.

Lieutaud, a physician of great repute in Paris towards the middle of the eighteenth century, mentions the waters of Vals at every page in his compendium of practical medecine.

The habit of drinking the Vals waters, far from the springs, was not limited to Paris alone, for J.-J. Rousseau informs us, in his *Confessions* , that, during his stay at Montpellier, he drank the Vals water to cure himself of his famous polybe, ... which existed but in his imagination.

At the beginning of the present century, in 1810, Buisson Lagrange devotes a long chapter to the waters of Vals.

Alibert, Patissier, Pétrequin, Socquet, Durand-Fardel, etc., speak highly of them. However we shall take the liberty to rectify some erroneous assertions which, repeated or copied from pen to pen, might get some credit at last and injure the reputation of Vals, though only due at first to a mere mistake of authors otherwise most praise worthy.

French and Foreign medical review of Hydrology. N° for 30th june 1865.

MINERAL WATERS TAKEN AS A DRINK.

That mineral water baths may be productive of very great effects, no one can deny, though no one up to the present day has been able to give a satisfactory explanation of their modus operandi. Whatever may be their chemical composition, their heat, their electrical power even, all physicians agree in this point, that the way in which they are used has a great share in the result obtained.

For mineral waters taken as a drink such is not the case. The treatment does not require so much art, and the result

is not and cannot be the expression of so many different manipulations.

The patient absorbs the mineral water such as nature produced it.

The art of man ought to have nothing to do with it, and if sometimes, under pretext of improvement, such intervention does take place, experience has taught us that the work of Nature only loses by it. In a therapeutical point of view we may say that they are what the complaint makes them.

Now if you observe what takes place you will be satisfied that some of those therapeutical agents have a special property to find out and cure the diseased organ, or at least to influence it more directly than its neighbours. With the patients under our observation at Vals, for instance, such is most generally the case in appearance.

In reality it is not so : the remedy once introduced into the stomach does not immediately take the direction of such or such a part of the body and there take up its head-quarters. If it be a stimulant, as our alkaline waters are, it stimulates every system, its influence is general; but the weakest systhem, tho diseased part being more impressionable, the modifications that it undergoes are the first to meet the eye of the observer. The resistance of a diseased organ, compared with that of a healthy one is insignificant. The former is much more prone to be influenced by the action of agents from without. Hence the law established by M. Patissier viz that every modifying agent influences in preference the diseased organ or the weakest one.

Speaking of the waters of the Pyrenees, Bordeu said : the waters knock at every door, and of course the less solid is the first to be thrown open.

Let us opply this maxim to the waters of Vals :

A few glasses of this stimulant may, in the course of their action, meet with a healthy heart and an absorving or circulating system in perfeet condition; a dyspeptic patient, for instance, will perceive no alteration in the pulse, the urine, the general system in short, whereas his stomach that had a

repugnance to food an an inability to digest transmits to the brain new sensations. The stimulant brought on appetite and digestion proves to be satisfactory.

What we say about the stomach may also be applied to other diseased organs. The liver, the kidneys, the bladder or the matrice may, to continue the metaphore of Bordeu, be the weak door; it is then to either of these organs that the effort of the waters of Vals will tend, until having restored it to its normal state, it clears away that morbid synergy that one sickly organ may occasion.

Indeed it is to *general* modifications, such as the waters of Vals, that are to be attributed the most wonderful cures of those complaints in which one sickly organ influences the others so as to produce that morbid synergy of the functions which we have just mentiones.

(*France Médicale*, 29th march 1865).

NEW ESSAYS ON THE MINERAL WATERS

OF VALS (ARDÈCHE).

The springs of Vals form three distinct groups : first the slightly mineralized springs; the *Marie*, hygienic water, palatable as drink, not containing two dr. of bicarbonate of soda. Then the *Saint-Jean*. Its analysis, before the Academy of Medecine, ranks it among the mixed bi-carbonate waters. One cannot help bring surprised at the large proportions of calcareous principles (0,430). Of course soda is predominant (1,480) yet greatly tempered by the presence of magnesian calcic salts.

This circumstance is not merely an object of curiosity, it was in many cases very useful to us, and guided our treatment of many patients with whom we obtained great success.

It is well known how well calcareous waters are absorbed. Well, the composition of the *Saint-Jean* which I may call mixt gives it a great advantage over the other springs in some cases. This quality probably comes from the quantity of calcareous bi-carbonate which it contains. We must here state that all the springs of Vals are rich in bi-carbonate of calx which is their great advantage over other alkaline waters in repute.

The waters of the *Saint-Jean* the chemical properties of which are so nearly the same as those of the other springs have a very pleasant taste and are transported without inconvenience, their slight mineralisation and their excellent proportions render them of great use in medecine. I observed that they were more easily absorbed in morbid cases when a great sensitiveness of the intestines exposes the patient ot frequent alternatives of diarrhea and constipation.

As we have stated Vals has the great advantage of beginning the bi-carbonate water treatment with springs very weakly mineralised : great was therefore our surprise at reading what follows in the works of an author of some renown in hydrology, a respectable man and whose mistake was unintentional.

« The waters of Vals are certainly the richest we know of » in bi-carbonate of soda, and not less rich in carbonic » acid.

» The waters of Vals are remarkable for their composition, » which ranks them with those of Vichy, and both have a » prominent place among the sodic bicarbonate waters.

» The mineralisation of the waters of Vals is very impor- » tant : perhaps their very richness might not be without » some danger in many cases for which sodic bi-carbonate » waters are prescribed. We are the more inclined to think » so because *the Vichy waters, in many a circumstance,* » *appeared to us to be even too much mineralised.* »

These quotations are taken from M. Durand-Fardel's work.

(Therapeutic treatise on mineral waters, page 165, article on Vals).

Nobody was more competent than the author to assert the analogy which, according to him, assimilates the Vals waters to those of Vichy. In his mind the similitude is evidently complete, since the learned hydrologue gives to both the same elogium and the same criticism.

Certainly the Vals waters would only have to profit by such testimony to recommend themselves to doctors and patients.

1° The Vals waters are the richest of their kind;

2° The springs of Vals and Vichy have a prominent place among the sodiac bi-carbonate waters.

3° The Vals as well as the Vichy waters may be too richly mineralised for some complaints.

Were our object merely to solicit the favour of patients for the waters of Vals, we certainly should overlook a reproach which they have incurred in common with those of Vichy; but we speak to the medical body and we have in reserve too many important facts to present againt this reproach, however tempered it may be by M. Durand-Fardel.

Our first observation is that the regret, expressed by M. Durand-Fardel on the absence of springs weakly mineralised at Vichy, cannot apply to Vals, that has two springs sodiac bi-carbonate mineralised with two or four dr. per quart and other springs as rich as, and even more so than those of Vichy.

We beg leave to complete our idea on the subject. Very often indeed, some waters are in general too strongly mineralised in the beginning of the treatment, and for some patients during the whole time of their treatment. It is therefore a very great advantage for Vals to have two springs weakly mineralised, and it is not right, it is not just to address to them a reproach that may be applied to Vichy.

« There is another group of prototype sodic bi-carbonate » waters. Such springs are numerous, powerful, rich, we » may mention particulary, the *Rigolette*, the *Précieuse*, the » *Marquise*, the *Désirée*, the *Victorine*, the *Chloé*, the *Magde-* » *leine*, etc. The mineralisation though the same, varies as » to proportions, from six dr. of bicarbonate of soda to 14 dr.

» progressively, and the *Magdeleine* attains even 14 1/4 dr.
» Thus the springs of these two groups formas it were a scale
» giving all the medical varieties, from the weakest to the
» strongest. We must insist on this fact that if it is an ad-
» vantage over Vichy to have weaker springs it is also a very
» great one to have some spring so strongly mineralised far
» some idiosynerases. The patients that go to watering pla-
» ces are not different from others; for instance some are
» greatly excited with one fiftieth of a drachm of bella-dona,
» others must take 5, 10 and even 20 times more. What is
» true for bella-dona is true for every medicine and conse-
» quently for mineral waters one of the most powerful.

» In the bi-carbonate waters of Vals, the richness of tonic
» substances is in good proportion with the bicarbonate of
» soda. Calx, magnesia, manganese salts are always pretly
» abundant. These walers are essentially tonic which in sodic
» waters is a capital point; for instance, in the Vals waters the
» abundance of tonic substances prevents the formation of
» the alkaline diathesis occasioned by a long use of alkaline
» waters in which there are but poor quantities of ferrugi-
» nous salts.

» Under such conditions, not only the alcaline diathesis
» prevents the cure of many patients but even makes things
» worse by adding a new disorder which places the physician
» in presence of a dreadful complication.

» This complication is particularly to be apprehended
» when the complaint to be treated with alkalines is to a
» chlorotic, anemic disorder, etc., etc. In such cases, the dis
» obstructing action of the alkaline water unchaly beate,
» must take place within a short delay, otherwise under the
» influence of habitual use, though not long there will be a
» general weakness of the digestive organs. There is no as-
» similation. One is in a sillogistic circle. The more urgent
» the use of alkaline waters may be the less possible it is. The
» abundance of tonic fortifying principles in alkaline waters
» is therefore a great point; for by the combination of ferro-
» manganesic calcic and magnesian salts with the soda ele-

» ment their action is happily modified. Indeed, under the
» influence of tonic substances, the digestive organs pull up
» with such surprising rapidity that the learned Dupasquier
» declared it to be wonderful, and the more you make use of
» bicarbonate water rich in ferrugineous salts, the more you
» can drink, such is one of the principal advantages that the
» two groups of bicarbonated waters of Vals have hover the
» correspondings waters known in France. »

These lines, the result of long experience, nearly forty years, are due to the pen of a learned and unassuming brother-physician, Dr Tourette. They affirm what we stated ourselves in treating this subject.

The third group of the waters of Vals is represented by the *Dominique*.

If the two first groups tendto show Vals as a prototupical mineral station on account of the chemical and therapeutic qualities of its waters sodic bi carbonated, the spring *Dominique*, on the contrary, seems to set it quite apart, without any ressemblance or affinity with any mineral water place known.

Strange indeed, it is among the bi carbonate sodic springs, the richest in France, at but a few yards from the alkaline springs, that bubble up the waters of *la Dominique*, of quite a different composition. Yet it comes from the same feldspatic granitic ground, but at place where it looks more reddish, more pyritical.

The salts that it contains are arseniates, phosphates, silicates and sulphates.

Whereas in the other springs the metal is combined with carbonic acid, in this one it is with an excess of sulphuric acid. Thus the *Dominique* is, as it were, a sulfuric lemonade, whilst the others have an abundance of carbonic acid.

It is to be remarked that the sulphuric acid pure is not found in minute proportions : the analysis discovers more than two drachmas per quart, about twenty drops, a large dose, which is seldom attained in making lemonades in the laboratory.

The analysis was officially undertaken by the Academy of

Medicine and gave a proportion of 0,060 of a drachm per quart. The proportion is considerable and explains the wonderful effects produced by its use.

The taste is sweetish with a pleasant styptical after taste. It drunk with pleasure, by females particularly.

Its action is complex. On the nervous and breathing sytem is sedative. It is tonic, fortifying.

Every variety of cachexy, all complaints that have for consequence a chronic debility, all such as occasion exhaustion, diseases of the skin, scrofula, syphilis, chorosis, anemy, etc., etc., are treated success fully with this water.

Persistent fevers of the paludean cachexic character, miasmatic poisoning intermittent, which had long resisted the rational medication of arsenious acid, were, in a few weeks, cured by drinking the wather of *la Dominique*.

The illustrious Thénars had no hesitation to attribute the curative action of the waters of Mont-Dore, Plombieres and Luxeuil to the dose of *one* milligramme of arsenicate of soda per quart contained in those waters. When we consider that the analysis of *la Dominique* gives *three* milligrammes, physicians will understand the results obtained every day by the use of that water.

To conclude, the Vals waters are not identically the same; though found together in a very limited extent of land, the difference of their composition is very great.

This very difference explains the surprising therapeutic effects observed on the generality of patients. In a word what can scarcely be found in three different watering places is found in Vals. It is that variety, that gradation of mineralisation, that chromatic medical scale, which, in point of the therapeutic ressources it affords, that constitutes Vals the first place not onlyin France but in Europe.

In fact, the weakly mineralised springs complete at Vals what is not to be found at Vichy. Other springs are as much and some more mineralised than those of Vichy, and lastly Vals has what is to be found nowhere else a sulphurous ferro-arsenical spring.

(*Gazette des Hôpitaux*, 25th *april* 1865).

There is not one of my fellow-physicians who does not observe every day, in the hospital service or in town, that in disorders of the digestive organs, the medication, to produce a good effect must be gradual, particularly if the organs be very weak. As also in convalescence, there is less fear of a relapse, if progressive alimentation is resorted to.

What is true in a medication by officinal products is true for medication with natural, mineral waters. Now this kind of medication has become of such general use that we have considered it our duty to acquaint our brother physicianswith the result of our own experience of those waters so admirably graduated.

How many patients come home, every year, from the most celebrated places, in the same state they left home, because they were unable to bear the weakest doses of the waters they had gone to drink, although mitigated with milk or chicken broth. Such is the case at most of the thermal stations in Europe.

Among the bi-carbonate sodic waters weakly mineralised, shall take the spring *Saint-Jean* as a prototype, it being the we most generally use in France.

After drinking this water,there is the same pleasant sensation as that occasioned by the gas arising after champagne.

The lips, tongue and throat are not excited by this water as by more richly mineralised waters.

After the very first glass-fulls the stimulating or sedative effect is generally felt. I say stimulating or sedative because in such cases as dyspepsie, gastralgy, flatulency, etc., one patient complains of an indolent state of the stomach, an absence of apetite unaccompanied with pain; another, on the contrary, complains of a nervous ness after taking food, and epigastric pains, nausea, etc., etc.; well, very often such cases though in appearance so different, are equally cured by the use of the light waters of *Saint-Jean*.

However that reviving of the stomach, that facility of digestion, caused by the presence of carbonic acid and ferro-sodic salts which compose the Vals waters in general, are not ab-

solute. In many a case we have observed that *more richly mineralised waters are more easily absorbed;* so the action of the waters on the digestive organs varies according to the constitution.

The first effect is constipation; but however many patients after a day or two, feel a slight relaxation, or at least regular evacuations.

It is easy to understand that a patient suffering from constipation and a bad digestion of food, must be relieved if the treatment succeeds in determining a normal assimilation of food.

Our grand object, when we prescribe the Vals waters, is the restoration of appetite and the means of preserving it. Indeed patients generally suffer from disorders of the digestive organs, hence the first necessity of reviving the functions of those organs.

As a general rule the patients ought to begin with the water of *Saint-Jean.* This water taken pure or as table drink has the special property of reviving the strength of the stomach, then a more normal assimilation of the food influences the general organisation and enables the patient to bear. if necessary, waters more strongly mineralised.

What matter if there should be a slignt embarrassment in the biliary system, a little hepatic clamminess, a slight abdominal obstruction, characterised by a clammy tongue, intestinal flatulency a rumbling in the bowels with or without diarhœa, a pale yellowish complexion, what becomes of these symptoms when, with an agreable table drink, new vigour is geven to the digestive system.

Does not that indolence of the sub-diaphragmatic organs disappear naturally before the impulsion given to the whole some action of the stomach? Is not a good digestion a proof that the functions of the stomach, the bowels, the liver, the pancreas are all right.

The sensation which precedes the action of organs, their synergy is appetite. Therefore the physician ought always to try to awaken that sensation, because the possibility of dis-

gesting is the general consequence, and when a patient exulting over his new condition, comes to inform us that he has eaten and digested without fatigue, we may safely foretell a radical cure.

Amidst the greatest disorders of the system, the regular action of the digestive organs stops or impedes the complaint. The poor consumptive patient, whose lungs are but mud, which he expectorates every day, lives however and his days are prolonged much more than could anticipate, if the stomach goes on well.

It is a known fact that waters of Vichy, or even those of Vals, too richly mineralised, ought not to be prescribed for inflamation however slight, of the digestive tube. Yet there should be an exception in favour of the spring *Saint-Jean* we we choose as a prototype.

I often prescribe this water to convalescents after bad fevers, which have lasted some time, when the digestive organs are slow to recover their strength. Though the pulse may be quiek, the abdomen painful, though there may be evident symptoms of sub inflamation, I feel no apprehension in prescribing moderate doses of *Saint-Jean*. I have it taken pure and cold in which way it is most pleasant to the patient, and I never saw the least accident occuring from ils use.

The most evident and most immediat effect of this water is certainly its action on the appetite, so immediate indeed that it requires some precaution. It is prudent, in fact, before indulging it fruly, to wait till there is harmony between the work to be done and the organ that is to do it. The greatest moderation should therefore be recommended to the hungry patients.

The water slightly mineralised are the first stage for the visitor of Vals. The are the touchstone to find out the alkaline degree that suits the organism.

By stimulating the gastric mucous juice they prevent the frequent swelling of the hypochondria which discourages the patients at the beginning of their treat ment and would stop it were it not for this valuable resource. They enable the

organism to get familiar with an agent the whole strength of which it is to bear at a later period, to graduate in short the energy of the treatment from a weak dose of a weak spring to a powerful dose of a powerful one.

The richly mineralised springs of Vals are numerous and powerful; they contain from 10 drachms of bi-carbonate of soda to 14 with intermediate degrees.

The action of the springs of Vals, the most richly mineralised in sodic and tonic substances, on the digestive organs, has been too well described by Dupasquier and Patissier for me not to give the opinion of such eminent writers in their own words.

« The influence, says Dupasquier, that the waters of Vals have on the digestive functions, as soon as the patient begins to take them, is most remarkable and the effects so immediate, that one may safely say that they have something *wonderful*. From the very first days they are taken they generally bring on a considerable increase of appetite. The patient, who since a long time did not know the sensation of hunger, is quite surprised to feel it so strong, and still more so to be able to satisfy it with impunity, thanks to the action of those excellent waters.

Under their influence, the stomach to recover new powers of digestion, which formerly slow and difficult now becomes *wonderfully* easy.

In 1854, in his report to the Academy of medecine, Patissier, thus expressed himself when speaking of the highly mineralised waters of Vals : « In the de the healthy state, the water of Vals, taken as a drink, increases the appetite, renders the digestion easier, regularises the alvine dejections and sometimes has a relaxing effect. The circulation of the blood gets more active and the skin warmer. There is an unusual sensation of strength and comfort. A few glassfulls of these waters are sufficient to render alkaline the perspiration and urine that are naturally acid. »

We could not express ourself better; and we have but to accede to such declarations, which experience proves the

truth of every year. We may add that there is no inconvenience in drinking these waters for any length of time. Experience even proves that not only the organism can bear to a susprising degree the alcaline waters of Vals, but even that these waters taken as ordinary drink strengthen the whole system. Thus a large number of persons of the poor class in Vals, who have no other drink than the water of *Saint-Jean* are not in the least incommoded by it. I was even told by themselves that that water does them more good than ordinary water and leaves them more indifferent to the want of wine.

Here is another fact which alone should be a sufficient ansvers lo those who apprehend alkaline cachexy.

I know a family of six grown up persons who continually make use of the most mineralised water of Vals, there are also two children who do the same, well young and old enjoy good health.

A girl of 28 ar 30, who about ten years ago had a chlorotic complaint is now quite cured and able to attend to a large form. Since ten years she drinks Vals water like common water.

Her mother, who died at a advanced age, had a severe catarrh, and every winter had a recrudescence, of that complaint. The use of *the richest* springs seemed by no means to affect her.

In the same house, there is a young woman, the mother of three fine children that she nursed herself, she prefers mineral water to any other. Though not used to it before she drinks a good deal of it without any inconvenience.

I insist on this circumstances because it is an answer to an article of the *Gazette des Hôpitaux*. The fact spoken of was this. Some cows having taken the habit of drinking at one of the alkaline springs soon lost their milk.

I questioned several times different members of that family andfrom the information I got I may safely state that each of them drinks on an average two quarts of mineral water per day.

The workmen who come, chiefly in summer, to help them in the farm wark, absorb a great deal of mineral water, and it appears that it nevers did them any harm.

I mention those facts because they seem to prove that if Profossor Trousseau, in a lecture become famous, went so far as to assert that the use of those waters occasioned the *alkaline Diathesis*, it would be most unjust to apply the same criticism to the springs of Vals, which, as it has been proved produce remarkable tonic effects.

Perhaps we might explain that difference by the different chemical composition of the waters of Vals aud Vichy; but are not the facts we have mentioned a better proof than chemical theory. It is better to follow experience, but we must not forget the great physiologic aphorism : Corpora non agunt nisi soluta; now if we find in the rich waters of Vals all the substances that are found in those of Vichy, we observe that the proportions are not the same; that in the waters of Vals the *strengthening tonic* salt are in a notable proportion and kept in dissolution bythe large quantity of carbonic acid which prevents these salts from being precipitated and becoming inert, either before or shortly after the ingestion of the mineral water into the stomach.

(*Gazette des Hôpitaux*, 27 avril 1866).

ON DISPEPSY.

Following the exemple of distinguished writers we make a difference between dyspepsy and gastralgy. The word dyspepsy is applied to digestion it means the relation between the stomach and the food to digested, il means a bad painful digestion.

The word gastralgy is applied to the nervous state of the stomach it represents the correspondence betwen that organ, and the nerves that move it, it means the suffering of the stomach.

These two complaints often go together : thus there are gastralgic dyspepsies and dyspepsic gastralgies.

What is the action of the Vals waters on dyspepsy?

We may say as a general answer, that every description of dyspepsy by the waters of Vals obtain if not a radical cure at least a relative one. We say relative to avoid any reproach of exageration the words cure, relief, improvement have a very variable meaning for the patients. How often have I only observed, a relief when the patient quite proud of the improvement obtained was proclaiming his radical cure. The poor patient who for months has been suffering, does he think that the present relief may have an end and that he will have to begin again the same treatment. Is not the present state a cure? does it not make him forget the pain he has borne up with? Nothing is so soon forgotten as pain, and happy is it for our poor human nature. Not to digest, to digest badly is not an existence. Since half a century, our misguided civilisation invents, creates new wants, hence bad digestions, particularly in large cities. Adulterated drinks, food not less so an abuse of every pleasure, of every enjoyement, have occasioned a degeneracy often spoken of by men of the highest authority. Medical science has made great progress in relieving our infirmities, but the present generation seem in duty bound obliged to throw away all the advantage of it byt their excess of every kind; hence it is that chronic complaints are ten times more numerous to-day than they were forty years ago, it is true that acute diseases are less frequent. This perhaps explains the increasing favour given to hydrologic medication. But to return to the Vals waters.

The function of the brain corresponds too closely with the stomach, that first laboratory of the principles of the blood, indispensable stimulus of the cephalic organ, for the intelligence not to suffer from auy abnormal state of the digestive

organ. Constantly preoccuprid about his stomach the dyspeptie patient is a torment to himself and to those near him, no matter the cause of his complaint. The first thing the dyspeptic patient asks of his physician is to restore appetite and make him digest his food. Such are the sufferings that disappear by the use of the waters of Vals.

It would be difficult to find a mineral water that would not cure dyspepsy. The name of that disease is invariably to be found on all the lists of diseases cured by mineral waters, no matter what class they belong to. This property, however general it may appear, has in ilself nothing wonderful, when we consider the different causes of the complaint. Dyspepsy from general weakness; dyspepsy from plethora; dyspepsy caused by some disorder in the uterus; gouty dyspepsy, impetiginous dyspepsy etc., etc. Now all waters, taken as drink or used for bathing purposes, that cure the original complaint also cure the dyspepsy which is but the symptom.

With a complaint presenting so many points of attack, it is evident that that place, which affords the greaters variety in the mineralisation and nature of the waters, will afford the most means of attaining a cure and therefore is superior to others.

We have already stated that the springs of Vals are divided into three distinct groups.

One of springs weakly mineralised with bi-carbonate of soda, calx, magnesia, iron, manganese, chlorure of sodium, etc. Another of springs of the same description equal to those of Vichy far more richly mineralised.

Lastly the *Dominique* the water of which is ferro-arsenical-sulphurous, and can be compared to no other spring known.

It contains per quart 0,006 of a drachm of arseniate of iron that is thre times more than Plombières, Luxeuil, Mont Dore etc. etc. These different agents, that the physician can dispose of for the cure of his patients give to the springs of Vals a marked superiority over all others. To judge we must compare. Well, notwithstanding a certain reluctance we are obliged to support the proposition, we believe it to be a

true one, and it is our duty to publish for the sake of the patients, who are entitled to know the truth, and as official representative of authority at Vals. We therefore assert that we know of no place where is to be found such a complete collection of mineral waters as at Vals. It is a mistake to say the *water* of Vals as people say the Water of Vichy, Pougues, etc. etc. The right expression is the *Waters* of Vals, because they are varied and different.

For the last eight years that I observe the results I have not yet seen a single case of dyspepsy that was not relived. The only question is to prescribe the proper spring.

Is it the acid dyspepsy, the flatulent dyspepsy etc. etc. That should be treated by preference with the Waters of Vals? I have not observed any great superiority in any of those waters in such or such variety of dyspeptic cases. As I said before, Sometimes the strong spring succeed better, even in the beginning than the weak ones, but generally the latter agree better with the stomah.

Any patient that may fall under the denomination of dyspeetie finds a relief in the waters of Vals; he recovers the long sought appetite and the faculty of satisfying its cravings.

However one complaint, of the dyspeptic kind, is at first more difficult. We mean those dyspepsies which 60 years ago would have been called gastrites and that. M. Donat has just denominated dyspepsy by irritation as though the doctrine of physiology were for ever settled on the observation of a complaint that does not exist.

To such cases we may still leave the name of dyspepsy by irritation, but let us not forget that their Symptoms show a transition from dyspepsy to gastrite.

Want of appetite, the tongue with a red cirele, thick and in the middle, the epigastric pression painful, continual retrogastric pains, an aversion to food, a sensation of nausea on taking any. Such is the description of a a case we often see. What is the effect of the waters of Vals in Sueh cases? They increase all the Symptoms. After a few glass full the epigastric swelling increases, the tongue gets thicker and red-

der, etc. etc. Yet we seldom discontinue the treatment. We encourage the patient to take every day a little dose. In general fresh water baths arc used and left off after eight or ten days.

A few days after the patient feels an unexpected improvement if not a complete cure.

The waters of Vals may be compared in this case to collyrium, which, if used slightly cures, but if used to long never does.

(*Gazette des Hôpitaux.*)
(3 juin 1865.)

We abstain from any theory on the anatomical or chemical condition of the stomach and its juices. The latter question in particuliar would be dangerous. It is much better for the doctor to follow his own judgement and experience than any chemical theory.

The era of neutralising remedies is over. The alkaline subtances whieh formerly saturated the excess of acidity, provoke on the contrary acid dyspepsy. The Pyrosis may be relieved by what, in appearence, ought to envenom it still more; We mean the few drops of chlorydric acid recommended by professor Trousseau in his lectures.

In presence of such evident contradictions is it not the duty of the physician to leave to Time the task of elucidateing those questions, and to direct his laborious investigations to the application of a salutary medication which he knows the effects of ?

We have nov to speak of intestinal dyspepsy and the advantage of preseribing Vals waters.

Intestinal dyspepsy which is most generally mixed with gastric dyspepsy is but an extension of the latter. It may arise from the same causes and has the same symptoms.

In the intestinal dyspepsy you find, as in the stomach, gases which instead of causing eructations, occasion borborism, *flatulancy*, and svellings similar to those observed in gastric dyspepsy. They are produced by the intestinal gases which, sometimes, make a violent irruption driving out excrement

more or less solid, sometimes coinciding with constipation, remain imprisoned, as it were, and produce tympany and those unsufferable swellings that reduce the patients to that state of sadness which characterises the complaint.

Saint-Jean Water as table drink, mineral waters baths and descending showers, such is the only prescription. I give, and indeed the only one that succeeds in the beginning.

Very often we have observed the cessation of wind and the penetrating smell modified as by enchantement.

When the diarrpetic symptoms are predominant we have recourse, with more success, to descending shower bath with cold mineral Water, which has proved most affective to the great majority of patients. The stimulating action, and chemical composition of the springs *Désirée*, *Précieuse*, *Rigolette*, *Magdeleine*, etc. etc., soon restore the firmness of the large bowels, which before had been treated with emollient injections which generally only enervate.

After the first few days, when the patient is improving we feel no hesitation in prescribing stronger waters. From the *Saint-Jean* we pass to the *Rigolette*, the *Désirée* or the *Magdeleine*, etc. etc. At last according to method approved of by long experience we seldom let the patient go without giving them a little of the ferro-arsenical watter of the *Dominique*.

This habit has two advantages : first it strengthens the patient rendered weak and sometimes anemic by a long sicness, and which his short stay at Vals has not sufficiently pulled up. Secondly we postpone the prescription of the *Dominique* Water because the patients here generally drink too much of a water they find so palatable, so that they find the stronger water of the *Dominique* more exciting and its effects are remarkably prompt.

Of course if the intestinal dyspepsy, with strong diarrhetic symptoms, affects a sickly, soft fleshed pale weak patient we at once prescribe the *Dominique*.

Before concluding this article on dyspepsy, we shall take from our annnal report to the Academy of Medecene, a few figures showing on what we found our observations.

On eighty nine observations adressed to that learned institution in 1862, there were twenty eight dyspeptic, of whom seventeen were cured, seven relieved, one that left without any change, one whose condition got worse, two in who a change after the water season.

In another report, which was honoured with an academical reward, I mentionned fourteen cases of gastro-enteritis, eight cures, three improvements, two without change and took place but one aggravated.

Eight cures out of fourteen would be a very fair proportion, but we must, here transcribe the observation that we gave with our report : « The above figures would not give an » adequate idea of the waters of Vals on inflammation of » the stomach, were we not remark that to that class of » diseases we must carry over those cases of alternatives of » diarrhea and constipation , of borborism which perhaps » might be classed among intestinal dyspepsies. Thus in cases » of a decided gastro-enteritis, the treatment consists parti- » cularly in long baths of fresh water and weak doses of the » weak springs mixed with milk or broth. The waters taken » thus possess sedative qualities which the springs of Vals as » Strong as those of Vichy should not have.

» I have often prescribed successfully the *Saint-Jean* » water in convalescences of typhus fever when there re- » mained a certain abdominal sensitiveness. Here again, as » in dyspepsies through irritation, there exist some condi- » tions, with a red circle on the tongue, gastric pains after » the ingestion of food or on pressure being applied, a » painful rumbling in walking, which are for the moment » aggravated by the use of the waters, and which, after some » time, being, as it were, changed by the new excess of in- » flamation, are cured as if the irritation produced by the » waters had substituded itself to that which existed be- » fore.

» The same happens in cases of chronic gastritis, with » presumptive swelling of the membranes and which are » cured by dint of patience ofter two or three treatments. » Such cases are now confounded with degeneracy. »

To conclude, have we mentioned every thing about the modication used at Vals for dyspepsies, or about the treatment of dyspepsies with Vals waters taken at a distance from Vals? No, there are many details omitted, many ressources suggested by circumstances, which come to the mind but which could not be mentioned at length in the limits of an article for the papers. But we may assert that the physician will find in the variety of the Vals waters means of cure vainly sought for else where.

If we had but one spring, but one kind of treatment for this malady, a few words would be sufficient to explain the system : but the reader has not forgotten the three groups of springs at Vals of course give rise to a great variety of therapeutic applications. The two groups including the sodic bi-carbonate springs afford a medical graduation not to be found at Vichy. After that graduation there is the *Dominique*, a fero arsenical spring so wonderful in cases of anemy, chlorosis fevers, cachexy, dyspnea, weakness, etc., etc.

Such are the advantages of all those springs that we may say that Vals is not only the first thermal station in France but even in Europe.

(*Gazette des hôpitaux*, 15 *juin* 1865).

DISEASES OF THE LIVER.

Diseases of the liver and sodic bi-carbonate waters are always mentioned together in hydro-mineral as well as in ordinary therapeutics.

It cannot be denied that the Vals waters have a remarkably quick action on the liver and its morbid manifestations. It is surprising to see in how short a time the bilious complexion of numerous dyspeptic patients gets clear and florid.

Diseases of the liver are very numerous at Vals, where so many other complaints may be found, I have been induced therefore to make the following distinction : Is there fever or is therenot? My first care is to clear all doubts as to the complaint being pyretic or apyretic.

Too many physicians for diseases of the liver invariably prescribe mineral water. I never observed any good result if the patient had any symptoms amounting to fewer. Not only I never observed any improvement due to the use of sodic bi-carbonate water, but on the contrary an aggravation of the complaint, and yet at Vals we can choose the weakest springs and the doses prescribed are so little that the effect would be considered insignificant. Such is not the case, the waters are injurious.

But if there be fever we submit the patient for a few days to the use of the *Dominique*. This spring of ferro-arsenical water is one of the most powerful we know of, and produces remarkable sedative effects, which then allow us to prescribe the sodic bi-carbonate waters with advantage.

As a general rule the waters of Vals are never wrongly prescribed in cases of apyretic diseases of the heart. We do not pretend to say that every apyretic complaint is cured; but the treatment by the Vals waters may be applied without any danger.

With the exception of hepatic calculus, materially evident, it is very often difficult to decide the special kind of hepatic disorder one is in presence of. The diseases is evident, something is the matter with the liver, but it is often impossible to distinguish the disease. Between an obstrucion, a clamminess, a swelling, a slight hypertrophy, secret calculus, insensible tumours, nevralgy, etc., etc., the differences all are often very insignificant. Fortunately all these different cases may be treated with the Vals waters, and the physician witnesses the cure of his patient without exactly knowing the disease he is cured of. At last such is my case very often at Vals, not with standing all my efforts to clear away all uncertainty.

The liver, like the other organs, is subject to neuralgy. The symptomatology of the hepatic calculus cholics is not rich in pathognomonic signs. Yet we must give some belief to what the authors say and admit the hepatalogy by analogy as well as the neuralgies of the other organs.

I have been frequently consulted by patients subject to violent pains in the region of the liver and who had never had either icterus or calculus ; it was rationel enough to class such affections among the neuralgies of the liver. For such patients the bi carbonate waters of Vals has always proved salutary. I must conclude by saying that I always obtained good results by beginning the treatment with the springs weakly mineralised, the Saint-Jean for instance, and after that the more powerful springs *La Desirée*, *La Précieuse*, *La Magdeleine*, *La Rigolette*.

(*France médicale*, 29 avril 1865.)

Obstructions ; clamminess swelling, hypertrophy of the liver, chronic hepatites.

The exact value of these words is now admirably ascertained. However having been invented for the wants of the theory of each physician on the nature of the disease, for many physicians those expressions have the same signification. However nobody will give the name of obstruction to a hypertrophy reaching to bones of the ilia ; but there is obstruction, a nominal if not effective swelling, in the beginning when the liver, having not yet outgrown the ribs, is in a state of partial migration.

Whether the disease attack one side or the other of the liver, the waters of Vals possess a remarkable efficacity in diseases

of that organ. I have witnessed wonderful cures, and therefore I regret my inability to give, by a graphic description of what I have seen, that confidence which I feel myself.

In the beginning of the season of 1863, a patient from tne departement of Vaucluse, arrived at Vals. He was thirty seven; his aspect is striking on account of the deep icterical hue of his face. No appetite, frequent vomitings. The most delicate food was loathesome to him. The patient is a tall man and was very stout, when, suddenly and without any known cause, he lost two stone in weight, and within six months declined to state he then was in.

Evacuations rare and hard; constant pains at the level of the right hypochondre. Continual swellings in the abdomen, and great weakness in walking. Medecine taken repeatidly, leeches at the anus, all kinds of bitters, brought on no improvement. the patient was sinking fast.

In a few days, a fortnight, the waters of vals had quite changed him. He left, eating with a hearty appetite and digesting well. The alvine evacuations were regular, strength was restored. No vestige of icterus. The patient continued for some time to drink the water at home; and I heard through a fellow-physician that there had been no relapse.

That was a case of obstruction, swelling of the liver existing sinee six months and which did not seem likely to disappear under whatever treatment might yet be tried.

If the reputation of the waters of Vals in such cases were not established, one would be wonder struck at such rapid effects.

Cases of this description come every day under our observation. It is easy to understand how powerful must be that medication which clears away a disease, against which the most scientific treatment proves quite hopeless.

How is the cure brought on? Is it in consequence of a general perturbation of the organism, or of one of those crises we sometimes behold in the radical cure of certain inveterate diseases? Nothing of the kind: at first the appetite increases a little, sleep follows, strength is restored, the urine and eva-

cuations get regular, and after o few days the cure is completed.

Is this immediate result the general rule?

We may answer in the *affirmative* in cases of obstruction, hepatic clamminess, unaccompanied with molecular alteration in an advanced state, and if to cure the question is to restore appetite, excite the stomach, the duodenum, which, in its turn, probably, excites the choledochus, and little by little comes to the very substance of the liver. If you have to clear the humours of what causes a bilious complexion, absence of appetite, clammy tongue pains about the right hypochondre, constipation, even though all those symptomes may have lasted for several months, the waters of Vals will soon make them disappear. But if the molecular alteration is in an advanced state the cure will not be so quick, the patient is obliged to come to Vals several seasons before ensuring a complete cure. The sooner the treat ment begun the greater the chance of a rapid cure. It must not be forgotten that we are now speaking but of apyretic cases.

Some of these swellings, gastro-hepatic disorders, though they begin without fever, are nevertheless very long and if not property attended to may become dangerous. I may safely assert that the waters of Vals cure them easily.

In my opinion the grand question, for the physician who intends to use the waters of Vals, is not to know since how long the patient has been ill; he must see wheter the disease be acute, feverish. In which case, and in that alone, it may be apprehended that the waters will not cure.

The uncasiness, the absence of sleep, the fever in short might be increased by the use of these waters. Such is not the case, for gastrites dyspepsies and cystitis catharral or not. A factitious irritation occasioned by the waters gives a very good result.

That difference, due to the presence of fever, explains why some authors have propounded the question : at what distance from the beginning ought a liver complaint to be treated by the Vichy waters ? The ansver is generally from eighteen months to four years.

We think we are more in the right in stating that for complaints of the liver, without fever, the Vals waters ought to be taken as soon as possible; the greater the delay the greater the chanes of increasing the malignity of the disease.

As for diseases of the liver accompanied with fever acute or chronic it ought to be attended to in the most appropriate manner, and as soon as any improvement takes place, the Vals waters should be prescribed.

In the course of a treatment againt hypertrophy, or any other affection difficult to define, but without fever, it often happens that the latter may appear. The patient then complains of insomny and cephalagy; the pulse is stronger, quicker, the skin warmer, the tongue more yellow or more inflamed; in which case the physician must, without hesitation, stop the treatment and wait till things have recovered their ordinary state.

This system succeds particularly: in fact is indispensable, in inveterate diseases of the liver, which have resisted many treatments, and are of a doubtful character. Such serious diseases can be cured but by using repeatedly the mineral bi-carbonate waters, which overcom the complaint but by slow degrees, leaving till the very end, in a state of perplexity as to the result both patient and physician.

It is in cases of such gravity that we are happy to prove the power of the waters of Vals. We also often find a symptom which is worth noticing. I mean the œdeme of the extremities, the hypogastric clamminess, the intra-abdominal over-flowing. When the disease has got so far, most generally the baths increase it. The legs get stiffer and stiffer and the patient becomes alarmed. The bathing must be given up under such circumstances; but the waters may be drunk with a good result.

Almost all those who labour under these chronic diseases, with the progress of the complaint, fall into a state of decom position. The lips, and conjunctives are colourless, the skin and the reticular body are flabby, nutrition no longer is normal: hepate vitiato, sanguificatio vitiatur.

The effect of the waters is here complex : on one side they dissolve the tumours or clammy parts, on the other, by arousing the slumbering vitality of the stomach, they enable the digestive tube to produce more nourishing juices. This dissolution of tumours by the Vals waters is not a modern observation.

The celebrated physician of Arles, Serrier, in 1673, wrote in his *Observationes medicæ* article on the tumours of the hypochondria. « Numquid enim multoties est observatum hypochondria prædura mollia evasisse aqua impugnata spiritu resolutivo chalybis, aut *usu aquarun mineralium Valentium* quæ non caliditate et humiditate hos humores superant, sed vi insiti salis et spiritus qui insitum cum materia crassa in hypochondriis resolvit plane planeque discutit? »

This homage to the efficacity of the waters of Vals clearly shows that their solving powers were the very first observed. They are not always the first phenomenon. We often see, on the contrary, the patient recover his appetite, and feel a general improvement in his condition, chiefly due te the better quality of the nourishing juices coming from the digestive tube, without the principal disease, the pathologic alteration, being in the least apparently modified by the use of the Vals waters.

To conclude so various is the action of nature, that after one ar two months no other result has been obtained but an increase of appetite, when in the second or third month of the treatment the disease takes a new aspect and salutary, unexpected modifications take place. The waters act upon the liver itself, and this organ seems te receive all the benefit of the treatment.

Revue de therapeutique medico-chirurgicale,
15 avril, 1865.

The liver as also the kidney, the vesicle of the gall, the cystic and choledocal canals, the bladder, the ureters, the canal of the urethra, may contain a certain quantity of calculus or biliary or urinary gravel.

If sometimes the practician can only guess the presence of this extraneous matter, he may often see with his own eyes the proof of his diagnostic. The liver and the kidney often expel such matter.

The waters of Vals have a direct influence chiefly on such diseases. They stimulate the work of expulsion, which is sometimes painful and sometimes takes place without the patient knowing it. They are the real *criterium* of biliairy or urinary calculus. I have seen at Vals persons who never had ony nephretic or hepatic cholics, but nevertheless laboured under gastro hepatic embarrassements, without knowing the cause. In the middle of the treatment, after some pains in the right side, they ejected through the anus a good deal of calculus.

I do not mean to say that the waters of Vals dissolve the calculus. Indeed it would be hard to explain why large calculus are ejected after a laborious work not unattended with pain, why, for instance, a calculus of 40 or 50 centigr. is ejected during the treatment, after undergoing a partial dissolution. It would appear more natural that it should be ejected, when, in the beginning it was forty times smaller.

Without trying to give an explanation impossible, we may say that the waters change, modifiy the nature of the secretions; the fact is positif. It is not difficult to understand that productions, formed under certain circumstances, and become extraneous matter by the change operated by the waters, are subject to a work of ejection. One of the laws of organism is to get cleared of all extraneous matter.

Many are the learned authors who have denied the dissolutions. Were an authority necessary we might bring forward that of Serrier Trophime, a celebrated doctor of Arles, who in 1673 published two books, the result of long experience; he often mentions the waters of Vals. What he says of the cal-

culus of the kidney may also be applied to the biliary productions: ofter witnessing the efficacity of these waters for urinary calculus, he wrote : « Præscribuntur equidem peritis medicis, præter commemorata præsidia, crebro in hac Provincia (Provence) aquæ vallenses, quibus non frangitur equidem calculus, sed vi sua *obstersiva eluitur a parietibus* renum. »

The latter part of the phrase alludes to the action of the waters ; the calculus, he says, is not broken, dissolved by the water of Vals, but it is ejected by the expulsive, abstersive strength created by the waters.

The waters clear away the bile. Passing through the liver it takes other properties from the mineral elements : What is the influence of this change on the reticular body?

The work of elimination does not always take place immediately. Very often the first glasfulls of mineral water produce about the right hyponchondre a tension, a swelling most painful. The waters cause in the liver an excitation which may be simply inconvenient and may sometimes change into regular cholics. However this may be, it has been observed that the waters have not always, in the same disease, but on different persons, the same effect. Sometimes it takes place soon after taking the waters, sometimes but a long times after.

The period the disease is in modifies of course the symptoms. Thus it is very probable that the ejection of a calculus the size of a pin wil not cause as much pain as the ejection of a calculus the size of a thimble such as I have seen.

However the presence of large and numerous calculus is not always accompanied with great pain. We often see old men whose vesicles are litterally stuffed with such matter, without their health being in the least impaired by it. It is probable that such calculus, after causing some cholics, have settled since a long while, and at last are borne without pain.

Every day we see extraneous matter settling in the reticular body without produces any serious disarder, where as with

some persons, the presence of matter the most inoffensive in appearance causes fatal accidents. It is hard to explain such a phenomenon.

The calculous patient generally shows different symptoms corresponding with the various degrees of the disease. In the beginning, for instance, he gets bilious; his digestion, appetite go up to that time, will become more and more impaired; hence an inevitable change in intestinal functions.

The mouth and tongue are clammy, a vague but painfu-sensation is felt in the epigastric and epihepatic region, a state of somnolent, leziness numbness of the brain, all these symptoms of an hepatic obstruction increase and bring on a general decline of the constitution corresponding with the increase of the calculus, at first mere humours, then modified and at last become solid. At this stage of the disease the symptomalogy is the same, but aggravated. The bilious complexion may become quite icteric. The vague sensation of pain in the hypochondre may become most acute. A simple movement of the body, the least contact with another body may cause great sufferings, sometimes vomitings, general icterus, and the calculus ejected through the mouth much more often than through the anus.

Vals has springs gradually mineralized. It is when the hypochondre becomes distended and suffers from the least dose of the richly mineralised waters, such as the *Précieuse*, *Rigolette*, *Désirée*, *Magdeleine*, etc., it is then that the weak waters of the *Saint-Jean* are indeed useful. It is hard to find a single patient who does not drink them without inconvenience. Then after a few days stronger waters may be taken. Thus by this admirable graduation the most difficult treatment may be begun and continued without interruption.

When the intestinal numbness is great, the abdomen, the flesh flabby, we add a few glassfulls of the *Dominique*, and prescribe shower-baths.

The general condition is always conformable with the above description. We often find calculous patients, who though bilious looking, enjoy however good health, only disturbed

from time to time. Such patients after drinking the strong waters of the *Précieuse, Rigolette, Magdeleine, Désirée, etc.*, feel an immediate relief which continues till the cure is completed, others on the contrary after the first or second day feel acute pains, when they have passed the treatment is resumed, In both cases the result is favorable.

Very often the pains come after the departure of the patient. It is useless to say that those pains are caused by the removal of the calculus and their migration through the reticular body.

We might mention a great many cases; here is one. A nun from Valence (Drôme) after drinking the waters of Vals for a few weeks, on account of certain gastro-abdominal derangements, had during three months stools evacuating continually thousands of little biliary gravel.

Experience tends to prove that, to their expelling powers, the waters of Vals join that of preventing the formation of the calculus, by ejecting appetite clearing away constipation and preventing all congestive tendencies of the liver.

We must acknowledge that these waters have different qualities according to the cases. Such as they are they are influenced by the disease itself. It would be hard for an anemic patient, worn out by the disease, to perceive himsulf the dissolving action of the waters of Vals; but let that patient drink moderately the waters of the *Rigolette* or the *Magdeleine* let him take mineral baths, and by his strength restored, the rosy colour of the mucous humours, his appetite excited, the general comfort he feels, he will soon recognize the invigorating properties of the waters of Vals.

On the contrary the gouty patient, the man suffering from hyperthophy of the heart feel within them the resolving effects of the waters.

In short, it is in all complaints of the hepatic system that the waters of Vals prove most powerful, which may easily be accounted for by their strong mineralisation. However, we must not forget that, for many cures, this high mineralisation would be an obstacle, as it happens every year at Vichy, had

not nature, next to the richest waters in all France, placed the weak waters of the *Saint-Jean*, otherwise the use of the strong waters, by exciting too much, might oblige the patients to leave off the treatment. It is particulary in all complaints of the stomach that physicians and patients appreciate the great advantage of being able to graduate the effects from the weakest to the strongest.

(*Abeille médicale*, 1er mai 1865.)

The pathology of the kidney as that of the liver, is still envelopped in obscurity. The diagnostics necessarily present great uncertainty. We shall therefore choose among such complaints as present constant symptoms.

The authors who have written on the action of the bi-carbonate sodic waters on the urinary system speak only of gravel and vesical or cystite catharra. There is however a pathologic case rather serious, which we cannot expatiate on, and which may be much relieved by the waters of Vals.

Patients affected with this complaint feel a vague pain about the kidney; any pressure causes a painful sensation. Sometimes the want of making water is frequent and sometimes regular and normal. Sometimes its emission cause a painful feeling along the ureter.

The signs afforded by the urine are more important. The latter is often viscous, reddish, ropy. The state of the canal, the signs given by the examination of the bladder, nothing gave rise to the suspicion of such a complaint.

It is in these slight nephretic or ureteric disorders that a little excitation is salutary, the waters of Vals the water of the Saint-Jean in particular. A few glass fulls every day quickly modify the secretion, and in a very short time there is a great improvement. I have often seen such cases. The use of the Saint-Jean notwithstanding its weak mineralisation scarcely one gramme and half of bi-carbonate of soda, creates a certain excitation, fore-sign of the cure. It even often happens that however veak the treatment, it has to be stopped to give to that artificial acuity time to subdue. After several alternatives of this kind the cure is complete.

It is a remarkable fact that the first observations on the action of the waters of Vals bear on the genito-urinary organs.

The quotation we have already mentioned of Trophime Serrier of Arles gives an exact summary of the effect of those waters on the gravel. The waters of Vals do not break, dissolve the calculus, but is ejected by their abstersive powers.

The sand, gravel, Whether they be in the kidney or in the bladder, disappear as it were by enchantment after a few glassfulls of the water of Vals. I have seen a very large number of patients coming to Vals, with their urine thick with reddish sand, and the next day it was quite pure.

What Serrier does not mention, though very important is that, once the gravel ejected no more is formed, provided the waters be drunk for some time. I know several patients suffering from grawel, who could not undergo the least fatigue or change of diet without experiencing pains in the ridney and their urine getling sandy, and now are quite cured of that inconvenience by drinking from time to time, the Vals waters at home.

It would be useless to dwell longer on this subject every body knows that nephretic and hepatic cholics are specially treated with sodic bi-carbonate waters.

It may happen that the calculus is so large that it cannot be ejected through the ducts, even in such a case the waters of Vals are efficacious. In the first place the calculus on account of the modifications caused in the system increases no more ; it is no longer in the same medium; the humours are changed and become normal. On the other hand. the reticular body it self is influenced in another way ; their re-action is not so violent against the presence of the extraneous solid matter. I have often witnessed the result after the use of the waters of Vals.

M. Herpin, of Metz, attributes, in these cases, a great part of success te the carbonic acid contained in the waters, which, penetrating through the whole system, must be most sedative.

In this respect the water of Vals are vastly superior te those of Vichy which have about twice less carbonic acid than the former. The richest springs in carbonic acid at Vals, are : La *Précieuse*, la *Rigolette*, la *Magdeleine*, and la *Désirée*. Thus, not only the taste is agreable, palatable and their virtues digestive but, according to M. Herpin, of Metz, the carbonic acid has a remarkable therapeutic effect in diseases of calculus.

However great the efficacity of the waters of Vals, the patients must not farget that this calculous diathesis is tenacious, very often closely bound up with their very nature, that the first germ of the disease comes not unfrequently from the very springs of life; hence the length of time necessary to cure it. It is also for the same reason that we advise the patients to interrupt the use of the waters, resume it and again interrupt it; it is the grand secret to obtain always an improvement and very often radical cures. At Vals instead of interrupting completely the patient after twenty or thirty days of the waters of the Désirée and Précieuse can drink the water of the Saint-Jean, which in no way irritate the digestive organs and enable him to continue the treatment, as long as he likes.

It is true that in what precedes we supposed the most simple but also the most ordinary case of calculus or gravel. It happens sometimes that the excessive sensibility, we mentioned when speaking of hepatic calculous, is not less intense in cases of calculus of the kidney and bladder. In such cases the waters of the *Saint-Jean* are particularly profitable; their passage through the urinary organs is less irritable than that of more richly mineralised waters. The stomach digests them better. They prefare the system for a more energetic medication. We cannot recommend too much to the attention of our fellow-physicians this peculiar graduation of the waters of Vals, which allows them to be prescribed to every age without the least fear of accident.

We schall now speak of another application of the waters of Vals, though in a somewhat similar case.

Is it necessary that the calculous diathesis be really urical; in short that there be in the urinary organs or in the blood acids that should be neutralised to prescribe the waters of Vals? We do not think so. The scarcity of calculus of oxalate of calx and even of amoniaco magnesian phosphate, does not authorise us to form an opinion founded on many observations; but I have seen some cases of white gravel cleared away with the urine by the action of the waters of Vals, which is sufficient to justify that assertion.

The dissolving action of the waters has become more than problematic, their expulsive action cannot be contested. It is by acting on the scurf of the blood rather than on the stone that they are efficacious. It is not in their chemical relation with the composition of the stone. Otherwise how could we account for the incontestable action of other waters of quite a different composition.

The iatro-chemists may apprehend that, under the influence of waters so rich in soda, the white gravel might increate by continual deposits; but experience proves the inanity of such apprehensions. Thus, the little town of Vals numbers more than *three hundred* persons among its 4,000 inhabitants who *daily use meneral water at their meals*; now not one complains of gravel. I mistake, during twelve years', practice in the country, I saw a woman affected with an enormous amoniaco-magnesian calculus, as large as an ordinary orange. My fellow-physicians of Aubenas and myself operated the poor creature at the hospital; she was cured and is still living. Now this woman in her whole life had not drunk two quarts of mineral water.

There is, in the action of the waters of Vals on the system, a vital influence which does not obey the known laws of chemestry.

If the ruling diatheris causes azotic matter to accumulate about my articulations wilhout intermittence, whereas my neighbour's become clear after an ejection not less considerable of the same matter; if, after ejecting for a long while gravel with my urine, i see it dissapear suddenly, and that

soon after my articulations get stiff, it must be acknowledged that i am not exactly like my neighbour nor like the other gouty patients of the globe; for they do not all feel that persistancy of the tophacy deposits, nor the displacing of the different products, which are sometimes in the articulations and sometimes in the urine.

In what am i different from my neighbour? that difference i feel, but whence does it arise? who can answer. We live in the same conditions, our age, diet are alike; the manifestations of our disease are alone different.

Since our system presents differences, modified by what wecall diathesis, since, though of the same nature, our disease does not show exactly the same symptoms, is it not natural to suppose that the remedy, practically efficacious in such a disease, will at first have the same action on both our diseases, and then an action which will vary according to certain laws unknown, but inherent to different constitution of both.

Without having recourse to an explication that could not prove satisfactory, how is it that i eject white gravel and my neighbour red? We both make stone, such is our common disorder. Why should not the mineral water, that give a better digestion, more perspiration and sleep, prevent my making that white or red stone, which is evidently the result of some defect of nutrition, secretion or some other function influenced by the waters?

The action of the waters is universal, and felt by every system. Do we know what are the modification, made by the waters of Vals in the composition of the chyle, on the absorbing vessels and different organs of secretion? We say that they excite and we dwell on the idea. Yes, the water of Vals excites my stomach, liver, kidney and heart; circulation and secretion are more rapide in those organs; but that excitation does not extend to the brain to which on the contrary it restores calm and sleep.

Such effects seem to contradict one another; one part is excited and the other calmed. Why not be cured of the stone

whether it be white or red? With the same waters of Vals do we not cure both the obese man, who though eating little increase enormously the adipous membranes, and the lean man, who eating as much and even more is but skin and bone.

We find another argument in chemestry. M. Herpin, de Metz, tells us that calculus formed with phosphate of calx and amoniaco-magnesiam phosphate, insoluble in alkali are not soin carbonic acid. Now M. Durand-Fardel found in our bi-carbonate waters a very remarkable proportion of carbonic acid, though at the same time they are the richest in bi-carbonate of soda in all France.

Revue therapeutique chirurgico-médicale
(15 mai 1865.)

However various the aspects of the gout the semeiology of the diabetis is not less so. Yet we cannot say of the latter what is said of the former *Tollere nodosam* nescit medicina podagram. On the contrary medeciue is very efficacious in the treatment of diabetis, and the waters of Vals are an im portant means of relieving such patients. Whe can observe a great many cases of diabetis at Vals, and we have the satisfaction to see the patients if not quite cured considerably improved.

This improvement is first an increase of appetite to which the patients were not accustomed. Thirst diminishes, the mouth less dry, strength is greater, the skin, more soft.

Generally i let the patients follow a mixt regimen, which pleases them, particularly if up to that time they have follow strictly the ordinary treatment, that is, if they have been deprived of sweet or feculent dishes.

The use of the waters of Vals destroys, in a certain degree, the glycogenic influence of the sweets taken by the patient. Of course the urine continue to dissolve sugar, but what matter? To destroy their sugar by depriving the patient of every sweet food is no cure.

Under the influence of the waters of Vals, on the contrary,

the quantity of sugar diminishes, little by little, and this diminution always coincides with a great improvement. Such is the general march of the treatment at Vals on diabetic patients, however the result varies according to the degree of the disease. How many diabetic sufferers who without knowing it see the beginning of the neturn of their health! How many others with such dreadfal complications and in such a state of weakness that we prescribe but very little doses of those waters that some drink in abundance.

If the state of the patient be a little cachexic i add a little of the ferro arsenical water of the *Dominique*. For instance, if the patient drinks ten or twelve glasses of mineral water per day i prescribe four or five of the spring *Dominique*.

Experience has proved to me that this addition is very efficacious in this disease. Numerous facts establish that efficacity here is one.

There is in the neighbourhood of Vals a man who, since 25 or 27 years has had an insatiable passion for the mineral waters; winter and summer he was to be seen drinking away, at the alkaline springs. Which did not prevent him from being very fond of his bottle and drinking many a bumper with a bosom friend or two; evidently he found that all this did not disagree with him. However his health, though sturdy, was giving way. Thoracic accidents had been observed and his sight was greatly impaired.

About seven years ago our veteran (he is now 60) went to consult a physician, who found that he was suffering from the very complaint that he was treating so long of his own accord. Our man has since added to the alkalin waters gluten bread and abstains from any sweet food. The disease is following its course as formerly, diabetis is still there, but the Vals waters prolong life. The poor fellow wanders about the establishment, complaining to every one of the state of his health, his sight in particular, but still he goes on and leads a pretty agreable life. Could he have lived so long, and he may live some years more had he not taken the waters of Vals.

France médicale 6 mai 1865.

The Waters of Vals can be obtained of :

Messrs. E. GALLAIS & Co., 27, Margaret street, Regent street.

— W. BEST & SONS, 22, Henrietta street, Cavendish square.

— COVERDALE & Co., 11, London street, City.

And of all respectable Chemists in the Kingdom.

Each bottle bears a label, of wich the following is a model :—

The Name of the Spring is on the Copper cap.

SPRINGS
—
PRÉCIEUSE
ST-JEAN
DÉSIRÉE

NATURAL MINERAL WATERS
OF
VALS
AUTHORISED BY THE STATE.

SPRINGS
—
MAGDELEINE
RIGOLETTE
DOMINIQUE

The Waters of Vals are agreeable to the taste; they are drunk pure, or mixed with the ordinary drink, if taken at meal hours.

Good for the stomach, they are sovereign in cases of debility of that organ; they act energetically on the digestive functions, prevent greatly general atony, and relieve exhausted vigour. Weak and fatigued stomachs must make of these waters their ordinary drink.

The Waters of Vals are the richest mineral waters known in France; they are particularly efficacious in obstructions of the liver and the spleen, affections of the loins, pale colours, etc., etc.

Veritable digestive Pills of Vals, made with the Salts extracted from the Springs.

Each bottle bears a label, of wich the following is a model :—

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