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NEW MANUAL

OF

ALKALOIDAL THERAPEUTICS.

FROM THE FRENCH OF DR. AD. BURGGRÆVE.

TRANSLATED BY

C. C. P. SILVA, M. D.,

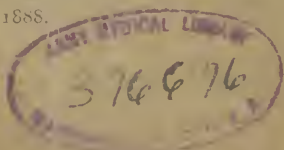
Professor Therapeutics, College Physicians and Surgeons, Chicago;
Professor Therapeutics, Chicago Ophthalmological College,
Professor Therapeutics, Chicago School of Dermatology,
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CHICAGO

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NEW MANUAL

— OF —

ALKALOIDAL THERAPEUTICS.

TRANSLATOR'S PREFACE.

The increasing interest manifested in the application of the alkaloids in therapeutics, and the dearth of information upon the subject, is our excuse for the accompanying work.

Prof. Ad. Burggræve, M.D., of Ghent, Belgium, has made rapid strides in the direction of giving to therapeutics a positiveness that it has not heretofore enjoyed; and it remains for American physicians to take up the work that he has begun, and by constant clinical experimentation to give as much of certainty as is possible, to the hitherto uncertain and unsatisfactory, and yet of all, probably, the most necessary of medical studies.

We do not wish to be held responsible for the (in our estimation) vagaries or garrulity of Dr. Burggræve, nor do we in any manner endorse the attempt at the formation of a new school (Dosimetric).

We make no distinction as between the vitalist or organicist; such a distinction is unnecessary, and the label which any doctor pastes upon his forehead, stamps him as at once unscientific, mercenary and narrow minded.

We do no violence to our reason, however, when we say that we can easily understand that if an affection

is taken in its incipiency it is more easily controlled, than when it has had a longer time to develop.

We can also understand that certain symptoms precede organic lesions, prior to the demonstrable existence of the lesions themselves.

We endorse, therefore, the early use of simple principles, small doses and frequent repetition, as by this means the most accurate clinical observations can be made; and we believe with Prof. Burggræve, in the future of alkaloidal medication, both as a jugulant and a curative of disease.

We are of the opinion that an improvement may be made in the dosage fixed by Prof. Burggræve. Our experience and that of others, demonstrating that excellent results are obtained from much smaller doses of some of the more powerful drugs, such as aconitine, hyoscine, hyoscyamine, atropine, etc., while larger doses are necessary of some others—veratrine and pilocarpine, for instance; the use of the alkaloids, however, in the granular form renders the increasing or diminishing of doses a matter of but little moment.

We have followed the text as closely as possible in making our translation, and without further apology, we are,

Yours truly,

THE TRANSLATORS.

AUTHOR'S PREFACE.

The edition of 1873, of the "New Manual of Dosimetric Medicine," having been rapidly exhausted, I resolved to make a new edition, but as Boileau has said:

"A score of times spent in revision, would be better employed in making new work."

Consequently, I determined to re-write my work entire.

Besides, the views upon Dosimetry of that time, were not as clear as they are to-day. They were still obscured by the inkstand of polypharmacy. Now our needs and our destination are apparent.

What Dosimetric medicine proposes, is the jugulation of acute diseases in their infancy; to lift healing out of the quagmire which now engulfs the confidence and security of the practitioner.

Is it surprising, that before the almost absolute impotency of allopathy [we find the proof of this in the expectant attitude in acute cases assumed by a large number of physicians], charlatanism rears its head and invades the domain of medicine, as does the marauder upon the battle field?

In consequence of the numerous alterations in texture [which we cannot prevent, because of the lack of an efficient therapeutics], the progress of medicine has become almost impossible, so we are informed by the organicist school; and daily they increase the difficulty by the excess of anatomo-pathological baggage which they multiply upon it. [But they remind us of those Indian kings who went to war so encumbered with chariots that they were easily conquered by a less numerous, and less embarrassed enemy].

Hippocrates did not recognize this pseudo-scientific accoutrement. He was a vitalist, and it is this which causes him to be still considered as the father of medicine, although his paternity dates from the cradle of humanity.

The moment that man, in his necessity, became an observer of nature, he found remedies and diseases almost side by side. And he employed simple herbs without doubting that they contained remarkable and valuable essences [as the ore contains precious metals].

Prior to the discovery of cinchona, physicians cured

intermittent fevers with plants which they obtained from marshy places. [The Peruvian tree itself, inhabits the marshy regions of South America.*] Now we use quinine, and these fevers are more easily controlled. No progressive physician would think of dispensing with its use. The same applies to the continued fevers. [And should we abandon these to what is called 'vis medicatrix naturæ. As if nature in these fevers more than in the intermittents, could cure without assistance].

It is because we are a surgeon, that we conceived the idea of jugulating fever.

Observing so many operations performed under the best of conditions, and with all necessary care, fail in consequence of the so-called tramutic fever,** we have tried to avert this latter by a series of means, such as the excito-motors or alkaloids, quinine, etc.; thus in the beginning of inflammations we administer phosphoric acid and strychnine sulphate, to prevent vascular paresis.

The inflammatory process depends upon the stasis of the blood in the irritated tissues and upon the elevation of temperature, whence the products of exudation, suppuration or others, to which are due the heteromorphous or anatomo-pathological lesions.

All phlegmasia should be prevented by the nervines. This is a very important point which dominates all therapeutics of acute affections, and forms the basis for our Dosimetric system. The fever once declared should be abated by the defervescent alkaloids—aconi-

*Our author is evidently in error, as the cinchona tree is not found below 2,600 feet above the sea level.—*Ency. Brit.*

**This designation implies a fatality which does not exist, for many accidents and grave operations occur without fever, provided that we use proper therapeutic precautions.

tine, veratrine and digitaline, whose doses should be exactly determined.

At first our efforts were made in the dark. The writers on materia-medica had determined the maximum doses; that is, those upon which we could not trespass without danger of toxic effects; and to be certain in our experiments, we determined to use ourself as the subject. Thus we took aconitine in the dose of half a milligramme at intervals of 15 minutes, and having previously recorded the temperature and the pulse, we were enabled to ascertain how far we could push the drug to attain a degree of saturation of the organism, where the pulse and the temperature were depressed below their normal physiological condition. From these experiments we concluded as follows: that if in apyrexia, we should administer as much as 4 milligrammes, for instance, in fevers, it should be carried as many times farther, as the pulse and temperature exceeds the normal physiological standard. Consequently, if 2 milligrammes are necessary to depress the animal heat 2 deg. C., it would be necessary to give 16 milligrammes, and sometimes more, to depress it 4 deg. C., for we must consider idiosyncracies, or individual impressionability.

Clinical results have confirmed this calculation. Thus our surgical cases affected with traumatic fever, with a temperature of 40 or 41 deg. Cent., and a pulse of 120, after 10, sometimes 20 granules of aconitine of $\frac{1}{2}$ milligramme each, administered one by one, at intervals of 15 or 30 minutes, the fever subsided, regardless of the gravity of the accident.

The first rule in Dosimetria was then established. It is, however, necessary to push the drug to obtain a therapeutic or curative effect, and this at intervals as much shorter as the disease reaches its dynamic or

vital period; that is, that in an acute disease, we must use an acute treatment; and in a chronic disease a chronic treatment.

The second rule is that of dominant and variant treatment. The first being applicable to the cause of the disease; the second, to its effects. We can appreciate the motive for this distinction. The morbid cause once known, the treatment is the same without variation. Thus, constitutional syphilis demands the iodides; gouty rheumatism the alkalies, etc. But the effects of these diseases vary according to the individuals or organs which they affect. Thus, at times we combat pain, at others spasm, and again, exudations or hyper-secretions. The proverb, "sub-lata causa tollitur effectus," is always true, but meanwhile the individual suffers and we must relieve him, else the tissues become disorganized. This is the reason why the remedies must be varied with the cause.

Dosimetric medicine has been stigmatized as being purely symptomatic in character. This is entirely unfounded, for while we admit to a reasonable symptomology, at the same time our first attention is given to the study and treatment of the cause, observing the anatomical, physiological and pathological conditions.

We may be allowed to reproduce here the following lines of Dr. Spring in the preface of his "Symptomology, or Treatise on Morbid Accidents." [A book which physicians cannot study too much.]

"A species of disfavor has rested for a long time upon symptomology. If it does not justify itself it at least explains itself, by the tendency proper to the medicine of our day. By the forcible concentration of our attention upon the anatomic lesions, we have gradually habituated ourselves to regard the disturbances

of function as insignificant reflexes, variable and uncertain. And as it was precisely against symptomatic medicine (Homœopathy, q. v.) that we had to fight, it is only natural that the study of symptoms should be wiped out with it in a common reprobation.

“And yet the more sincere the admiration that we profess for the progress realized by means of anatomical, microscopical and chemical works, the more are we convinced of the insufficiency of the diagnosis, and of a therapeutics purely symptomatic; and yet it is none the less true that these functional disturbances remain the principal source of solicitude to both physician and patient.

“Alas! it is so rare to cure, and always so urgent to relieve. The pain, the spasm, the paralysis, all nervous disorders, are known, to the most purely scientific physicians, to be purely functional symptoms.

“And in chronic diseases—incurable mostly—what is to be done, even by the most enlightened physician, except to search out and fill the symptomatic indications?

“I say nothing of the obstacles which, in everyday practice, oppose themselves to a methodic and complete exploration of the organs, and consequently, to the establishment of a correct diagnosis of the lesion. Finally, it is necessary to demonstrate how much the rational diagnosis, made beforehand, and based entirely upon the symptoms, facilitates in every case the material and physical diagnosis?”

We shall go farther than the professor which the University of Liege has lost and, with him a most brilliant luminary. The material or physical diagnosis is of no avail once the organic lesion is established, except to prove our impotence in the face of the disease.

We except those surgical cases where we must have a physical and material treatment [for it is always this word which is thrown at the physician—who has depended the most upon these forces]; but even then symptoms should be depended upon; that is to say, upon the vitality.

Let us explain.

The cure of symptoms is not always made by the use of similars, or by contraries.

In Dosimetric medicine the symptoms are not followed, but interpreted to satisfy the requirements of nature. A symptom is always a disordered condition; it is anti-physiological, and which demands immediate cessation, so as to re-establish the normal state. An individual is affected with an intense intestinal colic; should it always be relieved by opiates? It is augmented on the contrary if, as frequently occurs, there is paralysis. We should then have recourse to strychnine. What then, should be our guide? Clinical experience.

We recur again to Prof. Spring:

“The physiological method has been powerful enough to overthrow secular errors; it has laid bare the weakness of a series of pathological doctrines; but on the other hand—we must confess—it has builded but very little so far.

“Physiology, as chemistry in physics, when transplanted upon medicine, is irresistible as regards simple facts, but in the clinic the facts are always complex. The role of the pure science is limited then in establishing problems, and giving promises for the future.

“How many talented men have we seen succumb without honor, in seeking for the medicine of the future?

“Besides, is it not true that the physiologists resemble the systematists, who are at present looked upon with suspicion?

“Should we observe a physiological formula, or any general doctrine: in either case we run the risk of perverting the facts, enslaving observation, and forcing conclusions.

“The true medicine is even to-day that of Hippocrates, of Sydenham, of Stoll; the science which is maintained upon the large field of observation, and which discountenances systems and theories.

“To render observation more complete and more faithful, it acknowledges the co-operation of the physical and natural sciences; to generalize, it accepts its general precepts; in its march it adheres to it constantly, but it never loses sight of the circumstance that its merits depend upon collective and crude truths.”

We could not express better the progress of Dosimetric medicine, “which is maintained upon the large field of clinical experience, and does not obey systems or theories.”

It is clinical experience which enables us to recognize *sthenia* and *asthenia*; instead of abandoning the vital forces to exhaustion by a medication either inactive or debilitating, it teaches the necessity of fortifying the system by the excito-motors. One of the most potent acts for good, of the Dosimetric method consists in the use of strychnine [arseniate and sulphate], at the head of the anti-phlogistics; and also in the use of the deffervescents [aconitine, veratrine, etc.] in small doses, repeated frequently until the therapeutic, or curative effect is obtained; to have administered the simples as a touch-stone to test the true character of diseases.

Such are the principles which will be found in the new "Manual," provided that our health and strength is preserved so as to permit of our finishing our work.

We propose following the plan here described:

A.—First, we have given attention to the sthenic diseases; where we have demonstrated that asthenia always exists, as is also the case in the physiological order itself; thus when the stomach suffers from hunger, it becomes irritated, injected and terminates by inflammation if it is not furnished with food. Can we say that in this case that there is sthenia rather than asthenia? The same occurs with fevers in general. They all require the use of excito-motors in the beginning. When this principle is well understood, medicine will flourish.

Congestions are subject to the same general law as inflammations. And it is from this standpoint that we have studied the three orders of diseases.

B.—Next, we have studied diatheses or vices of nutrition, connecting them with alterations of vitality.

C.—We have particularly insisted upon thermometry. The thermometer is in fact the manometer of the physician, because with it he recognizes the degree of intra-vascular pressure. It indicates to him when to use the excito-motors to lessen the fever and prevent the organic disorders which, so frequently, prove fatal.

We have reproduced the formulated laws of Wunderlich, in his works on thermometry, which indicate to the practitioner a certain manner of recognizing sthenic or asthenic diseases.

The saying, "guess if you can and choose if you dare," is not now applicable; formerly this was perplexing to the practitioner, and gave rise to many discussions,

unfortunately, in most cases, over the graves of the patients. The physician of to-day has a sure guide in the thermometer.

D.—Finally, we have devoted a long chapter to urology, which constitutes a certain element in diagnosis.

The ancients knew of it, but their science failed in recognizing the nature of the sediments. They limited their analysis to the physical characteristics; that is, to turbidity and limpidity.

We diagnose now the state of the blood by the urine. It is therefore necessary to call the attention of our readers, earnestly, to this fact.

In the olden times they had uromancists and chiromancists: who pretended to read in the urine the fortunes of the inquirer, as in the lines of the hand. The amount of money, however, indicated to be paid for the service, was the clearest information obtained. It is not so with the urology of our day; it is now a certain science, based upon chemistry and physiology.

In submitting our new "Manual," we thank those who have given to us their adherence and aid in the past, and we offer words of encouragement to those who are withheld from testing our method by the fear of ridicule, or from shame at renegading former opinions, we say to them, there is no shame in progressing.

DR. BURGGRÆVE.

INTRODUCTION.

THE ALKALOIDAL TREATMENT OF ACUTE DISEASES.—
In order to properly describe this treatment, we separate diseases into vital and organic, or anatomo-pathologic.

It is in their primary stage or dynamic period, that these diseases should be jugulated.

The anatomo-pathological school has done absolutely nothing, except to settle itself upon a mass of material lesions, which nosological framework, we are convinced, would have vanished if they had studied the utterances of Dr. Amedee Latour, whose words we have taken as a motto for our book, and which constitutes the most formal condemnation of the organicist school. "Medicine proper has deviated from its natural course, it has lost sight of its noble aim, that of relieving or of healing. Therapeutics is thrown back upon this last plan.

"Without therapeutics, meanwhile, the physician becomes only an inutile naturalist, passing his life in studying, classifying and naming the diseases of man.

"It is therapeutics which raises and ennobles our art; for it alone has an aim; and I add it was to it alone that the possibility is due of our art being thought of as a science."—*Union Medical*.

It should be understood that prior to the advent of Dosimetry, the doctrine of the jugulation of acute diseases was applied only to intermittent fevers—quinine and its various salts being employed for that purpose. Dosimetry has proved that the same may

be accomplished with the remittent and continued fevers, by the same means; that is to say, the alkaloids.

It is but true to say of Hahnemann, that he saw this possibility, but imperfectly, when he established his law of semblances, independently of the fact, however, that his law is not constant. His diminution of doses is grave even to mysticism. Without this eccentricity, which his disciples have again exaggerated, the honor of the reform in therapeutics should be accorded him. No one questions, in the least, the fact that he opened the eyes of the profession to pharmaco-dynamics, since until his time they had plodded, as a blind man, in the ruts of empiricism.

In making it apparent that aconite and veratrum would cause an abatement of heat in fevers equally as well as blood-letting, Hahneman has rendered a great service to both physician and patient: to the first by rendering his cures more certain; to the second, by economising his discomforts.

He prepared thus for the advent of Dosimetry. All honor to the first axe stroke in the thickets of the official codex.

Dosimetry employs only those medicaments whose action is certain, rapid and agreeable, after the precepts of Celsus in surgery: "Tuto, cito, jucunde."

There is no reason or pretext why any physician should refuse to adopt this method.

The physician is the minister of nature. *Naturæ minister* [et non magister, as some pretend]. He should then accomplish his whole duty: now is it not contrary to his sense of duty to enfeeble the organism when it is using its best efforts to repel a morbid agent?

Two innovators of our day, Brown and Broussais, are found in opposition. Which of them is in the right and which wrong? We answer, both. .

Brown, however, had a better understanding of nature than Broussais, for behind sthenia he could recognize asthenia. But his remedial agents were crude; instead of inciting they excited. That is to say, that he opposed to an irritation a new irritation.

If instead of the incendiary medicaments of allopathy, he had had the defervescent alkaloids at his disposition, great good would have been accomplished by reduced suffering to humanity.

Dosimetry has accomplished this. It is its force. It is due to this that it is adopted by all progressive physicians, excluding those which adhere to the organicist school, which preaches organicism, and which departs more and more from the doctrine of Hyppocrates, to wit: vitalism.

What is life? Bichat said, it is resistance to death. This definition has been resented, as it resolves one unknown by another—and yet it is all that can be said. When a city is besieged, and the enemy makes a breach in its fortifications, the defenders re-enforce this point, behind the old ramparts they erect new barricades, so does nature. It fortifies the attacked points, doubling and tripling the vital resistance.

Broussais was then in error in advising phlebotomy in all cases, as was Brown also, by over-stimulating the vital forces of the affected organs. With these remarks we take up our subject.

ALKALOIDAL TREATMENT OF FEVERS.

CHAPTER I.

One of the manifestations of health is a proper degree of heat. When the heat is diminished, it is sickness; when it disappears, it is death; when it is increased, it is vital exhaustion. Continuing our comparison, it is like a fortress which in defending itself, exhausts its ammunition.

It is known to-day that the animal heat is dependent upon the vaso-motor nervous system; all the causes which tend to disturb it produce fever.

Now, among these causes, some are more depressing than others, some are even capable of destroying the heat or the action of the vaso-motor system.

MIASMATIC FEVERS—PERNICIOUS FEVERS—ASIATIC CHOLERA.—Under the name of "Fever Algide," according to Torti's designation, we have a pernicious fever, whose cold stage occupies the greatest portion of the paroxysm.

It is a nervous apoplexy, where reaction is impossible or insufficient.

The fever is said to be masked, when it takes the form of another malady [in the organ or organic apparatus, or else is localized].

At the commencement of our medical career, in 1826, as an interne in the civil hospital at Ghent, we had occasion to observe an epidemic of pernicious fever, showing all of these forms.

This fever, paludal in character, was caused by the digging, during the summer, of a canal traversing the secular marshes to the sea.

Among the sick received at the city hospital, some were brought in unconscious, in a comatose apoplectiform state; some were delirious, others were spitting blood; others again presented the symptoms of pleurisy, pneumonia, etc., which symptoms terminated with the acces.

There was nothing but the pulse and the temperature to aid in determining the nature of the affection; in fact, the pulse was rapid and much depressed.

During the period of reaction the temperature rose to 106 deg. F. (41 deg. C.) Quinine sulphate at the proper time broke up the paroxysms. All those with whom this precaution was not taken, died.

The autopsy revealed venous congestion of the organs, but no products of inflammation were present, whether exudation or suppuration.

Arseniate of quinine is a marvelous agent against these algid fevers, associated with strychnine, aconitine and veratrine.

When these medicaments are administered during the hot stage, this is shortened, and the congestions prevented. The algid stage consists in a paralysis of the vaso-motor nervous system, hence the indication for the strychnia, preferably the arseniate.

Aconitine and veratrine act as defervescents, and the quinine as an anti-periodic.

ASIATIC CHOLERA.—The algid fever of 1826 was the forerunner of the Asiatic cholera; in fact, in 1832, the scourge made its halting place with us, after traversing Russia from east to west, stopping successively at Moscow, St. Petersburg and Varsoovia, arriving at the Rhine by way of Breslau and Berlin.

Our notes of that itinary, prove that cholera is a miasmatic disease, scattering its germs far and wide,

and following a determined course, as we have observed in every epidemic.

The disease shows itself sometimes by premonitory symptoms which are characterized by abdominal derangement, and sometimes by bursting out suddenly with violent cramps, a lowering of the peripheral temperature to a point which seems like ice upon the outside, whilst the patient is burning within.

For calming the thirst and epigastric burning, small pieces of ice in the mouth and a bladder of ice upon the epigastrium.

The reaction being established, it should be maintained by the administration of the hydro-ferro-cyanate of quinine [one granule every half hour]. This treatment should be continued so long as the circulation and temperature remains abnormal.

If, on the contrary, pending the period of reaction, the heat remains excessive and ascends to 104° to 106° F. (40° or 41° cent.) then give the defervescent alkaloids: aconitine and veratrine. [One granule of each every hour, until the temperature is reduced.]

As soon as the vomiting shall have ceased, the patient should be fed with "bouillon" and milk, salted.

It cannot be denied that there exists a marked analogy between Asiatic cholera and pernicious intermittent fevers. The late Dr. Everard, who observed two epidemics conjoined with these fevers at St. Petersburg, reported some cases with notes, which we reproduce here, because few physicians are acquainted with them. We give his own words:

"The absorbent ability of the intestines was totally suspended, and that organ in place of absorbing, only secreted the materials for the evacuations.

"The urine was suppressed from the beginning, and the disease was without abatement during the 48

hours, between its invasion and the death of the patient.

“The prostration of the forces only moderated the violence of the evacuations. The patient, extremely depressed by the fatigue and the exhaustion attendant upon his efforts, when he was not torn by the violent suffering of these efforts, from the first when I saw him, was entirely deprived of all power of thought or reflection; there was no disturbance of the intellectual faculties, no delirium, but a dullness which increased without ceasing; nearly an hour before his death, he did not appear afraid, nor to care about his end.”

Having been present in four epidemics of Asiatic cholera, we are able to judge of the truth of the picture which we have presented to our readers. We have been able also to satisfy ourselves as to how much of the treatment employed at that time was harmful. Pending the first period of the epidemic the mortality was 80 per cent. Upon the decline this descended to 20 per cent., but then there was little or no medication used. [See our work: *Le Cholera Indien*, etc.]

Without being able to furnish the facts in this regard, we think that the alkaloidal treatment would have had more favorable results. This treatment should consist in intestinal washing with seidlitz salt* after each vomiting, [a teaspoonful in a glass of orange-flower water], between the vomitings, strychnine sulphate and hyoscyamine, [one granule of each every 15 minutes.]

*The seidlitz salt which our author refers to, is a dehydrated sulphate of magnesium, mixed with a portion of citric acid and sugar, it is then granulated.—[Trans.]

Dr. Everard continues: "At a little distance from the cholera hospital, was a place used for ordinary disease. The contingent which attended the intermittent fevers was large enough in that way, to be able to pass with facility from a patient suffering with cholera to those who were overtaken with a violent attack of intermittent fever; I have examined and recognized the similarity which existed between the invasion of a well-marked acute intermittent fever and that of the paroxysm of cholera.

"In fact, what occurs when an attack of intermittent fever takes place? the skin becomes cold, the pulse gradually weakens, until it is hardly perceptible, the features are pinched, the eyes are ringed [encircled with dark rings], and the voice feeble and trembling. If the rigors increase, the respirations becomes anxious, a pale and bluish color is noticed about the lips and hands, there is nausea and even vomiting; let us suppose then a strong attack of an aggravation of all these symptoms and then we shall have a faithful picture of the beginning of a confirmed case of cholera.

"If the paroxysm whose symptoms I have just related as being of the most violent, even if it is a case of intermittent fever, we see frequently some local affection of the gastro-intestinal mucous membrane, with all the secondary symptoms depending upon it, such as cerebral congestion and a typhoid tendency. I have seen a great number of illustrations, and this was precisely the characteristic point of the fatal epidemic that appeared in Graeining in 1826. I draw especially your attention to this point that was observed particularly at the grand hospital of Crasno-Cello, and that is that the patients attacked with intermittent fever exhibited a tendency to a typhoid

state as we have noticed in those attacked with cholera. What a remarkable analogy between these two affections! Cholera differs from the intermittent fever by its greater intensity and the longer duration of the cold stage, the principal vital organs are so strongly affected that reaction is necessarily slow and difficult, and that a second paroxysm is almost impossible, yet if we observe well a patient with cholera we can notice clearly painful efforts, repeated cramps and vomit, which appear at intervals more or less regular, alternating with calm and relief. This fact is one of the highest importance, and all physicians whose attention I have called to it have promptly been convinced of its reality."

We give here the treatment instituted at St. Petersburg on four patients affected with cholera. This treatment was especially directed against the intermittent stage, an injection composed of 1-20 of a grain of alcoholic extract of nux vomica and from 2 to 4 grains of quinine sulphate in starch water with a small quantity of camphor was used, These injections were repeated every two hours until six or eight were used. This treatment being successful, it was administered to twenty other patients; a marked improvement was soon perceived, the typhoid symptoms failed to appear "for the simple reason," says Dr. Everard, "after an attack of cholera the stomach is left considerably irritated, and to introduce into it irritant medicaments, is to lead it to prostration and even gangrene. In the treatment of the grave fevers which appear in the region of the Caucasus, the quinine sulphate is pushed in enormous doses, and yet it fails quite frequently; I think that in these cases as well as those of cholera, that the stomach is very much impaired and so cannot profit by the remedy, The rec-

tum then should be utilized for the administration of the medicines. I hope that later experiments will confirm this theory."

We have made these experiments, and they have proved to us that small doses of quinine repeated at short intervals succeed much better than large doses at long intervals.

YELLOW FEVER.—This fever is also due to miasmatic causes. It is ordinarily found near the mouths of the large rivers in South America. Its invasion is announced by a violent head-ache, general malais, lassitude, prostration, and alternate rigors and dry heat; the face and eyes are suffused, the tongue which is red on the edges and dry, is covered with a yellow coating which afterwards turns to brown, deglutition is difficult, the epigastrium is tender and hard, there is frequent persistent vomiting of substances at first bilious and then black, colic, fetid and liquid dejections bilious at first, black afterwards. Soon after, the symptoms of ataxia appear and the patient succumbs in the midst of phenomena of putrid decomposition.

We notice by these symptoms that it is a case of violent poisoning, bleeding would be useless, because it is the blood which is decomposed; the application of leeches and cupping upon points more severely affected are useful as derivatives. As in cholera we should immediately proceed with intestinal washing with seidlitz salt, and acidulated mixtures [with lemon and vinegar], and by the stomach we should administer the caffeine arseniate, strychnine sulphate and hyoscyamine, to arrest the spasm of that organ, and the headache [a granule of each every half hour in the interval of vomiting], as soon as the reaction appears we maintain it by quinine [arseniate or hydro-

ferro-cyanate], (one granule every half hour); if the temperature should be maintained at 104° to 106° F. (40° or 41° cent.) aconitine and veratrine should be given, [one granule of each, together, every half hour.]

This plan of treatment was pursued in Brazil, by a physician who was the first to introduce the alkaloidal treatment into that country, and who reported that the results were universally favorable, for the reason that by this course of treatment both the cause and effect of the disease received attention and proper medication.

TYPHOID FEVER.—Typhoid is an adynamic and a taxic fever due to an animal micro-organism. We see it developed wherever people are crowded together for a long time, in hospitals, prisons, camps and on board ships. Fatigue, insufficient nourishment and demoralization tend to increase its ravages. General stupor, fixed and glassy eyes, dorsal decubitus, impossibility of movement, agitating dreams, comatose, muscular tremor, fluginosity, bad breath and fetid dejections, petechia, hæmorrhagic transudations, all these symptoms indicate decomposition of the blood.

The treatment suggested by this aggregation of symptoms should be this: From the beginning we should insist upon intestinal washing with the seidlitz salt, and continued as long as the mouth is not cleaned and the dejecta are fetid. For this purpose we should use a beverage of elder blossoms with the seidlitz salt in the proportion of a tablespoonful of the salt to a pint of the infusion sweetened with lemon syrup, to be used a tumbler full every hour.

In the interval, strychnine arseniate veratrine and caffeine arseniate should be administered [one gran-

ule of each] every 15 minutes, this is to combat the adynamic and ataxic states. Once the reaction is made, that is when the pulse has been fully developed, it should be sustained by quinine [arseniate and hydro-ferro-cyanate, a granule of each, together, every half hour, until we cease to notice differences in temperature at different hours in the day; it seldom exceeds 102.25° F. (39° cent). However, should it ascend to 104° or 106° F. (40° or 41° cent.), veratrine and aconitine should be used to diminish the heat and calm the nervous symptoms. Intestinal washing should be continued every morning, a teaspoonful of seidlitz salt in a glass of water.

For a drink, cold water, which is gratifying to the patient, in mouthfuls to prevent the introduction of too much fluid into the blood, and by this means, prevent disturbances of the urinary organs. If the urine is scanty and ammoniacal, digitaline should be used [one granule every hour], alternated with aconitine and veratrine, if the latter are yet necessary. The patient should be well nourished, and as soon as possible, to avoid debility, bouillon and old wine should be used by tablespoonfuls or mouthfuls; with this treatment and diet the fever is dissipated in a short time, instead of allowing it to run for weeks as was customary during the expectant method.

The moment that we admit that typhoid is a paroxysmal fever [of which there is no doubt, for there is a difference of 1 to $1\frac{1}{2}$ degrees between morning and evening temperatures, and that the patient experiences cold and heat alternately], it should be treated as such, that is by defervescent and anti-periodic alkaloids. The strychnine arseniate is necessary from the beginning of the fever, because there is great prostration, and, before all, vitality should be raised.

The aborting of typhoid is with us a demonstrated fact, having frequently treated this affection in our hospital clinics; we have even treated patients who came to us in the second week of the fever and where the hebetude of mind and muscular tremors suggested that the meninges were already involved, and thanks to the administration of strychnine arseniate, caffeine arseniate, veratrine and digitaline pro re nata, not seldom all these symptoms gradually disappeared and the patients recovered. As we stated in the beginning of this book, the physician is the minister of nature, it is necessary that nature should aid him. It is in these urgent moments that an energetic medication is indispensable.

DIPHTHERIA.—Diphtheria is characterized by membranous exudations which were at first considered as inflammatory products; now we know them to be micro-organisms attached to the mucous membranes; it is then a parasitic affection the same as the "oidium" of the grape vine.

This disease presents generally an epidemic or contagious character. We must admit that the germs of the parasites diffused in the air attaching themselves to the mucous membranes by their suckers, produce there this exudation or membrane which serves as a receptacle or nidus, where they develop or multiply, enlarging the field of contagion. It is necessary then to destroy the germs of the parasites and to repair the disorders which they produce.

The first indication is fulfilled by the administration of calcium sulphide, the paraciticide par excellence, as it has been proved in the treatment of the grape vines [eight to ten granules per day], and lemon juice as a mouth wash to dissolve the membrane [false].

Referring to the general poisoning [these micro-organisms being usually poisonous, is evidence, that it is these little centers or infusoria, which produce this type of fever], it should be eliminated by the emetics, tartar-emetic or emetine, accordingly as the patients are adults or infants [one granule every 15 minutes until the desired effect is gained], and intestinal washing by the seidlitz salt, a teaspoonful in a glass of water.

The fever should be combatted by the arseniate of strychnine and the hydro-ferro-cyanate of quinine, the first against the prostration and the second against the paroxysms [one granule of each, together, every 15 minutes until sedative effects are obtained].

If symptoms of spasm are observed, principally in the organs of respiration and deglutition, they should be combatted by hyoscyamine and aconitine [one granule of each, together, every half hour].

FIRST, GLANDERS.—Among diphtheritic affections, we must first count glanders. This disease seldom spontaneously or primarily attacks man, but generally contracted from diseased horses. The schneiderian membrane is of a brownish red color, wrinkled in consequence of the enlargement of the muciparous glands, which secretes a glutinous fluid, whitish at first, then yellowish, and which is extremely contagious. There is lachrymation due to the extending of the irritation to the nasal duct. The neighboring lymphatic ganglia are also swollen.

We must not confound glanders with coryza where the secretion is serous, although it at times becomes acrid and causes excoriations of the lips and nares. The coryza proceeds from the frontal or maxillary sinuses, ordinarily, whose membrane is almost wholly serous; the glanders effects, on the contrary only the

mucous glands, sometimes it effects the lungs where the morbid principle has been introduced through the respiratory tract [pulmonary glanders].

The fever which accompanies this disease is very high and should be combatted from the beginning with strychnine arseniate and quinine arseniate to avoid the symptoms of prostration and periodicity, for as in all fevers of absorption there are paroxysms and aggravations [one granule every half hour of each and then every hour as the fever subsides].

The nostrils should be washed with chlorine water and seidlitz salt used as a refrigerant.

SECOND, APTHOUS OR PSEUDO-MEMBRANOUS STOMATITIS.—These are due to the same cause [micro-organisms], and require the same treatment. This form of diphtheria is not necessarily epidemic, for the micro-zymes are formed in the exudations resulting from local irritation or a lack of cleanliness. If it effects nursing infants we should medicate the nurses and apply only topical remedies to the infants.

THIRD, PSEUDO-MEMBRANOUS ANGINA.—This is equally characterized by the formation of patches, polypoid concretions and false membrane due to parasites, as the polypus to the polyps, producing the occlusion of the respiratory apperatures and threatening suffocation.

The treatment should not be very active; the fauces should be bathed with pure lemon juice, and calcium sulphide should be administered internally until the intestinal gases develop the odor of hydrogen sulphide. This gas is far from being injurious, on the contrary it inhibits the formation of ammoniacal compounds [carbonates], which induce a typhoid state through decomposition of the blood. The intestinal washing with seidlitz salt must be employed and the

fever combatted by aconitine and veratrine, and the paroxysms interrupted by quinine arseniate [one granule of each every half hour until sedative effects are produced].

FOURTH, CROUP.—This affection may be primitive, or it may be the result of extension from the fauces. In the first instance it is a very dangerous disease, in view of the difficulty of reaching the false membranes which sometimes extend through all the tracheal ramifications. From the beginning tartar-emetic or emetine should be administered [one granule of one or the other every 15 minutes until the desired effect is obtained], as soon as vomiting is produced, calcium sulphide to the extent of producing sulph-hydric gases should be administered.

The paroxysmal fever should be controlled by quinine hydroferrocyanate, one granule every half hour until the fever subsides.

FIFTH, PERTUSSIS.—We place whooping cough among the diphtherias because it affects the respiratory organs and is essentially contagious.

This disease proceeds by paroxysms, and although there is no false membrane the secretion is glutinous and is detached with difficulty, hence the cough proceeds by long inspirations, having the peculiar sound resembling the crowing of a cock. We think that we are able to conclude from our observations that the whooping cough is due to parasites of the genus depenicilliums, which attach themselves to the mucous of the larynx and trachea, and which the vibratile epithelium fails to detach.

On the trachea of an infant three years of age, a victim of a paroxysm of asthma produced by whooping-cough, we have found on the apex of the vibratile

prolongations these animalculi which, like the carmine, have demonstrated the Brownien movement.

What aids this opinion is that the sulphurous preparations calm the paroxysms of whooping-cough. We have also administered with success calcium sulphide in doses of 3 or 4 granules a day for a child three or four years old.

The fever that accompanies whooping-cough and whose paroxysms may prove fatal should be controlled by aconitine and quinine hydroferrocyanate, one granule of each in the intervals of repose from the cough. Narcotics should be prescribed, but the expectoration may be facilitated by the syrup of ipicac if broncho-pneumonia occurs which is characterized by the sibbilent rals and moist crepitation, difficulty of breathing, redness of the face, pulse 110, temperature 104° F. (40° cent.), etc., it should be combatted actively by revulsives to the lower extremities, seidlitz salt to unload the bowels, and veratrine to the point of toleration, one granule every half hour until this end is gained. The danger once passed we should return to quinine hydroferrocyanate as a prophylactic against relapse, one granule every half hour until complete sedation.

Heretofore whooping-cough has been rebellious to all means of our art, either because these have been misapplied or not applied at all, for it is not any treatment of the disease if only expectorants are used. In good practice it is necessary to attack both the cause and the effect, and this is accomplished by the alkaloidal medication.

Whooping-cough affecting the epidemic form finds numerous victims among young children, although adults are also prone to its attacks.

SIXTH, ŒDEMA OF THE GLOTTIS OR VIRULENT LARYNGITIS.—This disease may be promptly fatal as we have seen in consequence of bites in cases of rabid hydrophobia. It is not necessary that the rabies should be clearly defined, the subject, when the wound is in the way of cicatrization [which indicates the incubation more or less long of the rabic virus], is suddenly attacked with a constriction of the larynx, with hoarseness and expulsion of minute bubbles, sibilant respiration rather embarrassed, injected face and the eyes assuming an anxious expression which characterizes the stridulous affections. The skin is hot, 104° F. (40° cent.) and the pulse rapid, small and accelerated. The patient is in a state of extraordinary agitation, throws himself out of bed, etc.; principally the paroxysms come on at night.

The second or third paroxysm is generally fatal, because they terminate in œdema of the glottis. Properly speaking, there is no diphtheria, but the cause, a poison, resembles it.

It is useless to cauterize the wound for then cicatrization commences, although we may do so as a cautionary measure; internally we should administer quinine hydroferrocyanate, digitaline and hyoscyamine to calm the accesses and diminish the tendency to congestion of the heart, one granule of each every 15 minutes until sedation; this being obtained we may reinforce it by a potion of chloral and morphine hydro-chlorate, one granule of the latter in a tablespoonful of the syrup of chloral, to be repeated *pro re nata*.

Should suffocation be again impending, the same medication should be used.

This limits the treatment against rabies whose specific cause is yet unknown.

This terrible affection has been considered [although supposed to be spontaneous in the dog], as a form of hysteria; it is possible that the genetic excitation may influence it, for rabies seldom appears in dogs that live a free life as in the orient. In all cases camphor monobromated is indicated, when the slightest excitation of this kind appears, one granule every half hour until sedative effects are obtained. The animal should be plunged into cold water sufficiently so as to cover his hind quarters.

The most rational thing, however, would be not to condemn these animals to a life against nature, and restrain their numbers by taxation. It is chiefly fancy dogs which are kept by caprice that the genetic excitation may proceed to the point of hydrophobia. It is, therefore, these animals which should be suppressed.

An Italian physician, Dr. Marochetti, has ascertained that in rabies on each side of the frenum of the tongue there is a small vesicle containing a certain liquid and which he considers as the reservoirs for the rabic virus. These vesicles are nothing else than the salivary ducts whose excretory part has been obstructed. We know that the virus is transmitted with the saliva, hence the prudential indication of cauterizing these vesicles. The dyers' broom-weed [*Genesta tinctoria*], has been considered a prophylactic against rabies, probably it acts by virtue of its purgative and diuretic properties.

ANGINA PECTORIS.—Angina pectoris is an affection analagous to diphtheria, for in spite of the tracheal spasm the bronchi are obstructed by a glutinous fluid and one of the results may be pulmonary œdema. The disease sometimes takes the epidemic form by virtue of certain miasmatic conditions of the atmos-

phere; it proceeds by paroxysms and is characterized by a retro-sternal spasm with sibilant respiration, dyspnæ and palpitations. It should not be confounded with sternalgia, which will be treated under the head of neuralgia.

The treatment of angina pectoris is quinine hydroferrocyanate, digitaline and hyoscyamine, one granule of each every half hour until sedation.

Locally, a camphorated fly-blister on the chest and the seidlitz salt as an intestinal revulsive.

ERUPTIVE FEVERS.—These fevers are distinguished by their contagium and some of them, as the variola, by their inoculability. These means were supposed to be prophylactic and as against a second attack, but experience has demonstrated that the virulence still persists but not so great in degree.

The vaccination, first brought into general use by Jenner, seems to extend its prophylactic and modifying power to all eruptive and even some exudative diseases, thus these diseases have been less frequent and less virulent since the use of vaccination has become almost universal.

All eruptive fevers are characterized by a period of incubation in direct ratio to the intensity of the poisoning and which is manifested by general prostration, feelings of lassitude, dull headache, pain over the loins, turbid urine, etc. We may foresee what kind of eruptive fever we are to deal with by the premonitory symptoms. Thus, if it is a case of variola, the cerebral and abdominal symptoms will predominate; if scarlet fever, the throat symptoms and difficulty of deglutition will be most conspicuous; if measles on the other hand, coryza, lachrymation, bronchial cough, disturbances of respiration and slight sibilant rals will be the salient symptoms..

In this period of the disease intestinal washing with seidlitz salt every morning and the administration of strychnine arseniate with the object of giving tone to the economy and assisting in bringing out the eruption and in the elimination of the virus by the skin, for we know that in scanty eruptions there is the greatest danger; the fever is more intense and the internal disturbance graver; we see then meningitis, tonsilitis, and pleuro-pneumonia as the consequence of an imperfect eruption.

We notice on the other hand that the external eruption coincides with an internal eruption as in variola, for the pustules are formed in the mouth, fauces and digestive and respiratory organs, hence the necessity for promoting the eruption of the external integument in order to relieve the internal integument.

In the period of incubation of the eruptive fevers the vital force should be strengthened by strychnine arseniate [one granule every three hours until the eruption has developed].

If the fever is very high, temperature 104° to 106° F. (40° or 41° cent.), pulse 120, aconitine and veratrine should be given [one granule of each every half hour until defervescence], this in addition to the above treatment, there is then a complete and general amelioration, the skin becomes moist, pulse soft, the temperature descends to 102.25° or 100.5° F. (39° or 38° cent.), the eruption appears without agitation, delirium, or disturbance of respiration or digestion. In cases of delirium digitaline is indicated as in nervous delirium [one granule every half hour until sedation]. Digitaline acts in the general improvement by diuresis and diaphoresis.

In cases where remissions of the fever occur, which indicates a severe depression of the vital forces,

quinine arseniate and hydroferrocyanate should be given [one granule every half hour] as long as the thermometer indicates variations of temperature. The quinine acts as an excito-motor and prevents internal congestions.

It would be a grave mistake as well as dangerous to wait until there is apyrexia before administering the febrifuge.

SEPTICEMIA OR PUTRID INFECTION.—Septicemic fever or the fever due to the absorption of putrid matter is observed in large wounds and operations where decomposing tissues generate an extremely penetrating virus which exercises upon the blood and upon the organs a deleterious action. The effects of this decomposition are extremely rapid.

The fever is manifested by violent rigors alternating with dry heat [pulse 120, temperature 104° to 106° F. 40° to 41° cent.], and at the end of two or three paroxysms the patient becomes almost unrecognizable from emaciation, his color becomes icteric, indicating an affection of the liver. It is not the bile that has entered the blood, it is rather the putrid matter which has decomposed this fluid. The tissues have lost their cohesiveness, and hence a general ecchymotic state; there are dreams and delirium, successive engorgement of the lungs, articulations, muscles and abdominal viscera occurs; the kidneys, spleen and liver are surrounded by edematous tissue and multiple abscesses, which commence by a species of nuclei, produced by the infected red and white globules of the blood.

It generates itself, therefore, not according to the ancient belief, by purulent metastases, or the conversion of the blood into pus, but by true and latent inflammations originating locally, and at the same

time as true idiopathic abscesses, presenting all of their characteristics.

We can produce these abscesses artificially by introducing into the blood vessels of an animal these broken down blood clots. These slight particles, start to traverse the circulatory current and enlarge themselves like the sea pebbles. Simulating the globules which obstruct the capillaries, these break and go to dispose themselves in the surrounding cellular tissues.

In septicemia, it is these altered globules of the blood which perform the office of emboli.

But before this there is a vital alteration due to the introduction of ichor.

It is this alteration which should be prevented, either by removing the ichor as soon as it is formed by currents of water, or by the preventing its forming by the use of antiseptics, such as phenique acid, camphorated alcohol, the solutions of permanganate of potassium, salicylic acid, etc.

Among these dressings, we describe those of lead, because these form upon the surface of the sore a bed of black sulphuret, which prevents the putrid decomposition or the formation of ammoniacal carbonates, which being absorbed, gives rise to the adynamia and ataxia which is characteristic of septicemia.

In these latter days, we have attributed the putrid fermentation to the small living corpuscles or organisms to which we have given the names *microzymes*, *microzoaires*, *vibrions*, *bacteria*. That these micro-organizations exist there is no doubt, but we find them in our blood, our humors, and the same in our tissues, in the physiological state as well as the pathological state, and we cannot see why it should produce fever more in the latter state than in the former.

It is always necessary then to seek the disturbance or alteration of the vitality; the proof is that in finding this we may subside the fever by appropriate treatment, even though it depends upon the commencement of an organic alteration. Thus the typhoid fever of the wounded as well as the miasmatic, may be combatted by the same means, that is to say, the alkaloids.

It is then necessary to introduce a prophylactic treatment. According to M. Chassagnac, the administration of the tincture of aconite for some days before a grave operation is termed surgical training.

For the same reason we give aconitine as a preventive of the fever of absorption [five to six granules a day]. After the operation the forces of the patient are sustained by wine and albuminous aliments to prevent the impoverishment of the blood and the intra vascular relaxation, which would have the effect of hastening the absorption of putrid matter. This is contrary to the restricted diet recommended by some surgeons.

Quassine and arseniate of strychnine are administered to render the digestion more active [three or four granules per day at meal times]. In this manner we preserve the blood and the tissues in a state of tonicity, and prevent intra or extra vascular absorption or inflation. At the least sign of rigor or chill administer quinine [hydroferrocyanate or arseniate] and sometimes both when an intoxication is foreseen [one granule of each every half hour].

The question of septicemia may at present be considered as settled. It is not the pus which produces the fever, but the putrid matter or septic virus which alters the blood and depresses the vitality. It is necessary then, not to enfeeble these more, but to fortify

them. In a word, it is necessary to sustain the vitality. The stimulants fixed or diffusible are by themselves not adapted to produce this result. Virginia snake-root irritates the digestive mucous membrane, and cinchona tans it and increases thirst, and the dryness of the tongue which inhibits the elimination of the putrid virus, for the diarrhœa in these cases is but a manifestation of indigestion.

The alkaloidal granules should be used, for they are easily absorbed in consequence of their solubility, and produce neither irritation nor oppression.

The principal point is to gauge the heat or degree of intravascular pressure by the thermometer, as the machinist uses the manometer. The moment that the temperature rises to 104° F. [40° C.], or beyond, it should be made to descend to 102.25°—100.75° F. [39°—38° C.] by means of aconitine and veratrine [one granule of each every half hour].

If the heart beats strongly [120 per minute], it should be moderated by digitaline [one granule every hour]. For if digitalis is, as said by the celebrated English physician Cullen, the opium of the heart, it should not be lost sight of that it also stupefies as opium, which makes it a dangerous agent to use in a crude form when the arterial pulsations are weak as occurs in miasmatic poisoning. Digitaline should be used instead in connection with a fixed substance as the arseniate of iron or strychnine [one granule of each, together or separately, every half hour].

CONGESTIONS—HÆMORRHAGES.—These actions differ according as their location is in the arterial or venous capillary system.

The first exists at the expense of the red blood [arterial], and are the forerunners of an effort which has been named *molimen hæmorrhagicum*. The con-

gested parts are engorged, and we notice a glowing sensation or of bubbling up, of tenesmus, as in the active hæmorrhoidal flux.

In the second case, on the contrary, the blood is black or venous, and we notice symptoms of torpor and dullness.

Hence two treatments: by the defervescents and by the excitants.

Such a hæmorrhagic congestion is combatted by bloodletting, digitaline, aconitine, the defervescents, in a word; others by the fixed tonics, such as the ferruginous, above all the hydroferrocyanate of quinine, which constitutes likewise a powerful anti-hæmorrhagic.

The active congestions excite strongly the vitality, and hæmorrhage in this case is more beneficial than hurtful, as we observe in epistaxis in the course of inflammatory fevers. Under these circumstances an hæmoptesis becomes a salutary influence, as when there exists a material cause, as tubercles, because they relieve the congestion. It is consequently not always prudent to cut these short by the astringents, but rather control them by digitaline and ergotin [one granule of each every half hour].

Venous congestion is asphyxious in its nature, because the red globules of the blood denied movement, are not sufficiently oxydized. These are the congestions which generate the algid fevers, of which we have already spoken [see fevers].

CEREBRAL CONGESTIONS—APOPLEXIES.—The cerebral congestions are for the most part venous, because of the capillaries being very thin, they escape more easily the congestive effort. The white substance which they traverse is very compact; when they are produced it is then rather in the gray matter. Unhappily,

this is preparatory to cerebral softening. Persons of a sanguine temperament, as those who work much with the head [brain], should cool and liquefy the blood by the daily use of seidlitz salt. Persons who suffer from migraine will be benefited by the use of caffeine [arseniate, sulphate].

[Two granules of each every half hour until the cessation of the headache].

The venous cerebral congestions are established gradually in the inter-vertebral sinus; they are also preceded by hæmorrhoidal fluxes. In these cases it is necessary to abate the congestion of the hæmorrhoidal vessels by means of leeches to the anus. The arseniate of iron should be used to improve the condition of the blood. [See hæmorrhoidal diathesis.]

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[Arseniate of iron five or six granules a day.] We would associate this with hyoscyamine or atropine so as to combat the anal tenesmus [two granules per day].

But the action of these alkaloids on the eyes and brain should be watched and discontinued in case that they produce torpor.

APOPLECTIFORM CEREBRAL FEVER.—This fever is frequently due to acute malaria, and manifests itself by all the symptoms of apoplexy, preceded by regular paroxysms, all the symptoms disappearing at intervals: the careful observer may recognize the three stages of fever—cold, heat and sweat.

General blood-letting may be fatal in the first stage; it is necessary then to wait until it subsides and be governed by the stage of reaction. If the temperature rises above 102.25° F. [39° C.], and the pulse 100, aconitine and veratrine should be used [one granule of each every half hour until defervescence].

Immediately after the paroxysm, quinine [sulphate, arseniate, hydroferrocyanate] should be adminis-

tered to prevent another paroxysm which may prove fatal [one granule every half hour until the functions become normal]; seidlitz salt should also be administered as a refrigerant [three or four teaspoonfuls in a glass of water, followed by two or three glasses of cold water].

Serous apoplexy was admitted by the old writers, this not being shown outwardly, the face being rather pale, the same means used for venous congestion holds good.

As regards nervous apoplexy, which consists of a paralysis of the brain, even in the absence of all congestion, it requires the administration of arseniate of strychnine [one granule every half hour] until restoration of the cerebral functions—that is, until the pulse which was hardly perceptible becomes easily felt and the patient regains consciousness.

These paralyzes may simulate death, and galvanism should be resorted to to establish a diagnosis. X

CEREBRAL HÆMORRHAGE.—This may be suddenly fatal when affecting a vessel of large calibre, and very frequently it is attributed to a disease of the arterial system, atheromatous degenerations [see organic lesions]. The patient should not be abandoned, but on the contrary, all the assistance possible should be given; ice should be applied to the head, enemata with sodium chloride should be given; depletion should not be practiced, or if used it should be only after the patient has regained consciousness.

The employment of arseniate of strychnine in small doses will have the effect of gradually restoring the movements, acting less upon the nerve centers than against the disease. Magendie has already observed that it is upon the myotelite which the strychnine acts first and foremost. To give large doses of *nux vomica*, is to expose the patient to new congestions.

Persons predisposed to cerebral congestions should submit themselves to a saline regime, for the purpose of rendering the nervous substance more dense. The more hard the tissues the more difficulty the blood has in penetrating it. Especially if the brain is active. In these conditions the organ fatigues itself less. For more than 30 years we have made daily use of seidlitz salts, and we have exerted a cerebral activity which has surprised ourself. We have been able to work with impunity from five to six hours consecutively without the least fatigue, and thought gushes like a spring of water from the ground. Without it we should not be able to accomplish so much. Our detractors will say that its quality is not commensurate with its quantity. Of this, evidently, we are not constituted the judge; but we will say it is melancholy to see fine minds terminated unexpectedly in their career from the failure to apply hygienic rules. We can say that these great spirits have not died naturally, but they have killed themselves. We propose to live as long as possible, in order to prove our modesty.

OCULAR CONGESTIONS — AMBLYOPIA—AMAUROSIS.— These congestions are noticed particularly in drinkers of ardent spirits, and end by causing a sclerotic state—that is to say—the conversion of the retina into a dense, pearly tissue, from which the nerve filaments and capillary blood vessels have disappeared. We can say that the disease at this stage is irreparable. When this condition does not exist, we may hope to re-establish the sight completely, or at least to prevent blindness.

We give to this end phosphoric acid and strychnine sulphate [until as many as 20 granules of each per day are taken, increasing gradually].

The amaurotic amblyopia may be a symptom of intestinal worms. In this case the suspensive action of

the pneumogastric must be admitted, and it should be remembered that the ciliary nerves are a part of the ganglionic chain of the great sympathetic.

It is proper in these cases to employ the arseniate of strychnine conjointly with santonine.

[Of each from one granule, giving four to six granules per day according to age, and upon the following day a dessertspoonful of castor oil.]

If there is spasm we add a granule of hyoscyamine.

OTIC CONGESTIONS—ROARING IN THE EARS.—These congestions accompany troubles of co-ordination of movement, when they are profound—that is to say—when they extend as far as the lobule of the cerebellum. We know that Flourens, by destroying the semi-circular canals in rabbits and pigeons, has determined that regular motion and flight were impossible. The roaring of the ears of a congestive nature is calmed by the use of digitaline and strychnine.

[One granule of each together, three or four times a day.]

Against dryness in the ears we employ vapor baths, oil of sweet almonds.

We maintain the bowels in a soluble condition by the use of seidlitz salt.

PULMONARY CONGESTIONS.—These are active or passive; the former are announced by a reaction (*molimen hæmorrhagicum*) with a sensation, “bouillonment” of the chest, injected face, glaring eyes, frequent vibrant pulse, painful pricking cough, dyspnœa, spumous and bloody expectoration. In this case general bloodletting, sulphate of strychnine, aconitine and veratrine should be used [one granule of each every half hour]. At the same time iced drinks should be administered, and the intestinal canal washed with the seidlitz salt. The latter depends upon a hindrance

to the free course of the blood, or to the diminution of the pulmonary capacity from hepatization, tubercles, and finally lacerations, and erosions made by clots. There is difficulty of respiration threatening suffocation, pallor of the face, cold extremities, and transpiration by expression. As soon as the blood clots are rejected the pulmonary tissue should be constricted by strychnine arseniate, tannic acid, ergotin and quinine (arseniate, hydroferrocyanate) [one granule of each every fifteen minutes], acid drinks, absolute repose and seidlitz salts.

After the arrest of the pulmonary hæmorrhage reaction may take place with elevation of temperature 102° to 104° F. (39° to 40° C.)—hard pulse, and the return of all premonitory symptoms of hæmoptesis. Bloodletting should be practiced and the defervescent administered, aconitine or veratrine and digitaline [one granule of each every half hour until sedation].

The masked pulmonary fever demands the use of quinine, the arseniate and hydroferrocyanate to be preferred. This fever is recognized by its abrupt development, the hygienic conditions of the place and the three stages of cold, heat and sweat. As soon as the cold stage is past the arseniate and hydroferrocyanate of quinine should be used [one granule of each every half hour until cessation of the symptoms].

Hæmoptesis due to an organic disease, should be combated by digitaline, arseniate of iron and the mineral acids [one granule of each every half hour; 15 to 20 drops of the solution per chloride of iron in a tablespoonful of iced water several times a day, according to the importance of the hæmorrhage]. Ice applied to the chest and seidlitz salt as a refrigerant.

CARDIAC CONGESTIONS (active and passive).—The active congestions of the heart predisposed to organic

disease of this organ, depending not infrequently upon moral causes, they are suddenly ushered in by a sensation of retro-sternal constriction, followed by a disordered action of the heart as though it was about to escape from the chest. If this condition persists and the pulse remains hard, general blood-letting should be practiced seconded by digitaline and strychnine arseniate, for it is important to regulate the contractions of the heart by restoring tone to the organ [one granule of each until sedation].

It is a great mistake to depend upon phlebotomy alone, for it only opposes mechanical accidents.

The so called neuroses of the heart is nothing more or less than the disturbance inflicted upon rythmical movements of this organ by moral causes.

The congestions of the heart do not occur the same as in other parenchymatous organs, such as the lungs and liver; they take place in its cavities, auricles or ventricles, and which terminate by distention; hence the use of the digitaline and strychnine to calm and at the same time to give tone to the center of circulation.

In consequence of the terrible events of 1792-1793, a great many cases of cardiac affection occurred which permitted Dr. Corvisart to produce his immortal work upon this subject.

It is probable that if digitaline and strychnine had then been known he would have availed himself of them. We shall treat later of inflammation of the heart and its envelopes.

HÆPATIC CONGESTIONS.—These congestions are rarely active, and they depend upon stasis of the blood of the portal circulation. The liver being deprived of the power of impulsion, nature has furnished it with a contractile or dartoid capsule (Capsule of Glisson). Notwithstanding this the liver is easily engorged,

and should be assisted by quasseine and arseniate of strychnine, which promote the flow of bile into the duodenum. [Four to six granules per day, the quasseine at meal times, the strychnine in the intervals].

The intestinal canal should be washed by the seidlitz salt, which will also maintain the fluidity of the blood, upon the lack of which engorgements of the liver depend. These engorgements compress the hepatic cells and interfere with the elimination of biliary principles, hence the frequency of jaundice.

The engorgements of the liver may also depend upon obstruction of the sub-hepatic veins from cardiac affections, when strychnine and digitaline are indicated. (See Congestions of the Heart).

These congestions, when accompanied by pain in the side may simulate pleuro-dynia, the differentiation being made by percussion and the splenic hue or old ivory color. Splenic congestion frequently gives rise to hæmatemesis by regurgitation in the gastro-splenic veins. The same treatment as in hepatic congestions.

Miasmatic poison produces congestion of the liver and spleen by hindering the oxidation of the red globules, probably because of the carburetted hydrogen gas existing in the air and the water of the marshes, for it is as much by intestinal absorption as by pulmonary absorption, that the gases are introduced into the blood.

The arseniate of soda and arseniate of quinine are the agents to be used in this case.

[Twelve granules of each in doses of two each in the intervals between meals].

SPLenic CONGESTIONS.—These congestions give rise to hæmatemesis from reflux of the blood in the gastro-splenic veins. The same treatment is indicated as in congestion of the liver.

Malaria may produce congestion of the liver and of the spleen by inhibiting the oxidation of the red globules. The arseniate of soda and of quinine are the best modifiers to be employed in these cases, a dozen granules of each per day, taken two at a time in the intervals between meals.

After the discovery of quinine and its administration in intermittent fevers, the prescribers of cinchona in substance tried to show that it (quinine) produces engorgements of the liver and spleen. It is a very singular reasoning of those who had been used to administering excessive doses of Peruvian bark. Our experience is, on the other hand, that dropsical effusions from obstruction of the liver and spleen, have become less frequent since the use of the bark in substance has been discarded.

In abdominal engorgements alkalies are generally used in excess, such as the Bourboule water. We know that these waters are thermal (146° F.; 54° C.), and contain bi-carbonate, chloride and arseniate of sodium, bi-carbonate of the prot-oxide of iron and free carbonic acid. These are the elements (inorganic) contained in the blood in a normal state, which are found to be deficient in engorgement of the portal circulation. Hence the picturesque saying, "Vena portarum, porta malarum." Those whose means do not admit of the use of the mineral waters at their source, may use as a substitute the seidlitz salt and the arseniates as mentioned above.

INTESTINAL CONGESTIONS.—These depend generally upon a rapid refrigeration of the periphery of the body, chiefly the feet. They may also be due to a miasmatic agent; as the cholera and pernicious fevers. The cyanosis diffuses gradually in all the organs and upon the surface of the body.

Frictions should be immediately made in order to produce reaction, but no artificial heat should be used, which would rather hasten mortification, as it is noticed in congelation. The patient should be warmly but lightly covered—with an eiderdown spread, for instance—and the friction should be made under cover with a warming liquid—brandy, aromatic vinegar, etc.

Ethereal mixtures should be abstained from, for they would increase the asphyxia of the blood, and the essential oils (peppermint and chamomile), for they burn the mucous membranes; on the contrary we should administer to the patient, who is burning inwardly, small pieces of ice, and thus attempt to stay the flame. The colic should be combatted by hyoscyamine and strychnine [one granule of each, together, every 15 or 30 minutes].

Explaining what appears contradictory in this treatment, we bring to notice that in the colic there is a rupture of the equilibrium between the circular and longitudinal muscular fibers. It is, as in saturnine colic, where good results are obtained by the association of hyoscyamine and strychnine.

To favor the onward movement of the intestinal contents, a tablespoonful of olive oil should be administered; this in preference to castor oil, because the latter contains an acid principle unless it is strictly fresh, and it is but seldom found so in the drug stores.

The congestion of the larger intestine provokes dysentery, which generally appears in damp seasons and in low, miasmatic places; or it may depend upon overcrowding, as in barracks, camps, etc., when it assumes a contagious character; it is the sub-mucous coat which is most frequently engorged, and this gives to the intestine a lardaceous consistency; the mucous membrane is red and covered with erosions, because

of the acid intestinal matters which flow over it. These disorders may be avoided by hygienic care, the daily washing of the intestine with the seidlitz salt and the use of hyoscyamine and strychnine to regulate the alvine evacuations.

The paludal diathesis should be combatted by the arseniate or hydroferrocyanate of quinine; in case of an hæmorrhoidal attack, leeches should be applied to the anus, general sponging with vinegar and water is very useful in these cases.

Alimentation should be substantial, but of small bulk, avoiding flatulent articles of diet.

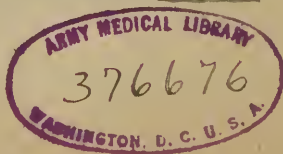
The use of opiates should be abstained from, as they augment the intestinal obstruction, thus retaining the toxic matters—gaseous or solid—whose absorption might produce a typhoid state. Seidlitz salt largely diluted with water, to become more readily digestible, should be the only beverage allowed to the patient.

RENAL CONGESTION.—Congestion of the kidney is generally accompanied by spasm, or nephritic colic, which often terminates by the emission of bloody urine. This is due frequently to exposure of the feet to cold in susceptible people.

It should be controlled by warm baths and the use of hyoscyamine and digitaline [one granule of each every 30 minutes until cessation of the nephritic spasm], and the emission of healthy urine. If hyoscyamine and digitaline fail, strychnine sulphate should be added.

VESICAL CONGESTIONS.—Inasmuch as this receptacle, the bladder, with its membranous walls, is less liable to congestions than the kidneys, its role is simply passive.

The congestions are characterized by painful spasm of the neck, which in turn provokes paralysis of the bladder; and which demands in addition to hyoscy-



mine and strychnine, the use of cicutine for its treatment [of each one granule every 30 minutes]. Baths and the seid litz salt should also be employed. Surgical means are to be resorted to only as a dernier resort; forced catheterization is an operation of risk at all times, and should be used with the greatest precaution.

Renal and vesical congestions are frequently due to miasmatic causes, when they demand the use of quinine hydroferrocyanate [one granule every half hour until there is a cessation of the symptoms].

X
UTERINE CONGESTIONS.—This may be due to orgasm of the uterus, which is rather a repulsive than an attractive force. It is because the natural congestions cannot take place that the organ suffers. It should be controlled by warm baths, ergotin, strychnine, cicutine, and hyoscamine [one granule of each three or four times a day].

If the dysmenorrhœa is due to chloral-anemia, iron arseniate should be used [one granule 10 or 12 times a day]. The application of leeches or dry cupping in these cases is useful as a derivative, and the inside of the thighs are the places of election.

X
NERVOUS OR NEURALGIC CONGESTIONS.—These take place in the nerve sheaths, producing strangulation and pain, which at times is very intense. Neuralgia of the face is an example of these, and is frequently accompanied with swelling of the cheeks and gums. If the nerve is superficial there is a red streak marking its direction, and which is very sensitive to the touch.

These congestions are characterized by periodicity, thus besides the defervescents, anti-periodics should be used. Aconitine and quinine hydroferrocyanate [one granule of each every half hour until sedation].

When the neuralgia is due to chlor-anemia, iron arseniate should be administered [five to six granules a day].

When due to uremic causes (see Diathesis) benzoic acid and lithia benzoate [of each a granule together, every hour until the urine becomes clear].

The congestions of the nerves, or neuralgias occurring within the nerve sheaths (from the pain and discoloration), describe the anatomical course of the nerves and disguise their physiological functions. The pain which accompanies them is very acute, with or without spasm, according to the nature of the nerve affected. The pain, more or less intense, occurs in paroxysms of a few hours, a few days, or even weeks or months. Finally they terminate by paralysis from atrophy, the nerves being converted into fibrous cords totally divested of sensibility.

THE NEURALGIAS.—These may affect the nerve centers or their envelopes, and also the periferic nerves; sometimes they are due to general, and sometimes to local causes. Among the first we have the internal causes, such as the different diatheses and the miasmatic influences; among the second external irritations, swellings, foreign bodies, tetanus, etc.

Neuralgias are more or less persistent. They progress continuously, remittently or intermittently.

The treatment must depend upon the cause and upon the symptoms.

In the first case it varies with the causes themselves. Thus malarial neuralgia should be controlled by quinine (arseniate and hydroferrocyanate); chlor-anemic neuralgia by the iron arseniates; scrofulous neuralgia by the iodides; syphilitic neuralgia by the mercurials, etc.

Neuralgias from external causes frequently demand surgical interference, such as resection of the nerve. The symptoms, such as fever, demand the use of aconitine and veratrine; pain, or spasms, morphine, atropine, hyoscyamine, etc. (either by the stomach or

hypodermically); and revulsives, such as blisters and caustics, are sometimes necessary.

INTER-CRANIAL NEURALGIAS OR MIGRAINE.—These are either direct or reflex. They are explained by the meningeal, cerebral or ganglionic nerves which diffuse themselves in the meninges and penetrate the cerebrum, following the direction of the vessels which they embrace in their plexes.

Migraine is at times accompanied by vomiting and a hyper-sensibility of the eye and ear. It demands absolute repose, washing of the intestinal canal by the seidlitz salt, and the internal use of aconitine and caffeine [one granule of each every 15 minutes until sedation]. If the migraine is due to periodic cause, it should be combatted by quinine [arseniate or hydroferrocyanate, one granule every 15 minutes during the paroxysm].

If the cause is chlor-anemia, iron arseniate should be used [one granule four to six times a day in the interval of paroxysms. Aconitine and caffeine being used during the access].

INTRA-RACHIDIEN NEURALGIA—TETANUS.—The intrarachidien neuralgia or tetanus is the most terrible of all, for the reason that nearly all cases are fatal if we cannot properly combat them in the stage of invasion. This neuralgia is characterized by electric-like strokes which are extremely painful, and by tonic convulsions which commence in the muscles of the lower jaw (trismus) extending successively to the posterior cervical and vertebral muscles (ophisthotonos), to the muscles of the chest of one side (pleurosthotonus), to the abdomen, to the superior and inferior extremities (tetanos enplanche) and to the internal organs: heart, lungs.

Tetanus may be idiopathic or traumatic; sometimes both. We observe it in moist seasons, and also in armies during a campaign.

Tetanus is an acute congestive neuralgia, for we constantly observe at the autopsy a hyperemia of the spinal cord and its envelopes; frequently a sub-arachnoidien serous effusion which is produced before death. The gray matter of the ganglions of the cord is equally hyperemic; sometimes softened. The excitation of the cord shows itself by succussions or galvano-nervous discharges. It is as in the peripheral nerves, since the white matter of the cord is only a bundle of nerves.

The treatment of tetanus should be as rapid as the disease itself. Thus in the case of a wound, punctured or lacerated, we proceed to amputate the member under the influence of an anæsthetic. This is the most radical procedure in traumatic tetanus.

The internal treatment should consist of chloral, morphine, strychnine, curarine, hyoscyamine and atropine—the three latter alkaloids should be administered together, and should be given with a chloral mixture—[one granule of each in a tablespoonful of syrup of chloral every half hour until the cessation of the spasm].

The action of the strychnine may be explained in two ways: either by the constriction of the nervous pulp or by the nervous discharge, as in galvanism. Strychnine will have the same effect on the intervertebral nerves and thus inhibit asphyxia.

Curarine belongs to the strychnine group, and has the same action in arresting nervous expansion. It is therefore an error to look upon it as an antagonist to, or antidote for strychnine.

As tetanus terminates sometimes by profuse diaphoresis, we should provoke this by digitaline and the

wet pack, after the manner of the hydro-pseudopaths; the general bath being impossible because of the rigidity of the patient's body.

The alkaloids are sometimes used hypodermically because of the spasm of the muscles of deglutition.

ORBITAL NEURALGIAS.—These are either intra or extra-orbital. The first extend to the optic nerve and to the ocular globe, whose membranes become congested, and determine visual hyperesthesia or photophobia if its seat is the optic nerve and retina; it terminates by loss of vision. (See Ocular Congestions.) The chief general causes are rheumatism and syphilis; provoking spasm of the iris to the extent of occlusion of the pupil. They should be controlled by the mydriatics, atropine and hyoscyamine [one granule of one or the other morning and evening]. Aconitine and veratrine to control the fever [one granule of each every half hour during the paroxysm].

Quinine against periodicity, arseniate or hydroferrocyanate [10 or 12 granules a day during apyrexia].

EXTRA-ORBITAL NEURALGIA.—These spread along the super and infra-orbitary nerves, which belong to the fifth pair by their ophthalmic and superior maxillary branches; they provoke a profuse flow of tears, and hyperesthesia of the conjunctive, because of the lachrymo-palpebral nerve.

They should be combatted by the same means as the intra-orbital neuralgia, inasmuch as the ophthalmic nerve has relations with the iris by the short route of the ophthalmic ganglion. It is principally in syphilitic neuralgia that the pain radiates to the supra-orbital region.

NEURALGIC HYPERESTHESIA OF THE NARES.—This affection is characterized by frequent sneezing—sometimes during weeks—accompanied by fever and head-

ache. It is chiefly observed in the hay season in prairie countries, hence the name, "hay fever." It yields to the action of quinine, but frequently we are obliged to send our patients to the seashore.

DENTAL NEURALGIA occupies the superior or inferior teeth, the first radiates along the superior dental nerves pertaining to the middle branch of the trigemini. They may exist without decayed teeth, but always with great sensibility to the point of rendering mastication painful from pressure on the dental filaments. This hyperesthesia extends to the alæ of the nose and to the superior lip, where it causes slight congestions. There is lachrymation and palpebral hyperesthesia.

The inferior dental neuralgia extends along the dental branch of the inferior maxillary nerve and coincides with a hyperesthesia of the anti-tragus and the external auditory meatus, because of the temporal branch of the fifth pair. We knew of an empiricist who cured toothache by practicing a small incision on the internal side of the anti-tragus; he was a simple peasant who was often called from his work in the field to perform the operation. This man was undoubtedly acquainted with the anatomical relations between the inferior dental nerve and the temporal branch of the inferior maxillary.

Dental neuralgias are sometimes so persistent as to demand a resection of the nerve, which operation may be practiced sub-membraneously. The pain may be momentarily calmed by holding in the mouth a solution of alum in sulphuric æther. A refrigeration is produced constricting the gum tissues.

The odontalgic fever in its continuous form should be combatted by aconitine, and when periodic by quinine hydroferrocyanate.

EPICRANIAL AND FACIAL NEURALGIA.—These pertain to the fifth pair, but radiate to the occipital nerves whose sensory branches they invade, threatening even the cervical cord. The anastomosis of the fifth pair with the facial nerve produces convulsive neuralgia, which constitutes "tic doloureux." They spread to the tongue by the chordæ tympani and the lingual branch of the inferior maxillary, and are thus accompanied by profuse salivation. The lachrymation is produced by the lachrymo-palpebral nerve of Willis.

By this we see that this neuralgia is very complex as well as rebellious, and that an energetic and persevering treatment should be instituted. We should give aconitine, veratrine, digitaline, cicutine, hyoscyamine, atropine, strychnine, the arseniates, the iodides, the bromides, the valerianates and cyanide of zinc and iron. These should be used according to the intensity and the nature of the disease; but before all, the cause of the trouble should be ascertained.

Aconitine and veratrine should be given against congestive, hyperesthesia; hyoscyamine and atropine against spasm; strychnine against nervous shocks; iodides and bromides against lymphatism; valerianates against clonic convulsions, and quinine against periodicity. But all these means frequently do not succeed unless aided by the use of counter-irritation by means of blisters applied to the point of emergence, that is, the point where the nerve is most accessible, as in front of the anti-tragus.

In the continuous form characterized by heat and acceleration of the pulse, aconitine and veratrine should be administered, particularly if the neuralgia is of a miasmatic character [one granule of each every 15 minutes during the paroxysm].

In the remittent or intermittent forms we should resort to quinine, arseniate or hydroferrocyanate, with

the addition of iron arseniate if the neuralgia is of a miasmatic character [one granule of each every hour], in the intervals or on the approach of the paroxysms.

In the chronic forms, soda arseniate and antimony arseniate, with arsenious acid as an auxiliary, should be administered [one granule of each six to eight times a day]. In the intervals and at the time of the paroxysm, as a sedative, strychnine sulphate, zinc cyanide, cicutine and hyoscyamine should be given [one granule of each together every half hour].

The "tic doloureux" due to a rheumatic affection of the fifth and seventh pairs, is marked from the beginning by the symptoms pain and spasm, followed by an absence of paralysis, the opposite side retaining the physiological sensibility and mobility. Lachrymation and salivation occupy the retracted side, the contrary occurring when there is paralysis. Blisters in this case should be applied to the emergent point of the stylo-hyoid nerve—that is, the posterior and inferior part of the pavilion of the ear.

NEURALGIA OF THE NECK.—We have here a complex of tetanic symptoms to which Marshall Hall gave the name of "Trachelisme." The muscles of the neck are painfully contracted; tense as cords. The veins are swollen, complete dysphasia, with a blowing respiration threatening asphyxia.

To explain these symptoms it is necessary to describe the nerves of this region which pertain to the cranial and cervical nerves, such as the hypoglossal, the pneumogastric, the spinal accessory, and the ganglia of the great sympathetic, with which these nerves are in connection.

This neuralgia presents a grave character. It should be treated by the same means as neuralgia in general. Chiefly strychnine sulphate and hyoscy-

mine, and with which we have succeeded in a case of this kind [one granule of each every 15 minutes until sedation].

THORACIC NEURALGIA.—Under this head we classify sternalgia and costalgia; characterized by lancinating pains radiating, some to the neck, the others to the shoulders and the superior limbs; accompanied by labored respiration with cardiac anxiety. Hence the name “angina pectoris,” given by the authors; although the word “angina” should be applied rather to exudative affections (see Diphtherias).

These neuralgias proceed by paroxysms, and should be combatted by quinine, hyoscyamine and strychnine [of each one granule together, every 15 minutes until arrest]. Digitaline and iron arseniate should be administered with the object of the re-establishment of functional equilibrium [of each one granule together every 15 minutes].

We should not lose sight of the fact that the majority of these neuralgias are due to anemia or chloro-anemia. For this reason the cyanide of zinc is equally indicated in the rebellious cases [one granule from six to ten times per day].

ABDOMINAL NEURALGIAS.—These embrace First: Neuralgia of the diaphragm, with jerky respirations; hiccough, pains radiating to the neck and ascending along the phrenic and diaphragmatic nerves toward the shoulder and arm, accompanied by spasmodic movements of the pharynx from invasion of the ascending branch of the hypoglossal. It should be controlled by hyoscyamine, quinine hydroferrocyanate, and strychnine independently of the causal medication [one granule of each every half hour during paroxysms]. Second; Epigastralgia. This progresses with a feeling of a heavy weight pressing from the

front upon the back, and accompanied by painful cramps, small pulse, syncope and cold sweat. It is distinguished from gastrodynia by the absence of gastric symptoms, such as the vomiting of serum or clear water and acid eructations. The treatment of the two is as diverse as the symptoms. In the epigastralgia relief is obtained by the use of hyoscyamine, morphine and strychnine; while bismuth sub-nitrate performs the same office for the gastrodynia.

Third: Cælialgia. This takes its source in the cæliac plexus, and radiating along the secondary plexus, coronary, stomachic, splenic, hepatic, mesenteric, renal, spermatic and ovaric, so that there are as many neuralgias as there are plexes. Cæliac neuralgia occupies a deep seat, nearer the spine than to the epigastrium, which serves to distinguish it from the others. It provokes spasmodic vomiting without being calmed by it. The splenalgia occupies either the concave or the convex surface of the spleen. In the first instance it radiates to the stomach, with pain in the side and vomiting; in the second it radiates to the left shoulder. Hepatodynia follows the direction of the anterior and posterior hepatic plexes—that is, toward the right shoulder or the stomach. It is frequently caused by spasmodic icterus from constriction of the billiary ducts; it may also be due to the presence of billiary calculi. (See Choluric Diathesis.) Mesentric neuralgia or miserere, thus called because of the great distress of the patient. It may be the cause of internal strangulation or intussusception. Spermatic-renal neuralgia produces retraction of the testicle. Ovario-uterine neuralgia, frequently observed on the approach of the menses, and in dysmenorrhœa. The colics are very acute and radiate to the inner thighs. The retraction is the same as the

spermato-renal neuralgia in man, except that the corresponding organ, the ovary, is already within the abdomen. Hyoscyamine and strychnine should be used as sedatives [of each a granule every half hour until sedation]. Heretofore we have had nothing at our disposal to ease the ovario-uterine colics but the æthers and gum-resins (assafœtida and castoreum). Moliere suggested "matrimony in pills," but these means are not within the reach of everyone, and besides, why excite if you cannot calm? Is this not like the mirage in the desert which rather increases the thirst? Camphor monobromated would be indicated, if the genetic passion was not included in the views of nature.

We should mitigate the fire without extinguishing it, as we would put a sourdine upon the zither strings without relaxing them. This is what we obtain by the alkaloidal medicaments, such as hyoscyamine, ergotin and strychnine sulphate, which are at the same time agents of excitation and regulation.

CYSTO-PROSTATIC NEURALGIA.—The spasm of the bladder and the prostatic portion of the urethra is accompanied by dysuria; occasionally with complete retention, which causes many specialists to resort to mechanical measures (sounds, bougies, etc.), which rather complicate the situation. Before using these means—always dangerous under these circumstances—warm baths, leeches and sedatives, chiefly cicutine and hyoscyamine to relax the neck of the bladder, and strychnine sulphate to second the contractions of the body, should be resorted to [of each one granule together every half hour until the spasms are arrested].

ALKALOIDAL TREATMENT OF INFLAMMATION.—In order to properly treat inflammations, it is necessary to thoroughly understand them.

As the word signifies, it is an exaggerated combustion; consequently, the formation of organic products as false membranes, pus, etc.; and chemical substances, as ammonia, urea, the chlorides, etc.

It is these products of exudation and secretion that give rise to the anatomo-pathological lesions; the result of all inflammations that has not been jugulated in the beginning.

Jugulation is a necessity, both for the inflammations and pyrexias. We have an instance of this in diphtherias, which form a transition between these two classes of diseases—one local and the other general.

It is under the influence of irritation that inflammation arises. All the vitality seems to be concentrated in the organ which is the seat of the morbid super-excitation from the periphery to the center; hence the cold or rigor which appears in the beginning of all inflammations. The skin is pale, the pulse small and there is a general prostration which renders the patient undesirous of movement, and compels him to seek his bed.

In this, the initial stage of the disease, nervines and sudorifics should be prescribed in order to provoke heat and circulation to the surface and relieve the point in the internal organ where the congestion exists; phosphoric acid, strychnine sulphate and digitaline [one granule of each together, every half hour], with hot drinks. [Infusion of elder blossoms, borage, etc., with a teaspoonful of seidlitz salt in the solution.] The effect of this treatment will be an alvine evacuation, followed by some serous discharges and a profuse diaphoresis.

In all inflammations there is a rise of the temperature, and it is this rise which precedes and determines the explosion of the disease; it is the internal fer-

ments such as physcine, biline, sudorine, ureine, etc., which need to be eliminated. The system has been suddenly surprised and has had to time to evacuate these elements of combustion, hence the necessity of evacuants in the beginning of inflammatory affections; in fact all treatment should be preceded by this, maintaining on the other hand, the vitality by the nervines.

The reaction which follows will be open, and will be readily combatted. The practitioner will observe attentively the progress of the fever, and at the least indication of internal disturbance he should practice depletion of the blood in harmony with the forces of the patient.

The Alkaloidal method does not exclude phlebotomy in inflammation, but it does not make an absolute rule of it; rather subordinates it to the state of vitality, and as it commences by raising this by the nervines, the extraction of blood may be made with all security in small quantities.

Let us take into consideration a parenchymatous organ, such as the lung; if it should be contracted from the beginning by strychnine, it is evident that it will accommodate less blood than if the contrary had been the case, and the organ rendered flaccid by bleeding as an initial treatment. If the latter has been first practiced a kind of vacuum will be produced and the blood will rush to that point, and with the added danger of syncope. We see the importance of this fact confirmed by the Alkaloidal method of dealing with the trouble, to wit: To precede—or at least coincide—the nervines to the evacuation of blood.

We draw especial attention to this point, and insist that in the practice of legitimate medicine, there should not exist an exclusive system.

In the meantime, if the heat in the skin becomes dry and burning, which indicates a temperature of from $102\frac{1}{4}^{\circ}$ to 104° F. (39° to 40° Cent.), as is demonstrated by the thermometer, the defervescent alkaloids, *aconitine* and *veratrine*, should be resorted to. Experience has taught us how rapidly these two alkaloids bring about a reduction of the temperature and pulse.

The following table demonstrates this:

ALKALOIDAL ADMINISTRATION OF VERATRINE IN ACUTE RHEUMATISM.

<i>Days.</i>	<i>Doses.</i>	<i>Hours of Observation.</i>	<i>Effects Noted.</i>
1	2 Millegrammes.	6 p.m.	The fever and pain in the articulations is persistent, but there is an abundant perspiration.
2	4 "	"	The fever is not so high. Pulse 100, temperature $101\frac{3}{5}$ deg. F. ($38\frac{1}{5}$ deg. Cent.)
3	6 "	"	Pain less, pulse 90, temperature 95.75 deg. F. ($35\frac{2}{5}$ deg. Cent.)
4	8 "	"	Pain violent in the right sternocavicular articulation. Applied veratrine ointment on cotton wool.
5	No medication.
6	"
7	7 Millegrammes.	Night.	The fever succumbed at night-fall. From this time convalescence was complete, and the patient was fully recovered in a few days.

Every morning the intestinal washing by the seidlitz salt was practiced, and, considering the rapidity of the formation of the ferments, this should not be neglected.

When the temperature falls to 99° F. (37 Cent), it should be maintained there; the local disturbance

(pulmonary or otherwise), being still apparent, is evidence of the continuance of the inflammation; the temperature then will oscillate between 99° and 102.2° F. (37° and 39° Cent.), and thus constitutes the remittent stage of the fever. Quinine should be employed, preferably the hydroferrocyanate, which will have the effect of regulating both the circulation and the calorification, as is shown in the following table:

THERMOMETRIC EXPERIMENTS WITH QUININE HYDRO-FERROCYANATE. VIOLENT INFLAMMATION OF THE BLADDER FOLLOWING CONTUSION.

<i>Days.</i>	<i>Doses.</i>	<i>Hours of Observation.</i>	<i>Effects Noted.</i>
1		5 p.m.	Pale, cold, pulse small, hardly perceptible, hypogastric pain and tenderness; dull. The catheter brought away a large quantity of dark-colored blood.
2		8 a.m.	No reaction. Hypogastrium a little sensitive. Dull. Injected warm water into the bladder. It returned mixed with blood.
3	10 Millegrammes of digitaline.	8 a.m.	Reaction general; pulse 90; temperature 95.75 deg. F. ($35\frac{1}{2}$ deg. Cent.)
"	every hour.	6 p.m.	Hypogastrium less tender and less painful. Pulse 89. Heat a little below normal.
4	" "	8 a.m.	Amelioration of symptoms is sustained.
"		6 p.m.	Almost no fever.
5	8 Millegrammes of digitaline.	Evening.	" "
6	6 Millegrammes of digitaline.	Morning.	" "
"		Evening.	" "
7	No medication.	Morning.	Slight chill. Pain in the hypogastrium rising to the loins. Fever. Pulse 98. Temperature 99 deg. F. ($37\frac{3}{8}$ deg. Cent.)

<i>Days.</i>	<i>Doses.</i>	<i>Hours of Observation.</i>	<i>Effects Noted.</i>
7		Evening.	Same state.
8	10 Granules of quinine hydroferrocyanate. Grm. .001 [one granule every half hour].	Morning.	“ “
9	No medication.	Evening.	The fever and the hypogastric symptoms are wearing off.
“		Morning.	Apyrexia.
10	10 Granules of quininehydroferrocyanate.	Evening.	Return of the paroxysm.
11	6 do.	Evening.	The fever has ceased.
12	4 do.	Evening.	No fever.

There should be no doubt as to the action of quinine hydroferrocyanate, for the first administration controlled the fever. This returned the following day, because the medicament had not been given. On subsequent days it was given, and the fever ceased in spite of the gravity of the accident. We notice that the temperature never rose above $99\frac{1}{2}^{\circ}$ F. ($37\frac{1}{2}^{\circ}$ Cent.), and that during some time it descended below normal or $95\frac{1}{2}^{\circ}$ F. ($35\frac{2}{3}$ Cent.), which was due to the stupor.

Thus fever is a relative, rather than an absolute state, and hence the necessity of nervines in the beginning of intense inflammations; a fact upon which we cannot insist too much.

Finally we come to the last period of inflammation, or that of anemia, which should be combatted by the arseniate of iron, as is demonstrated in the following table:

CONTUSED WOUND—PAROXYSM OF FEVER—ENGORGE-
MENT OF LIVER AND SPLEEN—THE PATIENT HAD PREVI-
OUSLY TAKEN LARGE DOSES OF QUININE SULPHATE.

<i>Dates.</i>	<i>Hours of Giving Medicines.</i>	<i>Doses.</i>	<i>Hours of Observation</i>	<i>Effects Noted.</i>
Sept. 15.	9.30 a.m.	1 Millegr.	11.30 a.m.	Skin warm, cheeks red, temperature $102\frac{1}{2}$ deg. F. (39 Cent.) Pulse 120. No desire to sleep. Gave one granule narceine, to be repeated every hour until effect.
	1.30 p.m.	1 "	3.30 p.m.	
	3.30 "	1 "		
	5.30 "	1 "	7 p.m.	
Sept. 16.	9.30 a.m.	1 Millegr.	8 a.m.	The patient is without fever, and rested well.
	11.30 "	1 "		
	3.30 p.m.	1 "		7 p.m. Little fever. Pulse 100, temperature 98.75 deg. F. (37 deg. Cent.)
	5.30 "	1 "		
Sept. 17.	9 a.m.	1 Millegr.	7 p.m.	There has been no chill. The pulse and temperature are going down.
	2 p.m.	1 "		
	6 "	1 "		
Sept. 18.	10 a.m.	1 Millegr.	8 a.m.	Perspiration abundant during the night. Urine copious, skin moist, pulse 100, temperature 95.5 deg F. ($35\frac{1}{2}$ Cent.)
	12 "	1 "		
	4 p.m.	1 "		
			6 p.m.	No chill, skin quite warm, pulse 100.
Sept. 19.	9 a.m.	1 Millegr.	8 a.m.	Passed a comfortable night. The heat of the skin is not so great, pulse 102, temperature 92 deg. F. ($34\frac{1}{4}$ deg. Cent.)
	11 "	1 "		
	4 p.m.	1 "		
			8 p.m.	No paroxysms. Pulse 100, temperature 86 deg. (32 deg. Cent.) Urine clear and abundant.

The subsequent days the use of iron arseniate in the dose of four millegrammes in the 24 hours was continued.

The first indication was to avoid the return of the rigors, for the pulse and temperature were both variable; the first tending to rise and the latter to descend, as in anemia.

The whole object being to maintain an average medium of vitality so as to inhibit the internal or paroxysmal concentrations.

Our practice in the civil hospital of Ghent, shows us every day that even in the most grave accidents, inflammatory fever can be jugulated.

Expectant medicine has made many victims by its persistence. There is a responsibility in the practice of medicine that we should not decline. It is quite easy to charge all failures to the disease, and quite as easy to profit by its inertia.

The collectors of rare cases of disease are a bane to humanity; they are as M. Amadee Latour well said, "useless naturalists, spending their lives in the classification of the diseases of man."

We will now commence the study of inflammations in particular, adhering exclusively to their dynamic period, which is susceptible of abortion.

In a separate chapter we shall treat of chronic diseases, due to neglect while in the acute stage.

ALKALOIDAL TREATMENT OF SPECIAL INFLAMMATIONS.

MENINGITIS.—The characteristic of inflammation of the membranes of the brain is the acute darting headache, if it is the serous membrane only that is affected. The pain is dull if it is the pia mater; throbbing (as the strokes of a hammer), if it is the dura mater. The state of the pulse varies also, at times rapid and contracted, at others full and hard.

The symptoms are direct or reflex. Among the first we should count the deep seated pain in the eye-balls, irregular contraction of the pupils, hyperesthesia of the eye and ear, trismus, grinding of the teeth, delirium, insomnia, etc.; among the second vomiting, diarrhœa, constipation, etc. The fever is continuous, and the temperature rapidly rises to 104° or $105\frac{4}{5}^{\circ}$ F. (40° or 41° Cent.); to oscillate afterwards in the different degrees of the thermometric scale.

These are the phenomena by which the practitioner should be guided. The treatment should in no wise be routine or uniform; sometimes bleeding, sometimes purgatives and sometimes emetics; in fact it should be dependent upon the judgment of the moment. Thus we shall give "air" to the cerebral circulation by applying leeches behind the ears, and allowing the blood to continue to flow gradually. At the same time cold applications should be made to the head, and internally the defervescent alkaloids. Aconitine and veratrine should be given every fifteen minutes until the decline of the fever, and to employ quinine the moment that an intermission appears. Quinine hydroferrocyanate [one granule every 15 minutes until there is perfect regularity of the pulse].

At the first sign of cerebral paralysis, either in the beginning or in the course of the disease, such as muscular resolution, involuntary urinary and alvine evacuations, deafness, dilation of the pupils, etc., we should administer phosphoric acid and strychnine [one granule of each every 15 minutes] until all the symptoms of paralysis have ceased.

Meningitis is frequently epidemic, or rather contagious, in places where a great number of children are crowded together. Dr. M. Moyard published in *Le Repertoire* of 1874, the report of an epidemic of this

kind, which appeared during this year at Longjumeau (Seine et Oise), among the children from Paris. There was not at the time any particular epidemic, and the disease attacked only sucking children.

It is probable that many of them brought the germ of the disease with them. The meningitis commenced suddenly by great nervous prostration, and at the end of a few days the little patients succumbed, with all the symptoms of cerebral paralysis. It was only by the means of strychnine arseniate and the hydroferrocyanate of quinine that some of them were saved.

This proves once more that no matter how acute a disease may be, it is the fever, rather than the local symptoms, that should be combatted. Even in tubercular meningitis, which is marked by atrocious cerebral pains and convulsions, the progress may yet be arrested if the alkaloids are judiciously used, for there are reports which prove that the meningeal tubercles may undergo a retrogressive metamorphosis, either fatty or cretaceous, and which causes the arrest of the disease. It is a fact that the pains persist, but after a while the brain becomes accustomed to them. The first necessity is to arrest the meningeal fever which is paroxysmal and precipitates a fatal termination, for the cerebral congestion that supervenes terminates by effusion. The latter is sometimes due to hydremia, or cerebral anemia. In these cases antiperiodics should be used; chiefly the hydroferrocyanate and arseniate of quinine [one granule of each every 15 minutes, until the decline of the fever].

CEREBRITIS.—Has a symptomology more obscure than meningitis, and this is explained anatomically and physiologically; anatomically, because the vessels do not penetrate the white substance until after their division in the pia mater. Physiologically, because

vivisection demonstrates that the white nervous matter has no intrinsic sensibility, and that it is a cold substance.

The fever is not equally as violent as that of meningitis. The reason why this inflammation is so frequently unrecognized, and that the anatomo-pathological disorders have time to be fully established.

This is above all true in traumatic cerebritis. Individuals with wounds of the brain, of the gravest character even, with loss of substance, have survived and regained the integrity of their intellectual faculties.

Others having received a violent stroke upon the head, producing but an ill-defined pain, have been able to proceed with their usual occupation until the appearance of the inflammatory fever, have succumbed to cerebral compression. The necropsy has revealed an abscess in the white substance. We know that Dupuytren, by one of those bold actions which legitimate extraordinary surgical operations, opened an abscess of this kind by trephining*. The consequence of what we have stated is, that we should not neglect a headache strong enough to produce fever, but attack it energetically by the derivative sanguine depletions, revulsives, sedatives and defervescents; caffeine, aconitine, veratrine and above all, to use the seidlitz salt as a refrigerant to the intestines; for experience teaches us that intestinal disturbances reflect upon the head. This latter precaution is so much more necessary because the intestinal contents exercise a pressure upon the hemorrhoidal veins and gradually upon the venous sinuses of the spine. The progress of cerebritis is clearly marked. At first there is a dull headache, circumscribed or general; with a pulse rather slow that exhilarated, somnolence or hebitude of mind.

* Not an unusual proceeding at the present time.—*Trans.*

Rarely these reflex phenomena occur in meningitis; it is only at the end of several days that the fever initiates with a rigor of more or less duration. In all this period of the disease some precautions should be taken; that is, the patient should be put to bed, revulsives used to the extremities, vinegar applications to the front and nape of the neck, and caffeine arseniate internally to inhibit congestion [one granule every half hour until the pain or cerebral torpor is dissipated]. Sometimes we are obliged to associate with the caffeine the arseniate of strychnine when the patient is in deep somnolence, as it occurs in the heat of the tropics.

ACUTE OPHTHALMIA.—The eye reflects faithfully the inflammation of the brain; also the danger of these inflammations comes from the extension of the disease from one organ to the other. We have just stated that in meningitis there are deep pains in the globes of the eyes and that amblyopia is frequently the result of serous infiltration of the retina, the same occurs in deep ophthalmia; there are cerebral pains, very intense, and one reacts upon the other.

From this standpoint the treatment of acute ophthalmia is the same as in meningitis and cerebritis. Dissipate the congestion by leeches or cupping. The places of election should be the nares, the temples, the mastoid process and the anus, in order to disgorge the ophthalmic venous sinus. We shall insist upon intestinal washing with the seidlitz salt and the internal use of the defervescent alkaloids veratrine and aconitine; the antiperiodics, hydroferrocyanate and arseniate of quinine, the antiseptics atropine and hyoscyamine, combined with the narcotics narceine, morphine, codeine, etc.; embrocations around the orbits with veratrine and atropine should be made,

and the eyes should be covered with a bandage, for it is very important to protect the organ from the action of light and movement.

Generally in acute ophthalmia, the treatment should be rather medical than surgical. Thus we shall avoid the anatomico-pathological lesions or chronic ophthalmias, which are so frequently rebellious. In acute virulent ophthalmia the conjunctiva should be cauterized with nitrate of silver, and the eyes afterwards immobilized by a bandage.

OTITIS.—There is a deep acute otitis, as there is a deep acute ophthalmia; that is, that the danger consists chiefly in the extension of the inflammation to the brain, and here especially to the cerebellum.

We notice then what Flourens determined on pigeons by the destruction of the semicircular canals, to wit.: disturbances of coordination of movements and a veritable sea-sickness. Acute otitis produces intolerable pains, as if a hot iron were plunged into the ear. This inflammation should be energetically combatted, and the treatment is the same as in acute ophthalmia.

RHINITIS.—In the inflammations of the Schneiderian membrane, the danger as in ophthalmia and otitis, exists in the possibility of its extension to the brain or meninges. It may be due to traumatic causes, such as the plucking of the hairs or vibricies. The nares should be depleted by leeches, and the fever combatted by the defervescents and anti-periodics. We have already spoken of the exudative rhinitis or glanders.

STOMATITIS.—Simple stomatitis is easily controlled; it is not the same with exudative stomatitis, (see above) and gangrenous stomatitis, which is frequently observed in marshy countries.

These should be controlled by quinine, preferably the arseniates; and by the local application of muri-

atic acid in honey. [One granule of the salt every hour in the beginning of the disease—that is when the lips and buccal mucous membrane assumes a palish color.] The stupor should be met with a strychnine arseniate [one granule every hour] alternately with the quinine.

GLOSSITIS.—This inflammation depends very often upon the excessive use of mercury and other poisons or virus. It should be combatted by strychnine and the arseniates, as in stomatitis. It is dangerous to make deep incisions in the tongue, because of the ensuing hemorrhage and prostration. If necessary, the trachea should be opened to prevent suffocation. Locally, gargles of chlorate of potassium should be used.

* TONSILITIS.—These inflammations are only dangerous when due to miasmatic causes, and which demand the employment of strychnine and the arseniates.

The drastics (senna and scammony) are necessary to effect the prompt removal of accumulated mucous.

R Aquæ Vienensis.....	grammes 60
Magnesium Sulph.....	“ 15
Syr. Mentha Pip.....	“ 30
	pro re nata

ANGINA.—Under this name we designate stridulous affections, threatening suffocation by spasm of the respiratory tract and the exudation of false membranes. These are generally miasmatic diseases which consequently demand the use of strychnine and the arseniates, which should be pushed vigorously, and the spasm combatted by hyoscyamine (vide diphtheria).

* NOTE BY TRANSLATORS.—Ice held in direct contact with the inflamed tonsils persistently, affords relief quickly and permanently.

PLEURISY—PNEUMONIA.—These two inflammations progress frequently in concert; yet they differ according as the pleura or lung tissue is particularly affected.

In pleurisy the pains are lancinating and piercing (generally called stitch). We should not confound them with inter-costal or pleurodynic pains, which are produced by the contraction of the inter-costal muscles. Pleuritic pains occur even without respiration, as when the patient tries to suppress breathing. The pulse is small and rapid; the face is pinched and frequently pale; on auscultation crepitant and sibilant rales are heard; the cough is dry or at least there is but little expectoration, and this always serous. The disease commences with a violent rigor which indicates that from the beginning—strychnine and quinine arseniates, and digitaline should be used. [One granule of each together every half hour.]

The chest should be cupped and immediately bandaged to immobilize, as much as possible, its walls, which exercise a painful friction over the pleura.

As a beverage we should give lemonade, with the addition of the seidlitz salt, to provoke an abundant excretion from the urinary and digestive mucous membrane. This treatment has particularly in view the prevention of effusion of the pleural sac, and which generally occurs during the first hours of the invasion. When the reaction occurs it should be controlled by aconitine and veratrine [one granule of each together, every 15 minutes until the temperature and pulse are reduced].

In pneumonia, the patient experiences a bubbling sensation in the chest, with strong oppression; difficulty in the return circulation; injected and swollen face; spuma and bloody expectoration; hard pulse; and absence of the respiratory murmur—unless there

is bronchial rals and dullness. We see that the expression of the face of the patient is different from that in pleurisy, and it is necessary to disgorge the lungs by bleeding, at the same time strychnine and quinine arseniate, and digitaline are administered to favor the return of the lung to its normal condition and to prevent pulmonary edema. [One granule of each every half hour.]

The reaction should be controlled by aconitine and veratrine, as in pleurisy. The use of narcotics should be abstained from as much as possible. To modify the cough and facilitate the expectoration, golden sulphuret of antimony should be given in mixture. Also scillitine [one granule every half hour], with an emulsion of oil of sweet almonds.

Broncho-pneumonia should be treated in the same manner. This treatment will give in results the prevention of anatomic-pathological lesions, against which medicine is so frequently impotent.

Bouillard pretended to jugulate the acute diseases of the chest by repeated bleeding. We admit this in the strong and ensanguinated individuals, but the bleeding does not modify or improve the vitality of the lung—the suffering organ—and by the vacuum which it produces it creates a species of whirlpool, into which the blood of all the body is precipitated. It is then, more rational to restrict the pulmonary tissues by the arseniates, and in this way, if the bleeding should be practiced—being indicated by the disturbance of the respiration—they will of necessity be less copious and less numerous.

The treatment by tartar emetic in contra-stimulant doses we do not propose to reject, but think that the majority of cases may be cured by the use of the defervescent alkaloids.

Of the alcoholic treatment we shall say nothing, except that it is more convenient in countries and localities where this class of stimulants are largely used, but even then we would not dispense with the use of the arseniates of strychnine, and quinine and digitaline, etc.

One word in regard to aspiration or capillary thoracentesis: It is in these cases that this operation becomes a plank of salvation. Even in the doubtful cases it should be practiced; for it can do no harm or in any way aggravate the situation. The dullness, the blowing murmur, the agophonia, the bronchophonia, all frequently fail, or are insufficient signs to indicate the extent of the effusion.

The enlargement of the capacity of the diseased side is also an insufficient sign. That which leaves no doubt is the suffocation of the patient, and it requires instant interference.

The capillary trocar should be introduced on the dull and salient point, and a lack of resistance will indicate the arrival at the focus. Admitting that we have not attained it the operation should be repeated on a neighboring point, until the issuance of the effused fluid.

PERI-CARDITIS — CARDITIS — ENDO-CARDITIS.— The inflammations of the heart and its envelopes are characterized by piercing pains as from stabbing; and disorders in the rythm of the circulation and respiration. On osculation we perceive the sounds of new leather, souffle, file and saw. The disease begins by a rigor and a state of syncope, which proves that the organ was suddenly surprised, and it should be aided by the arseniate of strychnia and digitaline [of each a granule together every half hour.]

It is evident from the foregoing that the movements of the heart have been suddenly disturbed, the disten-

sion of its walls being the result. We should, then, give to the organ the power of returning to its normal condition and not weaken it by sanguineous depletions, it produces also a vacuum that the diminution of the blood makes it impossible to fill, hence the disturbance of the circulation and respiration. As soon as reaction takes place, or at least when it exceeds certain limits, it should be controlled by aconitine and veratrine [1 granule of each together every half hour until diminution of the pulse and temperature].

In pericarditis we should most fear the formation of false membranes and effusions. The first are developed in the serous cavity and perverts its freedom of action; hence the attrition sound, the crackling, the sound of new leather, the file and the saw sound which are noticed.

We should then maintain the blood in a fluid condition by alkalines; such as the soda arseniate, which is indicated after the fever has subsided [one granule every hour]. It is understood that the fever, as above referred to, has been controlled by the defervescent alkaloids.

The action of the sodium salt should be aided by saline mineral waters, or when these are not at hand, by the seidlitz salt, in the dose of one or two teaspoonfuls every morning.

When there is hydropericardia dependent upon an anemic state, iron arseniate should be given [from 4 to 6 granules a day]. But if with the disturbance of the circulation and respiration there is a weak pulse and bulging in the cardiac region, denoting the presence of an effusion, we should practice the cardiothoraco-centesis without loss of time. The pericardium should be penetrated between the fifth and sixth ribs on the left side, near the junction of the car-

tilages, to avoid wounding the internal mammary artery. There is no danger in practicing this operation, while there is great danger in the presence of the effusion.

Immediately after freeing the pericardium, the diuretic alkaloids, such as digitaline, colchicine and scilitine, seconded by the chalybeates, chiefly the saccharated oxide of iron, should be administered.

In carditis the pulse is rather slow than rapid, and there is a tendency to cyanosis, syncope and general refrigeration of the body. It will be understood in this case that digitaline might prove injurious, and the more so the crude digitalis. The arseniate of strychnine should be resorted to in doses of one granule every half hour until there is stimulation of the heart. The administration should be made with some stimulating cordial.

Carditis is generally due to rheumatism, gout, alcoholism, or the excessive use of opiates. The arseniates are indicated in these cases—the arseniate of antimony preferred [1 granule every half hour].

In endocarditis, acceleration of the pulse is the rule, and its slowing only takes place when the inflammation involves the muscular substance. In this case digitaline should be associated with strychnine arseniate [1 granule of each every half hour.]

Narcotics should be sparingly used if at all, and the desires of the patient to be made to sleep not heeded, as this would expose him to *sub sultus tendium* and agitation of the heart, which might prove fatal. The sleep will come naturally when the organ is strengthened by the arseniates.

PERITONITIS.—Is general or partial. General peritonitis is characterized by great prostration; the patient keeps himself in a recumbent position, the legs

flexed upon the pelvis so as to relax the abdominal muscles. The face is pinched, the pulse threadlike, the skin cold. The abdomen is distended in a point toward the navel; there is hiccough and vomiting of greenish substances. According to all these symptoms it is obvious that we should employ the nervines, phosphoric acid and strychnine sulphate [1 granule of each every half hour] until the extension of warmth to the surface. If the chills persist we should give quinine hydroferrocyanate, which is here a sedative par excellence [1 granule every half hour].

As soon as the reaction takes place the morbid heat, tending above 100.5° F. (38° Cent.), and the pulse beyond 100, we should administer veratrine.

ALKALOIDAL EMPLOYMENT OF VERATRINE IN PUERPERAL
PERITONITIS—PATIENT 27 YEARS OF AGE—
MULTIPARA—ACCOUCHMENT NORMAL.

(Reports communicated by Dr. Deneffe, professor in the faculty of Medicine in the University of Ghent.)

<i>Dates.</i>	<i>Hours at which Medicine was Given.</i>	<i>Hours of Observation</i>	<i>Notes.</i>
June 5.		8 a.m.	Malaise general, chills following the reaction. Pulse 90, temperature 101 deg. F, ($38\frac{3}{4}$ deg. Cent.) Bowels slightly flatulent. Little sensibility. Repose, diet, refrigerant drinks. Embrocations of oil of chamomile.
"		6 p.m.	No amelioration. Pulse 100. Breasts swollen, bowels flatulent, respiration embarrassed, great prostration. Counter-stimulant mixture of digitalis and tartar emetic—a teaspoonful every hour.

<i>Dates.</i>	<i>Hours at which Medicine was Given.</i>	<i>Hours of Observation.</i>	<i>Notes.</i>
June 6.		8 a.m.	Passed a bad night. Insomnia, abdomen distended, pain in spots, respiration more labored, breasts flaccid, lochia thin and fetid; pulse 110, temperature 104 deg. F. (40 deg Cent.) Continued the counter-stimulant, pushing the digitalis from 3 to 6 grammes; blister upon the epigastrium.
"		6 p.m.	Pulse 117; abdomen tense, apparently less painful, vomiting greenish substances in the intervals of hiccough.
June 7.	One milli-gramme of veratrine every half hour.	11 p.m.	Pulse 100; heat of the skin less, thirst less intense, belly less tense. The hiccough has gone. Vomiting still continues.
June 8.	"	"	Pulse 80; skin moist, belly distended, but less painful. The vomiting and hiccough have ceased.
June 9.	"	8 a.m.	Pulse 80; abdomen yielding, not painful. The hiccough and vomiting have not returned.
June 10.			Medication suspended. The amelioration continued.

According to this table we see that amelioration commenced with the administration of veratrine.

The counter-stimulant mixture tended to increase the general prostration. It would have been better to have used the nervines and hydroferrocyanate of quinine. We see proofs of this in the annexed table:

Alkaloidal employment of digitaline and quinine hydroferrocyanate in partial peritonitis. Patient aged 35 years.

VIOLENT CONTUSION OF THE EPIGASTRIUM—HÆMATE-
MESIS.

<i>Days.</i>	<i>Doses.</i>	<i>Hours of Observation</i>	<i>Notes.</i>
1		5 p.m.	Pale, cold, pulse small; pain on pressure; epigastrium distended and dull. Vomiting of blackish blood.
2		8 a.m.	Reaction not well made. Epigastrium little sensitive. Dull.
"		8 p.m.	Epigastrium tense and sensitive. Cut cups and cataplasms.
3	One milligramme of digitaline every hour (10 milligrs).	8 a.m.	Reaction general; pulse 90, temperature 95.25 deg F. (35 $\frac{2}{3}$ deg. Cent.)
"		8 p.m.	Epigastrium less tense and less painful. Temperature very near normal.
4	Same treatment.	8 a.m.	The amelioration is sustained.
"		8 p.m.	Scarcely any fever.
5	Eight milligrammes digitaline; 1 every hr.	8 p.m.	The amelioration continues.
6	Six milligrammes; 1 every hr.	8 a.m.	Same state.
"		8 p.m.	Same state.
7		8 a.m.	Fervile reaction. Pulse 98, temperature 99 $\frac{2}{3}$ deg. F. (37 $\frac{3}{8}$ deg. Cent). Bleeding. Cataplasms.
"		8 p.m.	Same state.
8	Ten granules of quinine hydrofer. gr. 0.01; 1 every half hour.	8 a.m.	During the day the fever and the inflammation fell.
"		8 p.m.	The fever has entirely disappeared.

<i>Days.</i>	<i>Doses.</i>	<i>Hours of Observation.</i>	<i>Notes.</i>
9	No medicine	8 a.m.	Slight access of fever with return of the pain.
10	Ten granules of quinine hydrofer.	"	The fever has fallen.
11	Six granules.	"	Apyrexia.
12	Four "	"	The fever has ceased.

This table illustrates that in the beginning of inflammations from nervous sideration, the heat does not rise as fast as in the acute inflammations, and is not in harmony with the state of the pulse; thus in the latter case the pulse was 90 when the temperature was only 95.25° F. (35 $\frac{2}{3}$ ° Cent.), consequently below the physiological average. This circumstance shows us how necessary it is to insist upon the nervines.

We have seen also how quick the fever yielded to the quinine hydroferrocyanate, but it tended to return as soon as the medicine was stopped, which shows that it should be insisted upon for a few days after the fever has disappeared.

PUERPERAL, OR METRO-PERITONITIS, is undoubtedly the most terrible of the inflammations; for it is complicated with an infectious element, the lochine, which causes a veritable septicemia. Here the antiseptic medicaments should be employed, and we can find none better than the arseniate of iron pushed vigorously [10 to 20 granules per day, gradually administered]. The combination of the arsenious acid with iron eliminates all fear of toxic effects. Thus in metro-peritonitis, besides the nervines in the beginning, we should use phosphoric acid and strychnine sulphate, independently of veratrine, which is to be used at the beginning of the reaction; and of the hydroferrocyanate of quinine, which should be used during the paroxysms. The arseniate of iron is used

against the septicemia manifested by the flow of fetid lochia, glutinous perspiration, quick pulse (120), burning heat 104° to 106° [40° to 41° Cent.], delirium, subsultus tendium, labored respiration, and finally, all the symptoms announcing decomposition of the blood. [1 granules every half hour]. It is also necessary to maintain the fluidity of the blood, for metro-peritonitis frequently gives rise to serous effusions and albuminaria, which explains the eclamptic convulsions proper to this inflammation.

HEPATITIS.—We must distinguish the inflammation of the envelope of the liver or peri-hepatitis, from that of the parynchemia. In the first it is a serous membrane that is affected, demanding the same treatment as peritonitis. (See Peritonitis.) In the inflammation of the parynchema, there is cholemia, the elements of the bile being retained in the blood. Hence the malaise, the burning heat of the skin, intense thirst, some vomiting, and all the signs of sanguineous decomposition, the bile acting as a veritable poison, because of its alkaline nature.

As a consequence of the pathological state, in addition to the general antiphlogistics—baths, poultices and leeches—we must use evacuants and antispasmodics, chiefly hyoscyamine and arseniate of iron, with the view of re-establishing the natural flow of the bile. [Of each 1 granule together every half hour as a refrigerant.] The seidnitz salt should be used.

The hepatitis of hot climates terminates, not unfrequently, in abscess of the liver, with billio-purulent absorption. Capillary paracentesis should be practiced in these cases as soon as fluctuation appears. The English residents of India are prone to this phase of hepatitis, because of their heating regime and incendiary medication. It would be a grand

thing if the alkaloidal practice could penetrate this country, but unfortunately we know the tenacity of the English in the preservation of established usages.

In South America, where the bilio-miasmatic fevers are endemic, alkaloidal medication has been accepted as a great boon, for there its advantages are understood as in comparison with the older modes of practice.

SPLENITIS.—What has been said in reference to hepatitis also applies to splenitis; that is, that the condition of the blood should receive attention. The red globules accumulating in this organ become friable and pultaceous. Hence, all the venous congestions of the stomach, provoking hæmatemesis. (See Congestion of the Stomach.)

In this inflammation the organ should be degorged by the arseniate of strychnia, which will also have the effect of preventing changes in the blood. [1 granule every hour.]

Splenitis may also terminate by abscess, and in this case capillary paracentesis should be practiced to prevent disorganization of the spleen.

Generally we may charge the physician with being dilatory in the use of the aspirating needle. It is true that he is restrained by the professional responsibility. However, the autopsy should inspire more than regret.

GASTRO-ENTERITIS.—We know that Broussais tried to make gastro-enteritis and its extension to all the other abdominal viscera, as well as to the brain and meninges (gastro-entero-hepto-meningo-encephalitis), the foundation of all medicine. It is because he confounded, in the same category, the ataxo-dynamic fevers and the visceral inflammations, an issue from them, the cause and the effect.

We have already treated of these fevers, and will now confine ourselves to the idiopathic inflammations from local causes.

GASTRITIS.—We must distinguish here the different membranes which may be affected by the inflammation. Thus, when the pain is acute, augmented by pressure, with pinched face, hiccough, greenish vomiting, etc., it is a local peritonitis that we have to deal with, and demands the same treatment as general peritonitis. When it is the mucous membrane that is inflamed, there is a burning sensation that extends to the throat. The tongue is pointed and red at the edges.

The stomach should be given rest; and if the pain or rather the epigastric sensibility persists, a few leeches should be applied. Absolute diet and emollient drinks.

Cramp-like pains indicate that the sub-mucous tissue is affected. It is the gastrodynia proper, and demands the same treatment. (See Gastrodynia.)

In regard to the gastritis of a typhoid nature, we know that the illustrious author of physiological medicine held the opinion that the ataxia and adynamia, were signs of local phlogosis. What is certain, is, that the incendiary medication of Brown only augmented the irritation of the stomach, disposing only of the fixed and diffusible stimulants, such as cinchona and the Virginia snake-root. The typhic state, characterized by sodes upon the tongue and lips. The sub-delirium or virile coma, carphology etc., were only exasperated, and followed by a superazotization of the fluids of the body, or the ataxic state due to the production of the ammonium carbonate. (See Typhoid.)

Acute or idiopathic gastritis has diminished to a remarkable degree since the administration of large doses of drugs has lost favor. We do not run the risk of seeing a simple derangement of the stomach turned

into a gastritis, since the use of drastics has been abandoned; though pompous advertisements are constantly attracting poor dupes.

It is therefore an imperative duty on the part of the physician to do all in his power to keep his patients out of the clutches of charlatanism, which assumes every form in its endeavor to insinuate itself into the confidence of the public.

ENTERITIS.—The distinction of the inflammation of the different parts of the intestines is based chiefly upon their functions, degree of vitality, and the relations which they bear to the neighboring organs.

DUODINITIS.—Is accompanied with billious symptoms, because the bile-duct empties into it. The pancreatic symptoms are less conspicuous unless we number among them the fatty or lactescent diarrhœa, which is noticed in these cases. The pain is dull, deep; the two first portions of the duodenum having no serous membrane. This pain is augmented by pressure exercised upon the liver. The jaundice developed in the progress of this inflammation is due to the extension of the disease to the liver. (See Hepatitis.)

The treatment consists principally in provoking the flow of bile in its proper channel by quassine, and in washing the intestines with the seidlitz salt; this is all the more necessary because the transverse colon is in direct relation with the duodenum. Diet and emolient drinks completes the treatment.

JEJUNITIS AND ILEITIS.—These two floating portions of the small intestines, provided with a peritoneal covering, present the symptoms of a partial peritonitis, characterized by pungent pains radiating about the navel, but deeper than those of this last named trouble.

The colics that we observe in these cases may take the character of internal strangulation, and should be combatted by hyoscyamine and oleaginous substances [1 granule of the hyoscyamine every half hour, with a dessert spoonful of pure olive oil, or this last emulsionized with the yolk of an egg].

It is in the jejunum and ileum that typhoid fever is localized by the hypertrophy and ulceration of Pyer's and Brunner's glands, hence the necessity of washing the intestines with the seidlitz salt. [See Typhoid Fever.]

TYPHLITIS.—Is the inflammation of the *cæcum, and is characterized by a deep pain in the right iliac fossa. Here it is also necessary to differentiate the peritoneal typhlitis, or peri-typhlitis, which frequently extends to the surrounding cellular tissue and gives rise to abscesses, which break either into the bladder or rectum, or else along the inguinal canal. The typhlitis appears frequently in cases of typhoid fever.

The treatment should be anti-phlogistic—leeches, poultices, etc.—and in addition to these we should provide against the accumulation of fæcal matters by washing the bowels with the seidlitz salt.

COLITIS.—The position of the ascending and descending colons causes this inflammation to be felt deeply in the loins, where it may be confounded with psosas abscess. Moreover, as it is increased by straightening the trunk; however, here there is tympanitis and borborigemi, which indicate a functional disturbance of the large intestines. In these cases the use of emolient clysters should be insisted upon. If there are constrictions, hyoscyamine and the oils should be used as in enteritis.

The flexure of the colon being fluctuant and enveloped by a peritoneal fold, the pains due to its inflam-

*The author evidently refers to the vermiform appendix.

mation are sometimes very intense. They should be combatted as in partial peritonitis.

RECTITIS.—This inflammation is characterized by heat in the pelvis and tenesmus of the anus. It should be combatted by leeches, emolient clysters; but chiefly by veratrine and hyoscyamine [1 granule of each together every hour].

NEPHRITIS.—Renal inflammation is manifested by colic-like pains radiating along the plexes of the great sympathetic, and provoking retraction of the testicle in man, and pain in the ovaries in woman. The urine is scanty, red, and sometimes mixed with blood. We should meet the spasm with hyoscyamine, and promote the urinary secretion with digitaline [of each 1 granule together every half hour]. The intestinal washing with seidlitz salt is so much more necessary as the accumulation of fæcal matter in the colon augments the renal pain. We mention the turpentine vapor baths because of their influence on the urine. If uric acid abounds, benzoic acid should be used [1 granule every fifteen minutes].

The fever of nephritis should be controlled by veratrine [1 granule every half hour], in the continuous form; and in the paroxysmal by the hydroferrocyanate of quinine [1 granule every half hour].

CYSTITIS.—In cystitis we should particularly note the state of the urine and of the mucous. Here there is a double source of irritation; on one hand alkalinity, on the other acidity; in the urine the uric acid, in the mucous the chlorides. The use of the seidlitz salt as a wash for the intestines and the administration of digitaline and benzoic acid are indicated [1 granule of each together every half hour]. The vesicle tenesmus is frequently so painful that it should be calmed by the use of hyoscyamine [1 granule every half hour]

in connection with the digitaline and benzoic acid. If the fever is intense it should be controlled by veratrine and aconitine [1 granule of each together every half hour]. In the paroxysmal form the hydroferrocyanate of quinine should be given [1 granule every half hour] until the cessation of the paroxysms.

A few words in regard to cystitis due to strictures of the urethra, in which alkaloidal medication can render great service. It seldom occurs that in retention of urine the pain depends exclusively upon the obliteration of the urethra. On one hand there is the spasm of the neck of the bladder; on the other, paralysis of the body. Before practicing forced catheterism we should exclude these two vital causes by using cicutine, hyoscyamine and strychnine [1 granule of each together every 15 minutes] until relaxation of the spasm and the free flow of urine.

METRITIS.—We have already treated of the metroperitonitis. What we have to say in reference to metritis is rather limited, for the uterus, not in a state of gestation, is gifted with very little sensibility. The organ is in a dormant condition. The proverb, "*Mulier est quod est propter uterum,*" refers rather to the ovaries, which establish the sex of the female, as the testicles do the male. The tissue of the uterus is compact, almost resembling leather, which allows of its engorgement when in the non-pregnant state only with great difficulty. We shall distinguish, however, the metritis from external causes by operations practiced upon this organ that can give rise to very grave symptoms—to acute continuous pains extending to the sacrum and loins, with burning fever.

These accidents should be met by baths, cicutine and hyoscyamine [1 granule of each together every half hour]; and where the fever is of a paroxysmal

character, quinine hydroferrocyanate should be given in doses of one granule every half hour.

TREATMENT OF CHRONIC AND DIETETIC DISEASES.

The chronic affections are due to a morbid cause, coming from either without or within the organism.

They are generally diatheses; that is, some defect of nutrition. The word "defect" does not exclude the vitality; it is by lack of vital resistance that the majority of morbid causes act upon the body. Thus, the use of the alkaloids follows a constant law of reinforcing the vitality in lieu of diminishing it. The term "diathesis" is in itself quite vague, for it implies only a disposition to certain diseases, but this disposition is an organic cause that we should look for before any treatment is instituted.

We have just said that the causes of the diatheses exist either within or without the organism. It is this double subject that we are about to examine.

INTERNAL DIATHESSES.—The internal diatheses are attached to its organ or to its functions. In the physiological condition there is a perfect equilibrium between composition and decomposition. The issue compensates the entrance, so that there is no superabundance in either one or the other. At the same time that the materials of nutrition are properly placed, those of denutrition are eliminated, or submitted to a new elaboration. Thus, the red globules of the blood before being decomposed in the spleen, have their fibrinous elements carried to the liver, to be utilized in the elaboration of new globules. Nature has taken this wise precaution to avoid the augmentation beyond measure of the process of recombination. It is a new construction with old materials.

It is the lack of equilibrium in the two movements of composition and decomposition, which constitute

internal diatheses. It is the duty of the physician then, to re-establish this equilibrium. The medicine loses thus what it offered of iatro-chemical. To return to the primitive cause—life.

PLETHORIC DIATHESIS.—Properly speaking, this diathesis is not a morbid condition; on the contrary it is an excess of health which may have grave and fatal consequences. By plethora we should understand the excess of plasticity in the blood. That, is an excessive nutrition.

It should be combatted by refrigerants, diluents, and by the regular use of the seidlitz salt.

In regard to the local congestions, they should be dissipated by sanguine evacuations in due time and at the proper places. (See Congestions.)

The plethoric diathesis promotes inflammatory diseases, which appear under any determining cause to the extent of assuming a spontaneous character.

This inflammatory susceptibility should be controlled by the administration of the defervescent alkaloïds, such as veratrine, aconitine and quinine.

All ferbile movement should be combatted by aconitine [1 granule every hour], until cessation of the congestion. It is in this prophylaxia that the art of medicine consists, and not in weakening the economy by bleeding and diet.

HÆMORRHOIDAL DIATHESIS.—In the plethoric diathesis, the blood is as red and plastic as it is dark and pitchy in hæmorrhoidal diathesis.

If the red globules are not timely removed they are not oxygenized, so that the hæmoglobin, instead of evolving carbonic acid, yields on the contrary, carbonic oxide.

The hæmorrhoidal diathesis consists in this venous condition of the blood. We may be permitted here

to offer some explanations. The oxygen brought by the inspiration and the pressure of the atmosphere, traverses the walls of the capillary vessels and is placed in contact with the hæmoglobin of the corpuscles of the blood: an oxide hæmoglobin is formed, to which the corpuscles owe their red color. In the poisoning by carbonic oxide this is carried into the blood globules, combined with the hæmoglobin so that these globules are no longer able to become fully oxygenated, and the individual dies asphyxiated. This is what occurs in a minor degree in the subjects of an hæmorrhoidal diathesis.

It is then necessary in these cases to stimulate the blood, with the object of hastening its decarbonization.

Among these means we should rely in the first place upon the seidlitz salt which will produce more penetration of the blood, rendering it more eager for oxygen; then the arseniates, which also stimulate the vivification of the blood.

On the table lands, where the air is rare and the atmospheric pressure lessened, the inhabitants are in the habit of taking arsenic to prevent pulmonary congestions.

The hæmorrhoidal condition predisposes to passive congestions, hence the purplish hue of the tissues, and the general hebitude.

Persons disposed then towards this diathesis, should use the seidlitz salt every morning, and in the evening two granules of the arseniate of strychnine to stimulate the tonicity of the vessels, and to increase the red color of the blood. If these individuals are predisposed to algid, or apoplectiform fevers, they should be treated with the arseniate of quinine. (See Algid Fevers.)

SPLenic DIATHESIS.—As we have already said, it is generally conceded that the red globules of the blood

having once circulated are worn, and consequently cannot again be oxygenized. It is admitted, we say, that these globules are destroyed in the spleen—as the old iron in the foundry—and that the coloring matter or hæmoglobin, is carried to the liver to serve as material for new globules.

When this destruction does not take place, or it is inefficient, there is splenic diathesis. That is, the spleen is engorged and this engorgement is gradually transmitted to the portal vein, which leads us to repeat the aphorism: “Vena portarum, porta malarum.” In these engorgements the arseniate of iron, of strychnine and of soda [1 granule of each together three or four times a days and 1 teaspoonful of seidlitz salt in a tumblerful of water every morning] should be used.

With reference to the symptoms of abnormal congestions, we refer our readers to the article on that subject.

OBESIC DIATHESIS.—This diathesis is frequently met with in literary men, whose intellectual life exceeds their animal life. The arteries are very small and the extremities enlarged. Here there is no fear of congestions, but rather, stasis of the blood.

The liver is the organ most frequently affected, hence these individuals are predisposed to dropsy, the more that their sedentary life generally ends by chlor-anemia.

The obese should take plenty of exercise; the bowels should be kept free by the use of seidlitz salt, and two granules of strychnia arseniate should be taken at bedtime to render the functions active.

Observing this regime the great minds may deliver themselves of their work with impunity.

CHLOR-ANEMIC DIATHESIS.—This is characterized by bloating, pale color due to the predominance of

white globules, or rather to their lack of transformation into red globules.

It will not be amiss to describe the physiology of this genesis—the origin of the white globules. These globules by their anatomic character, are quite similar to the embryonic cells. They are roundish, composed of an external membrane containing a liquid, in the midst of which there is a round nucleus comprehending a nucleoli.

These globules constitute independent organism; as such they execute in the liquid that contains them certain movements, and certain influences change their roundish form.

We find white globules in the lymph, chyle and blood. In the chyle they constitute almost exclusively, its elements. In the lymph they are mixed with the globules. In the blood they are found in smaller quantity, the red globules predominating. In this fluid they are in the proportion of 1 to 350.

The white globules derive in the first period of foetal life, from the intestinal spheres of the egg. Later on others are formed in the original branches of the chyliferous and lymphatic vessels, probably at the expense of the elementary granulations there found. They are also formed in certain parynchomatous organs, such as the lymphatic ganglions, the renal capsules and the thyroid gland. This opinion is based upon the fact that the blood which issues from a parynchomatous organ contains white corpuscles in larger proportion than at its entrance.

The observations upon this subject have been made particularly upon the liver, and this phenomenon assumes the greatest intensity during digestion.

Based upon the anatomy of structure, it has been supposed that the other parynchomatous organs

should perform the same role with regard to the white globules, the spleen being excepted. According to microscopic observations made upon rabbits and frogs, white corpuscles seem to be equally formed in the marrow, from whence they pass into the capillary system of the medullary membrane. These are the opinions most generally accepted relative to the formation of the white globules of the blood. Regarding their physiological role, they are destined to be transformed into red globules.

RED GLOBULES.—We have said that they are met with in small quantities in the lymph. On the other hand they are found in abundance in the blood; in the arterial more than in the venous. They appear in the form of flat discs, with a depression in the center. They are also cells, having an external membrane and containing a brownish substance; they have also a nucleus and nucleolus. The general opinion is that they are derived from the white globules and that this transformation takes place principally in certain pharynchematous organs, where at the same time the white globules are formed. (See above.)

These opinions are based principally upon the microscopical observations of Koelliker, who says that he has seen in certain parts of a frog the white globules transformed into red in the interior of the lymphatic ganglions. In the batrachians these ganglions form plexas, where the lymph is plainly seen to pass into the blood vessels. The transparency of the tissues permits the observation of this metamorphosis with the aid of a microscope. Koelliker has also observed the loss of the nucleus of the white globule by absorption, and their change into flat discs with a central depression similar to the red globules.

According to the facts already cited of the origin of the white globules in the red marrow of the bones, a

similar transformation may take place here. The white globules after penetrating into the capillaries (Koelliker) would at first have a change in color—being originally colorless—they would become dark, the disintegration of their nuclei would follow; then they would become flat and depressed in the center to constitute perfect red globules.

THE PHYSIOLOGICAL ROLE OF THE RED GLOBULES.—It is now a well established fact that these globules perform an important part in the act of respiration, by fixing a great part of the inspired oxygen and carrying it into the tissues, to be utilized in the chemical acts of clarification and nutrition. We should not omit a recent opinion on the intervention of the red globules in the formation of the coloring matter of the bile. This role is rather complicated. It refers to the property of the spleen to destroy the red globules under certain circumstances. Thus if blood is poor in these globules, the spleen does not extract any of them; if on the contrary they are in excess, the spleen retains a part of them to be utilized otherwise. The destroyed globules yield their coloring matter to the albumen of the blood, which carries it to the liver through the portal vein, where it is transformed into cholepherin, bilifulin, etc. This opinion, especially with reference to the latter part, has only the value of an hypothesis.

In regard to the other functions of the red globules, as that pertaining to the organs and becoming a constituent of them, and the other of forming urea in their interior and the extracted matters of the blood, they are as yet sub judice.

ANATOMICAL ELEMENTS OF THE BLOOD IN A PATHOLOGICAL STATE.

As we have before stated, in a physiological state the number of white and red globules is 1 to 350. In

consequence of certain diseases this relation may change and the number of white globules may become greater than the red by diminution of the latter. We observe this change in leucocythemia.

The accumulation of white globules in the blood coincides with a hypertrophy of the lymphatic ganglions, which tends to confirm the opinion that they are formed in these organs.

The study of certain affections has taught us that besides their physiological functions the white globules may accomplish others in their pathological state. Thus in venous and arterial thrombus in connective tissue. The white globules concur in a great part to its organization. In suppuration these globules constitute for the major part, the globular elements of the pus. The latter opinion is based upon direct observation.

Dr. Conheim, one of Virchow's disciples, making a microscopical examination of the mesentric membrane of a frog, observed in its interior a purulent focus by accumulation of white globules, which issued directly from the blood vessels.

From the present state of knowledge of the constituents of the blood and the physiological and pathological roles performed by the red and white globules, the practitioner may obtain an exact idea of the chlor-anemic diathesis and the diseases to which it predisposes.

In the blood of the chlorotic there is manifestly an insufficiency of red globules, coinciding with the depression of animal heat and electricity.

Physically and vitally the living body is an electric apparatus. The battery should be charged neither too much nor too little.

The chlor-anemic condition is found in the latter case, the vital insufficiency being manifested in all its

functions. The pulse is weak and accelerated, there is flushing of the face and palpitation of the heart upon the least exertion; the appetite is lacking or disordered, digestion is slow and more or less laborious, the blood pale and wanting in plasticity, great morbid impressionability and a great susceptibility to nervous and inflammatory affections.

If our young women pay such a dear tribute to puerperal fever, it is because so many of them are chlor-anemic.

It is obvious that the treatment of chlor-anemia should be both hygienic and therapeutic. The patients should not be crowded with large doses of medicine, or submitted at the beginning to a too rich regime—they should be managed by degrees in air, light, and food. We should act as does the gardener toward a diseased plant—gradually submitting it to the sun's rays, careful not to expose it to a high degree of heat and furnishing it with light ground—thus managed he succeeds in furnishing the necessary elements for organic restoration.

We should not lose sight of the fact that there are certain elements lacking in the blood of chlor-anemics; iron for instance. As a consequence it is necessary that we restore this element so that it may give activity to the hæmoglobin, or coloring matter of the blood. We can attain this end by the administration of a few milligrammes of the iron arseniate [4 to 6 per day]. This preparation should be preferred because it has a direct action upon the color and plasticity of the blood.

We should not depend alone upon the restoratives. They should be seconded by the vital stimulants, among which are phosphoric acid and strychnine arseniate [1 granule of each together three times daily].

Chlor-anemic convulsions should be combatted by zinc cyanide [3 or 4 granules a day, according to age.]

Recently the zinc phosphide has been recommended for this purpose. Finally, in chlor-anemia we should cautiously watch congestions, because of the easy passage of the white globules into the connective tissue and of the organic disturbances emanating from them.

TUBERCULAR DIATHESIS.—Tuberculosis is transmitted by heredity, and is not infrequently preceded by chlor-anemia. Its causes must be sought in the blood. Hufeland thus describes the prodromic stage of tuberculosis: “The general symptoms of this stage are shortness of breath upon the least exertion; dyspnœa in climbing stairs; impossibility of holding the breath any length of time or of taking a deep inspiration; running, speaking for any length of time, or exercising the lungs without coughing; hot hands, flushed cheeks—principally at meals—rapidity of the pulse increasing with the least excitement; unusual redness of the tongue and lips; predisposition to disease, principally those of the lungs.” These symptoms characterized chlor-anemia. With the predisposition to tubercles there is leucocynthæmia, or predominance of the white over the red globules. We have stated the theory of Conheim, who believes that the pathological products are derived from the white globules or leucocytes. It is probable that the same happens with tubercles which are originally cells. The same means which should be used against chlor-anemia holds good against incipient phthisis. That is, to maintain a good condition of the blood by the use of salines and the arseniates. The saline and arseniated mineral waters, such as those of Bourboule (Auvergne), are very efficient in these cases. A clear

instance of this is furnished in the reports of 1886. In confirmed tuberculosis the paroxysms of fever should be combatted by quinine—arseniate and hydroferrocyanate—[from 5 to 6 granules of each a day], and the hectic fever by the arseniate of caffeine [from 8 to 10 granules a day].

The narcotics should be sparingly used, because they hinder expectoration. Iodoform and codeine are successfully administered [1 granule of each together] against the paroxysms of cough.

Finally, the digestive forces should be maintained by quassine [4 granules half an hour before each meal].

Undoubtedly we should not be optimists, nor should we be pessimists to the extent of despairing of cure. We have seen a great many cases of spontaneous cure, which proves that they may be obtained by proper medication and care.

We must insist upon prophylaxis, which should above all be instituted. Thus we should have children of consumptive parents submitted from early age to a regime of arseniated milk. We may obtain this by administering to the mother or nurse granules of arseniate of antimony in the dose of ten granules daily.

With this precaution we may permit a consumptive mother to nurse her child, considering first her physical strength. We may state, however, that nursing women generally enjoy a super amount of vitality, which renders all the functions more active.

SCROFULOUS DIATHESIS.—The scrofulous diathesis is due to an acidity of the fluids by reason of the butyric and lactic acids contained in them, hence the swelling of the white tissues, engorgement of the glands, softening of the bones and cartilages, and cold

abscesses. It is necessary to fortify the system by a saline regime (mineral waters), and by a sojourn at the sea shore.

The anti-scorfulous syrup, associated with strychnine arseniate [3 or 4 granules a day, and with each granule a tablespoonful of the syrup].

GOITER, OR GOITROUS DIATHESIS.—This diathesis is characterized by an abnormal development of the thyroid gland. It is observed in the deep valleys at the foot of the Alps and the Andes. It is said to be due to the absence of iodine in the water. What is certain is that the submitting those affected with goitre to the influence of iodine causes the gland to rapidly decrease to its natural size. The best remedy in these cases is arsenic iodide. At the same time local applications of the tincture of iodine should be made.

Cretinism is a scorfulous affection encroached upon by a goitrous diathesis; it is the lowest form of human degeneration—a race destined to extinction.

GOUTY, OR URIC, DIATHESIS.—This diathesis is due to a systemic condition not unfrequently hereditary, and characterized by an excess of urea in the blood. The uric acid attacks the white tissues; tumefies them, and produces swellings of the small articulations. The gout proceeds by intervals or paroxysms, whose intensity is diminished by the alkalies; principally the carbonate and benzoate of soda [6 to 12 granules a day when the urine is loaded with brick-dust sediment, and by the daily use of seidlitz salt].

Latent gout—that is when there is no observable manifestation—should be treated with the arseniates of iron and soda [5 to 6 granules per day]. The paroxysms of gout should be controlled by digitaline and cholchicine [1 granule of each together every half hour until the fever has subsided]. If the fever

should continue by nocturnal paroxysms quinine hydroferrocyanate should be used [1 granule every two hours until cessation].

RHEUMATIC DIATHESIS.—This diathesis is due to the retention in the blood of the principles of the cutaneous perspiration or sudoric acid, hence the acidity which characterizes it—the swelling of the fibrous parts, the tendons, neurolemma, and the neuralgic pains which accompany them.

The treatment, as regards the cause, is the same as in gouty diathesis—the use of the alkaloids. And as regards the symptoms, the defervescent (aconitine and veratrine), and the anti-periodics (quinine arseniate and hydroferrocyanate). The fever should be controlled by active means so as to prevent its explosion upon the vital organs. Local application of the tincture of iodine is often of advantage.

GLYCOSURIC DIATHESIS.—This diathesis is characterized by an excess of sugar in the blood and frequently its acidification, as is proven by the secretions.

The sugar is generated in the liver, and when it is not thoroughly burned it is eliminated by the kidneys. Yet all diabetic subjects do not have sugar in their urine. This substance, not consumed, is retained in the tissues and provokes erratic pains as complained of by this class of sufferers, who attribute them to rheumatism, although there is a great difference in origin between the two affections. The one is highly carbonaceous in its nature, while the other is nitrogenous.

Saccharine diabetes terminates by marasmus and disorders of the various organs. It should be combatted by a saline (mineral water) regime, and the arseniates of strychnine and iron to restore the blood to its natural condition [3 granules of each together

daily]. The daily use of seidlitz salt should be insisted upon.

Diabetes is frequently dependent upon an irritation of the spinal cord and the cerebral peduncles, as observed in venereal excesses.

In these cases the following prescription should be used:

℞. Camphor, monobromated, granules... I
 Hyoscyamine, granules..... I
 Cicutine, granules..... I

SIG.—Take at a dose, morning and evening.

Diabetic patients are frequently subject to erratic fever, which should be controlled by—

℞. Quinine hydroferrocyanate, granules.. I
 Quinine arseniate, granules..... I

SIG.—Take a dose every half hour during the paroxysm.

ALBUMINURIC DIATHESIS.—This diathesis is characterized by albumen in the urine, and constitutes a great cause of debility. It is also seen in cases of puerperal eclampsia. The blood deprived of its protein elements becomes watery; and dropsy follows as a consequence. It becomes necessary to give density to the blood, which is best done by prescribing a saline (mineral water) regime, and treating the anemia with—

℞. Strychnine arseniate, granules..... I
 Iron arseniate, granules..... I

SIG.—Take at a dose, three or four times daily.

A strengthening and analeptic regime must be insisted upon.

The erratic fever which is observed at night, will best be combatted by—

℞. Quinine hydroferrocyanate, granules.. I
 Quinine arseniate, granules..... I

SIG.—Take at a dose every half hour until cessation of the fever.

CHYLURIC DIATHESIS.—This diathesis is characterized by white or milky urine, like chyle. The microscope shows, in effect, a constant number of white and red corpuscles, and an innumerable number of molecular granulations having the Brownian movement. Here and there some fatty globules. These are clearly the elements of the chyle, and their appearance cannot be accounted for in any other way than a mistake of place (*error loci*); that is, these globules are carried to the kidneys by the blood.

Chyluria is a disease of the hot climates, and depends upon the torpidity of the liver.

The therapeutic indications are as follows:

℞. Quassine, granules. 3 or 4

SIG.—Take at a dose at mealtime.

This should be supplemented by one or two teaspoonfuls of seidlitz salt in water every morning.

The alimentation should be cooling and restorative.

CHOLURIC DIATHESIS.—This is due to the presence of the coloring matter of the bile in the urine. It should not be confounded with the coloring matter of the urine proper, and which differs according to the state of the blood and nerves. In choluria the urine is constantly acid, because of an excess of biliary acid and regardless of the acids proper to the urine.

Choluria provokes general disease and disorders of the different organs which somewhat resemble rheumatism in character, the treatment of the two diseases are approximately similar, consisting in the use of the alkalies and the arseniates.

℞. Strychnine arseniate, granules. 1

Digitaline, granules. 1

SIG.—Take at a dose three or four times daily.

℞. Quassine, granules. 2

SIG.—Take at a dose at mealtime.

In connection with the above, seidlitz salt morning and evening as a refrigerant.

BLENURIC DIATHESIS.—This diathesis consists in the habitual accumulation of mucous in the urine; acting as a ferment, decomposing the urine and producing carbonate of ammonia which not only irritates the bladder, but precipitates the earthy phosphates and favors the deposition of ammoniac-magnesian phosphates.

This may be controlled by the daily use of the seidlitz salt, and the benzoate of soda.

ALKALURIC DIATHESIS.—The alkalinity of the urine may depend upon fixed or volatile bases. The fixed bases are soda, lime and magnesia; and the volatile ammonia.

The fixed bases are derived from the elements containing alkaline salts, or from water charged with calcareous matter.

The alkaline waters, such as Vichy, Vals, Contrexville, Carlsbad and Marienbad, will equally produce this result.

The ammonia is derived from the blood and indicates a too heating regime, and that the nitrogen is not converted into urea. There is always danger of typhoid in these cases.

The daily use of the seidlitz salt will lessen this danger without combining with the fixed bases, for the small amount of magnesia deposited prevents colics, and neutralizes the acids in the intestines.

URIC ACID DIATHESIS.—The acidity of the urine, as demonstrated by Liebig, is derived from the acid phosphates, rather than from the uric acid, which is found in the form of neutral urates, and whose salts are not more soluble in cold than the uric acid itself. The acidity of the urine may also depend upon fixed organic acids and rarely upon fatty volatile acids.

The urine has a strong acid reaction; is generally loaded with pigments and has a brown or reddish yellow color. On cooling it precipitates the urates in abundance and its specific gravity is ordinarily high.

The excessive use of the mineral acids and certain dyscrasias, such as gouty rheumatism, are the most common causes of acid urine.

The organic acids transformed into alkaline carbonates render the urine alkaline rather than acid. The uric acid diathesis predisposed to uric and urated calculi; and provokes vesicle catarrh, hence the advantage of the habitual use of the seidlitz salt so as to prevent the hazardous diseases which affect strong constitutions.

One word in regard to oxyluria, or the presence of oxalic acid in the urine and the formation of mural calculi, or the calculi of oxalate of lime. This depends upon a feculent and saccharine alimentation, the sugar not being thoroughly burned, is converted into oxalic acid.

This has been demonstrated by feeding puppies with fecculet matters and sugar. A nitrogenous and saline regime is necessary to prevent this diathesis. One word also in relation to the sodium chloride [common salt] in the alimentary regime. M. Berge has demonstrated that without salt in the plasma of the blood, fibrin, albumin, musciline and astrine; that is, all the nutritive juices of the blood and the tissues would solidify and the globules of the blood would dissolve. These globules are decomposed in a solution of pure albumin, as in distilled water, at the same time that albuminous water containing only .01 per cent sodium chloride, maintains these globules in a perfect state of preservation. When the food of man is derived of salt, he becomes pale, chlorotic and

edematous, the appetite disappears and the secretion of the saliva and gastric juice is diminished.

The blood when salty absorbs more oxygen, stimulates the physio-chemical action of nutrition of the tissues and provokes the elimination by the kidneys, lungs and skin of the nitrogenous principles of the regressive nutrition, hence the great advantage in the saline regime for the maintenance of health.

HÆMOGLOBINURIC DIATHESIS.—This diathesis is characterized by the presence in the urine of the coloring matter of the blood; and denotes a decomposition of the red globules; it is observed in poisoning by peroxide of hydrogen, sulphate of copper and chloral.

Spontaneous attacks of hæmoglobinuria occur but seldom. The *Repertoire* of 1873 cites a remarkable case, the young man affected by it was healed, thanks to the diagnosis which was made early, by appropriate treatment.

Hæmoglobinuria is distinguished from hæmaturia by negative symptoms, the absence of globules and fibrine in the urine, and also the absence of albumin, for coagulation is not obtained, except by chemical agents which split up the hæmoglobin [acetic acid for instance].

Acetate of lead, which does not decompose hæmoglobin, does not render turbid the liquids which contain it in solution. [Spring.]

The presence of hæmoglobin in the urine is shown by a light substance similar to coffee grounds and insoluble in ether.

When hæmoglobin is eliminated by the kidneys in small quantities it causes but little inconvenience to the general health, but this is not the case when the amount eliminated is considerable, as in the case observed by Vogle, where there was several ounces of decomposed blood.

This diathesis may be controlled by the arseniates, as follows:

℞ Strychnine arseniate granules 3 to 6
 Iron arseniate 3 to 6

SIG.—The above amount to be taken in the course of the 24 hours.

The foregoing treatment to be supplemented by a saline and restorative diet and plenty of exercise.

In the toxic form of hæmoglobinuria, depending for instance upon a sojourn in a closed place where oxide of carbon or arseniated hydrogen has been diffused, we should recur to transfusion of blood to restore the globules.

The injection of chloral to produce anæsthesia has been followed by death from asphyxia, hence we should avoid its use. The more that we have in its place a harmless anæsthetic agent in bichloride of methylene.

UREMIC DIATHESIS.—The role of the kidneys being to eliminate the uric acid and urea from the blood in the form of urates, the functions of these organs should be examined with reference to insufficient elimination, and which causes an intoxication, hence the name “Renal Toxæmia” proposed by Ruth. Urea itself is not a poison, considering the fact that we can introduce comparatively large doses of it into the blood of animals without producing either death or toxic symptoms.

This disturbance of the kidneys, according to Freirichs, is due to the carbonate of ammonia which is formed at the expense of the urea accumulated in the blood, to which theory it has been objected—the absence of a ferment—but are there no albuminates in the blood which may act as ferments? It is certain, however, that animals whose kidneys have been ex-

tirpated perish in the midst of symptoms of putrid decomposition, as has been demonstrated by the experiments of M. Claude Bernard.

Objections may be offered that the operation may have given rise to a septicemia, but the same typhoid symptoms are produced when the cutaneous pores of an animal (the horse for instance) are closed or obliterated by an impervious substance. The skin takes the place of the kidneys in the elimination of urea under the form of sudoric acid.

In Asiatic cholera where the suppression of the urine is complete, typhoid symptoms appear during the period of reaction; and which cannot be explained otherwise than by the urea in the blood.

The typhoid fever which is characterized by scarcity of urine, is nothing more than an uremia.

The urine in a physiological condition eliminates all the non-assimilating products—veritable effete matter which, under the influence of oxidization or any other chemical cause, tends to be changed into urea. A part of these substances undergo this transformation in the tissues in the blood, and perhaps in the kidneys, and the rest are eliminated with the urine without further change.

When enuria occurs, all these products hasten to accumulate or decompose in the blood and in the parynchema of the kidneys, and their action upon the nervous pulp is manifested by uremic phenomena. (Spring.)

These morbid forms are numerous. We shall mention them summarily.

UREMIC ACCIDENTS.—These are generally nervous disturbances which exhibit now depression, now excitation. As remarked by Rosenbaum, the depressent influence affects in preference the brain and

sensory organs to the point of constituting an acute anemia of the cerebrum; which means that in uremia there is a constant impoverishment of the blood or hydremia. The autopsies demonstrate that in uremia there is œdema, or at least cerebral anemia, as shown by Dr. Monod, in uremic children.

The symptoms which characterize uremia are as follows: Intellectual apathy, somnolence and coma. Uremic coma may be exactly similar to apoplectic coma, but not infrequently it is less profound and less permanent. The patient now and then recovers sensibility and conscientiousness. The coma is then replaced by hebetude.

It is after several of these paroxysms that the coma becomes persistent. (Spring.)

We reiterate here what has already been said in regard to apoplectiform fever and its treatment; that is, that sanguineous depletion should not be practiced, but the treatment should on the contrary be commenced with quinine hydroferrocyanate, to antagonize the paroxysms.

The pyrexia which accompanies uremic paroxysms, exhibits sometimes a great elevation of temperature 105° F. (40° Cent). In this case veratrine should be used [1 granule every half hour]; to resume the administration of the quinine salt as soon as the temperature has descended to $98\frac{3}{5}^{\circ}$ F. (37° Cent.) So much for acute uremia.

The chronic form of the disease assumes various forms. Thus with the affection of the sensory organs we observe amblyopia, which may extend to the suppression of vision, due to the sub-retinal œdema which may be distinguished from hæmorrhage of the retina by means of the ophthalmoscope.

In this case the following prescription would be indicated:

- ℞. Phosphoric acid, granules 1
 Strychnine sulphate, granules 1
 Quinine hydroferrocyanate, granules . . . 1

SIG.—Take at a dose every hour.

The practitioner should make particular investigation as to whether the pupils are contracted or not, which serves to distinguish between symptomatic and organic amaurosis. Dazzling of the eyes occurs but seldom in uremia.

There is buzzing and singing in the ears, due to dryness of the internal ear.

Deafness in this case depends upon an œdema of the auditory utriculi. It may give as a result vertigo and disturbances of co-ordination of movement. (See Otitis.) Frequently there is headache appearing in the hemicranial form.

The same medication is applicable here as in amblyopia.

The organs of locomotion are frequently affected by convulsions; often clonic, probably due to cerebral anemia or hydræmia. These convulsions assume an epileptic form, and are preceded by an epileptic aura. The treatment is different according as there is softening or induration of the spinal cord.

In hydræmic epilepsy, we should administer the following:

- ℞. Iron arseniate, granules 3
 Strychnine arseniate, granules 3
 Digitaline, granules 3

SIG.—The whole to be taken in the 24 hours.

Potassium bromide is indicated where there is acute spasms.

In uremia there sometimes exists intolerable pains in the limbs and in the articulations, which are calmed by morphine and hyoscyamine [1 granule of each together every half hour until sedation].

We insist upon the use of seidlitz salt with the view of preventing gastric embarrassment, and also a billious state.

Gastralgias and enteralgias are relieved by the following:

℞. Strychnine sulphate, granules..... I
 Hyoscyamine, granules..... I

SIG.—Take at a dose every half hour until sedation.

If there is disturbance of respiration, dyspnœa, angina pectoris, etc., as these may promptly terminate in pulmonary œdema, we should combat them with—

℞. Iron arseniate, granules..... I
 Strychnine arseniate, granules..... I
 Hyoscyamine, granules..... I

SIG.—To be taken at a dose every half hour until sedation.

In individuals addicted to alcohol passive epistaxis frequently occurs, which should be controlled by—

℞. Quinine hydroferrocyanate, granules. . I
 Iron arseniate, granules..... I

SIG.—Take at a dose every 15 minutes until arrest of the hæmorrhage.

HYDRURIC DIATHESIS.—In a physiological condition the average of the fixed principles of water in the urine is $\frac{360}{1000}$. When this proportion exceeds 2,000, hydruria is present. This should not be confounded with a sudden increase in the mass of liquid resulting from abundant libations. The urine is not impoverished in this case; it has rather a substitution of the water imbibed. In veritable hydruria, that which arises from the abstraction made by the ingested liquids, there is a loss of density—that is, of its proper elements.

This condition is observed frequently in epileptiform hysteria and depends upon uremia, the extracted

principles of the urine being retained in the blood. The same medication as for uremia should be used.

We shall offer a few remarks here in reference to fermented and distilled beverages, the consumption of which grows daily, and against which the force of public opinion is powerless.

We know the popular saying: "The blood of toppers turns to water." This is because alcohol destroys the red globules and the æther [the spirit] infiltrating the tissues reduces the blood to an aqueous condition. We will add that the lack of saline principles [the distilled or fermented drinks containing little or none], and the increased intra-vascular pressure produces albuminuria. [See the latter].

The abuse of fermented drinks provokes dyshæmic hydruria. We know that beer drinkers are bloated and infiltrated. We might recall here the extenuating circumstances in favor of hop beer, but in the majority of beer the hops are a myth. Independently of the substitution of the malted barley by glucose, and of the diminution of the gluten to render the beer more clear, the hops are replaced by bitter substances which do not possess anti-fermentive properties; hence the beer becomes sour, produces colics and intestinal cramps. We shall add to this that instead of using potable water, water charged with gelatine is frequently substituted, and in lieu of a healthy tonic and nourishing drink, we have a beverage agreeable to the eye but debilitating to the system.

DIATHESÈS FROM EXTERNAL CAUSES.

SATURINE DIATHESIS (Lead Poisoning).—This is due to the absorption of minutely divided lead, or of its salts (carbonate, etc). In the tissues, upon the skin and mucous membrane, there is an indicative color of

lead; and the lead-line upon the gums and nails; there is also an anæmia due to an alteration of the red globules of the blood.

This diathesis transmits itself by heredity, under the form of convulsions and idiocy.

The saturnine intoxication gives rise to persistent constipation, with terrible colics and paralysis of the intestines. It is attended with pain and paralysis of the extremities, commencing with the extensor muscles.

Plumbers and painters are particularly exposed to lead poisoning (saturnine intoxication). We observe it equally in the drinkers of beer which has been drawn through lead pipe.

To overcome the lead diathesis it is necessary to hasten the elimination of the lead from the tissues. The best means of accomplishing this is by the use of the sulphurous vapor baths of Dr. Bremond. By the use of these baths the lead is deposited upon the surface of the body in a gray coat (sulphide). The temperature of the bath may be raised to 105° or 109° F. (40° to 42° Cent.), so that the oily substances of the skin is fused, and the skin rendered more pervious.

In addition the following is to be given to control the colic:

℞. Hyoscyamine, granules i
Strychnine sulphate, granules i

SIG.—To be taken at a dose. To be repeated at the end of an hour if the desired effect is not obtained.

In the civil hospital at Ghent, the procedure is as follows: After exposing the patient for several minutes in a sulphurous vapor bath case 60° to 85° F. (20° to 30° Cent.), he is submitted to an ordinary bath; then a tablespoonful of castor oil is given, with one granule each of hyoscyamine and strychnine sulphate.

The strychnine is given with the object of arresting the paralysis of the longitudinal fibers of the large intestines, and the hyoscyamine to dissipate the spasm of the circular fibers.

This treatment is to be persisted in so long as the symptoms exist. The patient must be well fed, and take every morning a teaspoonful of seidlitz salt.

The anemia should be combatted by the arseniate of iron [6 granules per day].

MERCURIAL DIATHESIS.—This is due to the presence in the body of mercury in fine division, as seen among the workmen employed in the manufacture of mirrors, or in the state of a salt, in consequence of the abuse of the mercurial treatment.

Mercury produces the effects of secondary syphilis after salivation—moist eruptions of the skin, swelling of the gums, pains in the limbs, swelling of the bones (gummata), alopecia, etc, and mercurial tremor.

To combat this diathesis the patient should be submitted to the vapor of iodine; at the same time the anæmia should be controlled by tonics.

The iodine forms with the mercury a soluble compound (mercury proto-iodide), which is eliminated by the kidneys.

CUPROUS DIATHESIS.—This is due to accidental or criminal poisoning, the latter seldom occurring because of the vomiting produced by the copper sulphate. Formerly the copper salts were used quite frequently in the treatment of ill-conditioned ulcers.

The cuprous diathesis may also be due to the sophistication of bread, the copper salt being added to make the bread light.

The intoxication produced by copper provokes gastro-intestinal irritation with vomiting, colic, bloody alvine evacuations and convulsions.

The trouble should be combatted as follows:

R. Quinine hydroferrocyanate, granules. . . i
 Hyoscyamine, granules. i

SIG.—Take at a dose every half hour until sedation.

CADMIC DIATHESIS.—This is noticed in the laborers employed in the separation of this mineral from zinc, and may also be the result of the application of the zinc caustics.

It is characterized by swelling of the body, petechial eruption, salivation, loss of appetite and nausea. It should be treated with iodine and tonics.

IODIC DIATHESIS.—Iodine destroys the plasticity of the blood, predisposes to passive hæmorrhages from the nose, lungs, intestines; and produces infiltration of the connective tissues—in a word, it produces lymphatism.

To correct this diathesis the blood should be restored to its physiological condition.

ARSENICAL DIATHESIS.—This is produced by the abuse of arsenic, principally in the form of Fowler's or Pierce's solutions, the doses of which is difficult to manage when placed independently in the hands of patients. There is the same alteration of the blood observed here as in all slow poisonings by metallic substances.

The face is bloated, principally the eyelids. There is anæmia and shortness of breath.

The anæmia should be antagonized by the preparations of iron. Prefer the saccharated oxide*.

FERRUGINOUS DIATHESIS.—The abuse of the chalybeates produces a dyspepsia characterized by a sensation of weight in the stomach, offensive eructations, constipation. The alvine evacuations colored by the tannate or sulphate of iron**.

*Dialysed iron is to be preferred.

**Our author probably intends to say sulphide of iron.

To correct this condition, seidlitz salt should be administered every day.

PALUDAL DIATHESIS.—This is due to the penetration in the organism of marsh miasmata. The body gradually contracts into a turfy state; the skin dries and assumes the color of old parchment (“fossil”); the liver and spleen are frequently altered; the digestion is laborious, and infiltrations or dropsical effusions occur.

This condition of affairs may be remedied by the use of the following:

R. Soda arseniate, granules.....i
Strychnine arseniate, granules.....i

SIG.—Take at a dose from four to six times daily.

DARTROUS OR HERPETIC DIATHESIS.—This diathesis is a modification of scrofula, rheumatism, syphilis and certain paracitic intoxications [chiefly lichens]; in a word, it is an alteration or vicious condition of the blood.

For this reason the ancients believed in the repercussion of dartrous diseases, that is, that the eruption of the skin and mucous membrane would disappear suddenly, to be followed by carditis, hepatitis pneumonia, etc., which diseases were characterized as dartrous, because they, presumably, originated from the same source.

We may conclude from this, not that the dartrous diathesis should be neglected, but that they should be cured [if possible—Trans.] by means appropriate to their cause and to the constitution of the patient.

To facilitate the treatment, we divide the dartrous affections into dry and moist. Among the dry we have the ferferaceous and scaly [leprous] dartrous; the moist dartrous, which are in larger number, comprehend the phlictenoid [herpes], the ereythmoid, the pustulous [acne] and the corroding [lupus].

The dry herpetic diathesis demands the use of the arseniates; the moist that of the iodides, cod liver oil, and all a restorative and refreshing regimen with the daily use of the seidlitz salt.

CANCEROUS DIATHESIS.—This diathesis is originated in the blood, hence the straw color which is noticed in those affected with the disease.

There are, however, cancers which may be called efflorescent, as for instance the medullary fungus; these affect persons of a weak, flabby constitution, and even children.

We think it possible to study the difference in the mode of development of cancers, for some will develop from the red and others from the white globules of the blood. [This manner of explaining is entirely personal.]

To prevent cancer or to inhibit its relapse, the condition of the blood should be modified by means of the arseniates or the iodides.

When the constitution is sufficiently prepared we may proceed to the extirpation of the cancerous growth, until then it is dangerous to interfere with them [surgically], because if extirpated at one place they reappear at another, frequently to the detriment of the patient. Thus a cancer of the breast may often appear in some internal organ, spleen, liver, or kidneys.*

In cancerous cacexia, that is, when the lymphatic ganglia are affected, it is useless to attempt an operation, for it is certain to be followed by a recurrence. We may in these cases hinder the proliferation of the cancer cells by dressing the ulcerated surfaces with carbolated oil, which has the property of destroying the microzyme.

* Our author evidently intends to emphasize the recurrent and migratory character of sarcoma.—*Trans.*

The shooting pains should be calmed with cicutine. [Hemlock has been extolled as a specific against cancer. It may produce softening of the surrounding tissues and thus tend to diminish the inflammatory action.]

Trousseau says of hemlock: "In 1836 we were more incredulous than we are at present in reference to hemlock, but in the course of the year 1840 we had at the Necker hospital and in our private practice, experimented with this medicament, and we should declare that it seemed to us to be the most potent agent in the treatment of chronic engorgements; by means of the constant application of poultices upon the abdomen, we have witnessed the cure of two cases of acites, one dependent upon the presence of chronic peritonitis and the other upon numerous tumors of the abdomen. The cure was complete at the end of three months' treatment. We have also experimented with hemlock in cases of pulmonary phthisis. We have the patient's chest covered with a thick hemlock plaster, in a jacket, which is renewed every five days. These simple means calms the cough and facilitates expectoration, allaying the pains of the chest so common to consumptives. Under the influence of this medication, ordinarily the fever is moderated. In a word, we have obtained in consumptives whose disease had a slow progress, an amelioration and suspension of symptoms which we had not been able to obtain by any other known medication.

"We do not pretend to say that we can cure cancer and phthisis, diseases which are the *opprobrium medicina* of physicians, but we think that by means of hemlock, in a certain number of cases, the internal inflammatory process which hastens degeneration in cancers and which disorganize so rapidly the lungs

of those who had, in the beginning, but a small number of turbercles, may be modified."—*Manuel Medical*, deuxieme edition.

It is lamentable that this great clinician has been so early lost to science. He was not one of those opposed to progress and if the dosimetric [alkaloidal] system had been produced during his life, we are convinced that he would have given it all the support of his authority. At least he would not have condemned it without trial.

In resuming the subject of the treatment of cancer, we shall state that operation should never be practiced without great reserve, and in all cases it should be preceded and followed by the use of the arseniates and iodides internally, also by cicutine, to diminish the morbid susceptibility.

If the engorgement is considerable, we should administer:

Sodium arseniate . . . 4 to 6 granules per day.

Cicutine . . . 2 granules morning and evening.

If anæmia be present, iron arseniate should be preferred. Should the cause be dartrous, we should give:

Arsenic iodide 6 to 8 granules per day.

Cicutine . . . 2 granules morning and evening.

Should there be a syphilitic cause or history, we should give:

℞. Cicutine, granules I

Mercury prot-iodide, granules I

Sig.—Take at a dose 4 times daily.

It is obvious that the internal treatment must vary with the morbid cause.

It is useless to seek a specific against cancer, for there is none, no more than there is against any other diathesis. All that we can do is to modify the con-

dition of the blood and endeavor to bring it to a proper physiological state, hence the indication to maintain the vital force by the arseniate of strychnine, which should be added to the above treatment, two granules at bedtime.

Strychnine and cicutine are the best vital stimulants.

What has been said of the violence of cicutine, which has even been compared to that of prussic acid, is evidently an exaggeration. We have quite frequently taken granules of cicutine until its physiological effects were manifest, that is, until the vital functions were stimulated artificially, and our experience has been as follows: On the side of the functions of relation, a tendency to repose and sleep without fatigue, a hypnotic effect different from that produced by morphine (which determines a sensation of pressure and constriction of the temples), a calm awakening without headache. On the side of the vegetative functions, a slowing of the pulse and a noticeable increase in diuresis and diaphoresis.

We can easily understand that hemlock calms the pain of cancer and repairs the forces of the patient by sleep.

ALKALOIDAL TREATMENT OF NEUROSES.

Neuroses are disturbances of enervation, dependent either upon congestion or anæmia, making their treatment vary in accordance with the cause.

HYSTERIA.—This neurosis takes the front rank, for it may exhibit at the same time both cerebro-spinal and sympathetic symptoms.

Congestive hysteria depends upon a state of plethora or orgasms, chiefly due to the uterus and its appendages (ovaries). Women affected with this disease are generally viragos.

Frequently there is venereal desire which is not satisfied.

This hysteric passion leads sometimes to disturbances, purely nervous, such as laryngeal spasm, carried to the degree of hydrophobia,* nymphomania, comatose convulsions, aberrations of the mind the most extravagant, with momentary suspension of the action of the external senses, and a species of clairvoyance as observed in hypnotism. The *Reportoir* of 1876 related a remarkable case of this kind.

Congestive hysteria demands a sedative treatment, which is obtained by the use of monobromated camphor [3 or 4 granules per day], and as a refrigerant, the seidlitz salt [every morning]. Against the uterine spasm we use hyoscyamine with the camphor, to-wit:

℞. Camphor monogromated, granules 1
 Hyoscyamine, granules 1

SIG.—Take at a dose every hour until cessation of the spasm.

Assafœtida employed in these cases, and frequently abused, has also the effect of quieting the spasm. This drug, however, by its repulsive and penetrating odor and bitter, acrid taste, is objected to by many women.

In congestive hysteria we are at times compelled to deplete the neck of the uterus by means of leeches.

In anæmic, or chlor-anæmic hysteria, the most rebellious and accompanied with epileptiform convulsions, independently of the chalybeates, the anti-spasmodics should be used.

This is obtained from the series of valerianates.

Against the anæmia:

Iron valerianate, 5 to 6 granules per day.

* It is generally known that the genetic passion, unsatisfied in animals, principally in the domestic dog, leads to hydrophobia, as has already been stated in the article on diphtheria.

Against convulsions:

Zinc valerianate, 6 to 10 granules per day.

Against periodicity:

Quinine valerianate, 10 to 12 granules in the intervals.

The ethers should be avoided as much as possible, for they increase the neurotic susceptibility, provoking anæmia. If this be of long standing we should recur to the arseniate of iron (which of all the chalybeates is the best to increase, the most largely, the red globules in the blood).

Among the suspensive hysterical neuroses, we shall mention aphonia and dysphasia in the absence of all inflammatory cause. We must in these cases have recourse to strychnine arseniate combined with hyosciamine [one granule of each every half hour, until cessation of the spasm].

The same remarks apply to pneumatosis, the peculiar bloating, which may provoke errors in diagnosis, such as nervous tympanitis and hysterical physometria, etc.

ASTHMA.—Of all the neuroses this is the most persistent, as it is frequently connected with constitutional or organic troubles.

It should be distinguished from the stridulous and anginous affections which have already been mentioned, and that are entirely fortuitous, whilst asthma persists, or at least a part of it, for asthmatics are freed by age from their trouble; true asthma is recognized by definite phenomena. The asthmatic is or has been rachitic, he carries the head low down between the shoulders, the cranium is large, the back bulged, the chest flat, the respiration sonorous, at times crackling and sibilant, without rales in the absence of a paroxysm. These paroxysms commence gradually,

respirations become more and more difficult, jerky; the face at first pale, expresses great anxiety, then it becomes injected and purplish; the asthma is now at its height, asphyxia by carbonic acid is manifested; in fact the expiration contains as much as 12 volumes of carbon to 89 of nitrogen.

What occurs in this case? Evidently there has been a spasm of the lesser bronchial tubes and dilatation of the pulmonary alveoli; the chest also gives sonorous sounds upon percussion, toward the base there is not infrequently tympanities, as the gas also accumulates in the stomach.

The vesicular murmur is diminished, suppressed, or replaced by a tubo-vesicular blowing, rough and rapid, when at intervals the air enters the lungs.

There are rhonchi and changeable sibilant murmurs, that is, murmurs that change their location with each instant.

The sibilant rals are more acute, more intense and longer during the expiration than during the inspiration.

At the end of the paroxysm the rals become moist and acquire more and more volume.

The paroxysm commences gradually or suddenly, and passes off in the same manner, with cough andropy expectoration, leaving the patient with a feeling of lassitude and general fatigue.

With the return of the heat there is considerable diuresis, the urine being loaded with mucous urates.

Occasionally an attack of sternalgia simulates asthma, producing a paroxysm resembling closely the true asthma. [See neuralgias.]

There are periods in which there are many successive paroxysms.

Asthma ceases with age, but this may happen late in life or fail altogether, for in the meantime these

subjects may die from organic disease of the heart or lungs.

Before speaking of the treatment, we will say one word in regard to the differential diagnosis, because it is this which must decide the question.

We have given the general characteristics of the asthmatic, the absence of all physical signs of organic disease of the heart and lungs come now to corroborate the first opinion.

Angina pectoris is easily differentiated because it is a painful disease, giving rise to fever, sometimes continued, at others remittent or periodic.

In asthma there is a complete absence of pain, and the paroxysm terminates itself by a return of the heat; in angina pectoris, on the contrary, the heat is often the commencement of a cardio-pulmonary inflammation.

In asthma the congestion is always passive.

The treatment of asthma should depend upon the diverse general or local condition of the patient.

In regard to the general conditions, it is evident that there is hereditary or accidental dyscrasia; the latter being easier to control than the former; for while one can avoid climacteric, he cannot avoid hereditary conditions.

It is always possible for asthmatics to cure—at least improve their health—by a change of climate. Those who live in marshy countries should change into a dry climate, for the damp air is generally injurious to this class of sufferers. Although it is not always convenient to live in dry atmosphere.

The asthmatic generally derives the most comfort from a residence on the sea coast, because of the increased barometric pressure.

On elevated plateaux the difficulty of breathing is increased, because of the rarity of the atmosphere.

It is best to choose intermediary localities.

Secondly: We should ameliorate the dyscrasia of the blood by the restoratives, to-wit:

℞. Strychnine arseniate, granules. I

Iron arseniate, granules. I

SIG.—Take at a dose 3 or 4 times a day.

During the paroxysm, the following:

℞. Quinine hydroferrocyanate, granules . . I

Hyoscyamine, granules. I

SIG.—Take at a dose every half hour until cessation of the paroxysm.

Dyscrasias and diatheses should always be taken into consideration when they either provoke accidental asthma or exaggerate the constitutional.

Thus, asthma in gouty individuals demands the anti-gout or anti-rheumatic treatment, colchicine, quasseine and jalapine, to render more active the action of the digestive and urinary organs; in syphilitic subjects the asthma demands the mecurials and iodides. Toxic asthma requires the treatment which would be used against the intoxication producing it, such as the asthma affecting those who work with lead, copper, or mercury.

ALKALOIDAL TREATMENT OF MENTAL ABERRATIONS.

HYPOCHONDRIA.—We place at the head of mental aberrations hypochondria, for it leads frequently to mental alienation. Hufeland defined hypochondria as the “hysteria of man,” and there is truth in it; for hypochondria is as frequent in man as hysteria in woman. It is an abdominal neurosis which transmits to the brain despondent, restless and diffident sensations. In hypochondria there is a dyscrasia, or incomplete elaboration of the blood which is manifested by the same spasm and bloating as is noticed in hysteria. The predominant symptom is constipation, and

the dark and resinous dejections denote an engorgement of the whole abdominal venous system. The first step to be taken is to promote the free action of the bowels by the matutinal use of the seidlitz salt, and when this fails by podophyllin, associated with hyoscyamine to dissipate intestinal spasm [1 granule of each morning and evening].

The hypochondriac should take plenty of exercise.

In regard to the therapeutic treatment, as there is frequently engorgitation of the viscera arseniate of soda is indicated [2 granules at mealtime].

Anemia should be combatted with arseniate of iron and of strychnine [1 granule of each together morning and evening].

PHRENOPATHIES.—It is difficult to separate the phrenopathies from the abdominal neuroses (hysteria and hypochondria.) It may be said that it is the animal nature which encroaches upon the intellectual, hence the painful struggle which Guislain designated Phrenopathies. The subject is not the master of his actions and will, and he should be isolated because of his dangerous tendencies. In fact we notice in these cases the preponderance of the animal instincts—thus there are homicidal, quarrelsome and howling insanity, etc. This seems to explain the theory of Gall upon the cerebral vibrates.

Insanity should not be confounded with aberrations or delirium due to material lesions of the brain, and which lead to paralysis after a longer or shorter period of excitement. These are generally due to physical excesses, such as the abuse of alcohol.

The physician who is consulted in these cases to locate the lesion, should distinguish these two classes of affections. Unfortunately there are no special institutions, and the maniac and delirians are placed

in the same tomb. We say tomb, for rarely they emerge alive, or else bring with them a stigma attached their persons.

The treatment of cerebral aberation should be the same as hypochondria. The bowels should be kept free by means of seidlitz salt, podophyllin, hyoscyamine, digitaline and jalapine. But above all, in this treatment the subject should have his mind diverted from its fixed ideas by corporeal exercise, as the change is forgotten through work.

Unfortunately the regime of our insane hospitals is opposed to this, and the colonial system of Gheel should be preferred.

In the Campenoise colony there is an infirmary to receive patients during an indisposition or great agitation, the patient to return to the family of adoption as soon as they become quiet.

There is only one exception, the homicidal or suicidal monomania that cannot be foretold—these maniacs being able to dissemble to attain their object—hence they should be isolated.

The abuse of alcohol is a source of mental alienation, chiefly the absinthism which is distinguished from alcoholism; the former being ecstatic, while the second is manifested by great agitation—delirium tremens. Both may be calmed by the phosphoric acid, strychnine sulphate and digitaline, if hyperemia, or cerebral softening do not exist. [One granule of each together every hour until sedation.]

ALKALOIDAL TREATMENT OF ORGANIC DISEASES.

Dosimetria has not, and should not cease to make war upon pathological anatomy as long as the practice of medicine has not entered into the avenue of the jugulation of acute diseases. However as this

does not always depend upon the physician, we shall mention the principal organic lesions, and the means of curing them.

ORGANO-PATHIC PHENOMENA OF INFLAMMATION.—As the inflammation is the source of organic lesions, this process should be studied from an anatomico-pathological standpoint; and this is what we are about to do in a few words.

Inflammation is not only a hyperemia or congestion, it is principally a neoplasia; it forms the transition between the disturbances of circulation and nutrition. We may say that hyperemia does not always exist, for tissues that are wholly unprovided with blood vessels may show phenomena of inflammation; the cornea for instance (*keratitis*) the cartilages (*chondritis*).

It is true, however, that inflammation effects (with more intensity) the tissues well provided with vessels.

Inflammation being an essential vital work, the process should be combatted by dynamic means, and the mechanical and medicinal means, such as blood-letting and compression are only secondary. We shall take each of the phenomena of inflammation separately, and try to define its mechanism so as to apply the proper treatment.

CONGESTION.—First stage. When an irritant cause acts upon the tissues—the capillaries retract—it is due to contractibility. The blood circulates with difficulty, and in a slow manner. The vessels impede the passage of globules thus causing their arrest, both in their general circulatory and their amyloid movement. Stagnation results, a venous condition takes place which is augmented by the rise in temperature, for we know that the venous blood is 1° Cent. warmer than arterial blood.

Second stage. The capillaries become paralyzed and distended, the blood no longer circulates—it oscillates. This state exists before rupture of the vessels, as in gangrene.

Third stage. The serum of the blood is exuded by expression through the pores of the vessel and carries with it a certain amount of white globules; hence the two orders of phenomena. Suppuration and hepatization. Pus is formed by a number of corpuscles evidently belonging to the blood, for they preserve all of its characteristics.

We have before expounded the theory of Conheim, and the microscopical observations of Koelliker on the subject. What is most important to ascertain is that white globules, as soon as they are out of the circulation and are diffused in the connective tissue, continue to live as isolated organisms, they proliferate, except when destroyed by toxic agents; among these we must cite phenic acid, essential oils (turpentine and chamomile) and alcohol, hence the utility of these substances in preventing suppuration.

We shall mention them again when treating of dressings.

By hepatization we understand the accumulation of white globules in the parenchymatous tissues, to the extent of rendering them impervious, as occurs for example in the inflamed pulmonary tissue. These globules or corpuscles terminate by fusion, and disappear by absorption.

Fourth stage—Degeneration. This stage is more prolonged than the others. It occurs when the globules are not dissolved, but during the local action by which the acute inflammation passes to a chronic stage, these globules proliferate. The mother cell

gives birth to a nucleus of celuli which produces abnormal tissues or degenerations.

Among these degenerations or heteromorphous, we shall mention the following:

1. Amyloid Degeneration—This is composed of round or ovoid corpuscles of various sizes disposed in concentric layers surrounding the nucleus.

In this degeneration the white globule is most conspicuous, and it is noticeable in the cacexia caused by deglobulization of the blood which follows the syphilitic, cancerous and tuberculous diathesis. This may occur in all tissues; bone, glands, nerves, ganglions, etc.

2. Colloid Degeneration—This affects especially the epithelium; being analogous to it in composition and consistency. The colloid material is deposited around the nucleus which forms a transparent or opaline zone, which is the incipient stage of the cancrioid of epithelial cancers.

3. Tuberculous Degeneration—This originates by milliary granulations; round or slightly oval, of about 3 m. in diameter, of a grayish hue, at first translucent, but soon tending to be opaque. The confirmed tuberculosis is a *corpus mortuam*, which has suffered a caseous or cretaceous transformation. When softened it gives rise to suppuration and active fever.

4. Sarcomateous Degeneration—This is due to spheroidal, oval, granulous and nucleated cells; which form a pulp which is gritty under the scalpel, intermixed with sclerotic fibres and some blood vessels.

These are the fibro-plastic tumors which not infrequently attain great size.

5. Cancerous Degeneration—It is the resume—the quintessence of all degenerations. In it we find melanic, eppithelial, colloidal, and tubercular ele-

ments; hence the great variety of the nature of the cancers which may attack all constitutions. It is the organic hydra devouring all the tissues with which it comes in contact.

From all that we have said, we draw the practical conclusion: that it is our duty to extinguish inflammation at its first appearance, if we would not have to control all of the organic disturbances which we have described. If the trouble is one of debilitation rather than one of exaggeration of vital force; an asthenia rather than a sthenia; then it is a fault not to have recourse to the excito-motors in the beginning.

In regarding these anatomo-pathological results of inflammation, such as suppuration, hepatization, and degenerations, they should be inhibited immediately by destroying the white globules or leucocytes, which tend to purulate the moment they have left their usual medium—that is to say—the circulation.

We could not make a better comparison in this case than with an overflowed stream which deposits many germs upon the soil; these are developed as soon as the water recedes and the stream re-enters its bed.

It is then the overflowing which should be prevented by reinforcing the resistance of the vessels rather than diminishing it.

Let us illustrate: Formerly (and even to-day) surgery used cataplasms, or emollients—that is by means of heat and moisture the migration of the white corpuscles was favored, so that suppuration is not arrested, and the pus becomes ill-conditioned through the ferments developed, resulting in *sania*. At the present antiseptic dressings are applied to wounds by phenique acid, turpentine or alcohol, almost avoiding suppuration and purulent absorption, hence

diminishing mortality—which proves that the art is a reality when well understood and applied.

Let us now give attention to the organic diseases:

As organic diseases are generally of long duration, the first rule is to save and increase the force of the patient; hence the great mistake in the use of debilitants under the pretext of an irritation.

For instance, phthisis in its coliquative stage, the patient is affected with a burning fever, which causes great waste. What is done? The room is poorly aired, for the windows are not opened; the nourishment is insipid, and the medicaments more so; the cough tears the chest, for the patient has no strength to expectorate. All this could have been avoided if from the beginning the patient had been submitted to an excito-motor treatment. If the arseniates had been administered and the alkaloids given with the view of controlling the acute fever—and now that he is in a state of marasmus, poisoned by the muco-purulent sputa, why not give the arseniate of caffeine to diminish waste, the arseniate of iron to reconstruct the blood, the arseniate of strychnine to give to the lung the power of eliminating the inflammatory products which obstruct them?

Why not make them breathe an atmosphere saturated with the vapors of phrenique acid, turpentine, or chlorine?

In the treatment of organic diseases, the forces of the patient should be sustained from the beginning.

Nature possesses the means to repair organic diseases which art does not; but it requires time, and this may only be gained by a natural or logical treatment.

The stethoscope, auscultation and percussion, are means of enlightenment to ascertain on which points

assistance should be given. Thus, by the ralls and bubbling new congestions are recognized—and tell us to use the counter irritants and defervescents.

“*Hæret lethalis arundo,*” as the poet said; but we can meet this by the appropriate use of digitaline, which diminishes the beats of the heart; at the same time that the arseniate of iron renders the blood more plastic, and the arseniate of strychnine, which gives more resistance to the vascular walls. It is in this way that the true physician, who is worthy of the name, disputes inch by inch the death grasp, instead of allowing the disease to progress to the profit of the autopsy.

Let us speak of those inexorable diseases where nothing is done to curtail their progress—we mean organic diseases of the heart.

The patient is panting for breath, the face already expresses the presentiment of death. Should we weaken him because the pulse is disordered? The irregularities, the cold extremities, the infiltration announce the approximate end. Why not retard it; why not administer digitaline with iron and strychnine arseniates? The narcotics in this case would only disguise the spectacle of death, instead of retarding it.

SYMPTOMOLOGY,
OR
MORBID ACCIDENTS.

We mention now the symptomology of the morbid accidents so well described by Prof. Spring. As the astronomer in the fable, after well scrutinizing the field of the pathological anatomy, he was engulfed and succumbed to a confluent variola.

Who is able to say that if he understood the importance of therapeutics, he would not have applied it to himself?

VALUE OF SYMPTOMOLOGY IN CEREBRAL LESIONS.—Among the nerve troubles announced by cerebral lesions, the professor of Liege emphasizes the following: Prosopalgia, prosopo-anæsthesia, and prosopoplegia. (Spring loved the Greek; this may be a defect, but it is the means of better memorizing). Prosopalgia consists of pains in the face. Proso-anæsthesia, enfeeblement or complete suppression of sensibility of this region. Prosopoplegia, suppression of muscular movements.

The physician may thus read upon the face the nature of the disease.

Prosopalgia depends upon intra-cranial or intra-cerebral tumors. It produces disturbance of other nerves besides those of the face, principally the fifth pair. It indicates inundation of the spinal cord, comprising the rhomboidal sinus.

There are epileptiform symptoms. What shall be done? Death is near by, and the autopsy will verify its cause.

Cerebral prosopo-anæsthesia is the result of hæmorrhagic foci, softenings or limited exudations, tubercular deposits, or other lesions destroying the intracranial, or intra-cerebral portions of the tri-gemini.

Anæsthesia is frequently unilateral. What is to be done? Logic teaches to use the nervines—phosphoric acid and strychnine sulphate—not to control the lesion, but to maintain the action of the parts of the brain yet intact.

Cerebral prosopoplegia, or paralysis of the face (unless due to a direct action upon the facial nerves as in case of rheumatism), indicates a hæmorrhage—limited softening or a tumor at the base of the brain compressing the facial nerve at the annular protuberance.

Spring says that paralysis is frequently partial, affecting the buccinators, the elevators of the nasal alli, and the superior palpebræ—leaving intact the orbicular palpebral, and the other muscles of the face which, although they may not obey the will power, continue however to contract under the stimulus of the passions.

The hearing is always disturbed in intra-cranial prosopoplegia, and the pressure extends to the common motor oculi nerve. The elevator of the superior palpebræ, the internal and rarely the external rectus are successively paralyzed if not in the beginning at least with the progress of the lesion.

These facts are very interesting from a physiological standpoint, and the aim of the treatment is only to prevent new congestions.

In the majority of cerebral organopathies there is nervous delirium, which is erroneously combatted by the narcotics, when digitaline only should be used.

VALUE OF SYMPTOMOLOGY IN THE PULMONARY LESIONS.

One of the most constant symptoms is shortness or panting for breath. It is noticed in the infiltrations, the engorgement of the chronic pulmonary phlegmasies (hepatization) in the tuberculous degeneration, the emphysema, the stenosis. These should be opposed by the strychnines. The arseniate of strychnine is the medicament which succeeds the best in these cases. The treatment should not be debilitating, as there is frequently a tendency toward anemia.

We give therefore the arseniate of iron and, conjointly, the arseniate of strychnine and digitaline, which is—according to the expression of Cullen, referring to digitalis—“the opium of the heart (*Bis repetita placent*). [One granule of each together every hour until cessation of the symptoms.]

The “bradypnee,” which is a more advanced degree of disturbed respiration, shows itself in the compression of the respiratory nerves, or the corresponding parts of the nerve centers.

There is in these cases a great acceleration of the movements of the heart which should be controlled by the means above mentioned. “Ataxapnee,” or irregularity of the respiratory rhythm, denotes a partial bronchitis, a pleuritic effusion, a pneumothorax or obstruction of a bronchial branch by tubercle—the inspiration is much longer than expiration—dependent of the mechanical obstacle, it is necessary to recur to strychnine to assist the lungs; but if the obstruction depends upon an effusion, paracentesis should be practiced. The following is a narrative borrowed from the work of Dr. Castieaux de Lille (Nord), entitled “Documents pour servir a l'etude de la method aspiratrice.”

“A young man at 18 is suddenly taken with general malaise, fever and lassitude. The cough is slight and ceases completely after a fortnight; the patient feeling well takes a walk of two hours but returns home much fatigued, with a pain in the chest under the left nipple. At the hospital he complains always of the same pain, and has every evening a slight paroxysm of fever. There is no dyspepsia, the sleep is good, the appetite normal, and the bowels regular. The respiration is so easy that the patient sits up without difficulty, and would be up continually if allowed to do so.

Percussion reveals normal resonance on the left side, and complete dullness on the right from the apex to the base of the lung.

Auscultation shows normal respiration on the left side, but a weak vesicular murmur on the right side; with some subcrepitant rales simulating attrition, chiefly on the infra scapular region.

No egophony but slight ruffled thoracic vibrations are as clear on the right as on the left, and even perhaps a little more exaggerated on the right.

This anomaly was proven to obscure the diagnosis, and by the use of Dieulefoy's aspirator, 900 grammes of fluid was obtained from the right side. Soon after the patient was discharged cured.”

This demonstrates how insidious pleurisy is in the beginning, and hence the reason for acting promptly; even before the diagnosis is clear.

The first symptoms, such as the initial chill, the acute pain, should be met by strychnine or quinine (arsenate), digitaline and cicutine. The physicians who make the most of pathological anatomy make the least of therapeutics. But it would be a great mistake to suppose that all sthenias should be op-

posed with asthenics. It is the contrary which is generally true.

In the affections of the larynx, of the trachea, and the bronchi, the respiration is sibilant, because of the diminution of calibre of the tubes, or of a mechanical obstacle—it is either a nervous state or one of exudation. In the first case we should have recourse to anti-spasmodics and to tonics: as hyoscyamine and hydroferrocyanate of quinine. This covers croupal affections in general. In the second, emetics; and in case that this is insufficient, as a last resort tracheotomy may be performed*.

We refer to what we have already said of stridulous affections.

COUGH.—Cough is of all the organopathic phenomena, that which causes the most inconvenience to the patient and embarrassment to the physician. He owes it to himself to question if the cough proceeds from the larynx, from the trachea, the bronchi, the lungs, the heart, the stomach or even more deeply yet, and also the character of lesion which it denotes.

The laryngopathic cough is hoarse, stridulent, barking. (See Laryngitis—Neuroses.) We are acquainted with the cough proper to syphilitic laryngitis. (For its treatment, see Inflammations, Diatheses.)

The dyspeptic cough is guttural. We notice it in affections of the pharynx, of the œsophagus, and of the stomach. (See the diseases of these organs.)

The pleuritic cough is dry, frequent, short. In par-rital pleurisy, the cough is excited each time that we practice percussion. (See Pleurisy.)

* Intubation is now preferred by some surgeons.—TRANS.

The cardiopathic cough is dry, without expectoration. In constriction of the mitral orifice, it is intense and frequent. (See Inflammations of the Heart.)

The pneumopathic cough exists as a sequel of compression, obstruction, atrophy, effusion, hepatization, tuberculosis, melanosis, emphysema. It is painful when there is inflammation.

It suffices that the practitioner is aware of the different varieties of cough, in order that his attention may be directed to the affection which it determines. Among the calmants of cough, from any cause, we recommend cicutine. It suffices to chew a granule and allow it to gradually dissolve in the saliva for momentary relief. This operation may be repeated three or four times during the day or night. Cicutine has no bad taste, and does not cause constriction of the throat. If we observe a slight degree of narcotism, we should suspend its administration.

We may likewise chew a granule of iodoform, being careful to close the mouth, in order that the characteristic emanations may penetrate the primaviæ.

DYSPNŒAS.—We may confound cardiopathic dyspnœa with asthma, but they may be distinguished from each other by auscultation and percussion.

There is, however, one difficulty: the auscultation practiced during the paroxysm causes the abnormal valvular bruits to disappear, which exist during the interval. However, the true practitioner is not deceived by this. The contrary happens in enlargement of the left auriculo-ventricular orifice. The dyspnœa is also one of the symptoms of aneurism of the ascending aorta, but here there are symptoms of cerebral anemia.

In these anhelations, it is necessary to administer strychnine, which should be combined with hyoscy-

mine, if there is at the same time spasm. (See Asthma.)

We proceed the same in insufficient respiration as a sequel of weakness or paralysis of the respiratory muscles. It is the case of myelopathic and cerebral dyspnœa. It is necessary then to act as in the affections of the brain and of the spinal marrow. (See these affections.)

In the "dyshemique" dyspnœa, we should act in preference upon the blood. (See Chlor-anemic Diatheses.)

PALPITATION OF THE HEART.—These palpitations are sometimes due to plethora, at others to neurotic affections, and again to organic changes. In plethoric palpitations the beats are strong; they resemble the strokes of a hammer at a distance. Phlebotomy should be followed by digitaline, [One granule every half hour until sedation.]

The organopathic palpitations are principally due to carditis, and are more frequently observed in dilatation than in hypertrophy, hence thê treatment should be constrictive. [Strychnine arseniate, 1 granule every hour until cessation of the palpitation.]

In the acrotism there is momentaneous suspension or interruption of the movements of the heart. It is principally observed in dilatation of the left ventricle. Death may occur suddenly. The face is injected and cyanotic, and the carbonic delirium terminates the scene.

Bleeding would be fatal in these cases. Arseniate of strychnine and of iron are indicated [1 granule of each every half hour during the paroxysm].

When there is effusion in the pericardium, digitaline should be used [1 granule in connection with arseniate of strychnine and arseniate of iron].

ABDOMINAL ORGANOPATHIES.—We shall touch lightly upon the organopathies of the chest and abdomen, and upon mechanical hæmatemesis. When the blood encounters a permanent obstacle to its passage through the lungs and heart as well as through the spleen and liver, it accumulates in the gastro-diploic veins, which are naturally voluminous. The hæmatemesis, as explained by the ancients, according to their humoral theory, was attributed to black bile, which sometimes depends upon an obstruction of the portal vein, and sometimes upon a contraction of the vena-cava beyond the sub-hepatic veins. Rarely hæmatemesis occurs from organic diseases of the liver, but on the contrary from those of the spleen and heart; chiefly stenosis or insufficiency of the tri-cuspid valves. The quantity of the blood may be augmented or decreased and there is profound anæmia; the treatment should be made in consonance with this latter, by the administration of iron arseniate and cicutine. [One granule of each every hour, preceded by the washing of the gastro-intestinal tract by seidlitz salt.]

The same treatment is applicable to pultaceous and cancerous hæmatemesis.

The organopathic gastrodynia is accompanied by acute pains, in the perforating ulcer and schirrous. Cicutine and quasseine should be used [1 granule every hour until sedation].

The organopathic enterodynia, such as chronic catarrh and tuberculosis, requires hyoscyamine as the sedative of the colic [one granule every half hour until sedation].

In typhlitis and perityphlitis, the pain in the right iliac fossa is at first dull, but with acute paroxysms. Later, as the serous membrane is involved by the inflammation the pain becomes acute, lancinating and

boring, increased by movement and pressure. As there is organic lesion of the cæcum, chiefly as a sequel of typhoid, sedatives should only be used—cicutine, morphine [1 granule of each every half hour until sedation]. In the stenotic colic due to intussusception we should recur before the strangulation is confirmed to oily substances and atropine [1 granule every 15 minutes, with a tablespoonful of olive oil].

When strangulation is declared laparotomy is the only means available, although this operation is rather hazardous; more so because it is generally practiced late. Enterorrhagia is observed in cancer and typhoid, for which acid drinks are recommended, and tannic acid [1 granule every half hour].

ORGANOPATHIC ICTERUS.—This depends upon organic affections of the liver. In acute atrophy from hepatitis, there is dull pains in the right hypochondria; the icterus is not so well pronounced nor the dejections so discolored; as in spasmodic or sthenotic icterus, due to spasm or obliteration of the billiary ducts, we should resort to the anti-phlogistics. In cirrhosis the icterus is incomplete, the liver is inactive, and the kidney perform its functions, hence the rapid symptoms of denutrition or marasmus, with acute fever and a rapid progress of the disease.

According to Andral, in cirrhosis the temperature rises to 104° or 106° F. (40° to 41° C.) In these cases arseniate of caffeine [1 granule every hour] is indicated.

The hepatic organopathies leave behind in the blood the elements of the bile. (See Diatheses.) It is necessary then to refresh this last by the seidlitz salt, and to administer quasseine [2 or 3 granules at mealtime].

RENAL ORGANOPATHIES.—The organic diseases of the kidneys consist in a hyperplasia of the renal cells, or in fatty granular degenerations; frequently of both united. These organs cease to perform their functions, and the result is infiltrations or anasarca, and the waste of albumen by the urine.

In acute albuminaria, the anasarca begins in the eyelids, on the face; later it extends to the ankles and the legs. In chronic albuminaria on the contrary; the anasarca of the face frequently does not exist at all. Successively appear acites, hydrothorax, œdema of the lungs, serous effusions of the brain, of the spinal marrow, as the disturbance of respiration increases. The principal point is that the insensible perspiration of the skin is arrested. At the same time there exists anæmia and hydremia. The consequence of this pathological condition, which has its source in acute albuminaria, the anti-phlogistics are indispensable. (See Nephritis.) It is necessary to hasten the administration of the blood restoratives, notably the arseniates and the chalybeates. We insist equally on a milk diet.

MEDICAL THERMOMETRY.

The observation of the temperature of the patient is just as necessary for the physician as the inspection of the manometer by the mechanic; for by these means accidents are prevented.

We permit ourself then to enter here into some details. The temperature of the body ought to be studied in the normal, the hyponormal and the hypernormal states.

1st. The Normal State.—The normal temperature— $98\frac{1}{2}^{\circ}$ F. (37° C.)—exists in many chronic diseases. We can reason *a priori* that the thermometer here will fail in its aim. We are mistaken. This negative symptom, that is to say, the absence of fever, has an actual value in determining the diagnosis, the prognosis and the treatment. We know when the affection by which the patient is overtaken offers no great danger.

2d. The Hyponormal State.—When the temperature descends lower than $98\frac{1}{2}^{\circ}$ F. (37° C.), it proves a state of great enfeeblement of the organism; abundant hæmorrhages, long privation, prolonged exposure to cold, are all capable of causing this condition. The depression of temperature constitutes also a fatal form of termination to intense fevers. At the end of one or two days we see the temperature of the body descend from 106° F. (41° C.), to 95° F. (35° C.), and even lower. Therapeutics should not then declare itself powerless; on the contrary, it should seek to re-ignite the vital flame by means of the nervines, such as phosphoric acid, strychnine sulphate and ammonium benzoate, which are above all in effect revivifiers of the blood. [One granule of each together every 15 minutes until the temperature rises.]

In the algid state, we act the same as in pernicious fevers. (See Algid Fevers.)

The organic affections of the great systems of nutrition are accompanied frequently by a lowering of the animal heat. Not only does the thermometer furnish here the precise diagnostic and prognostic elements, but also the therapeutics.

Lowering of the animal heat is frequently observed in lunatics.

3d. The Hypernormal State.—It is in the acute diseases that the thermometer becomes an indispensable auxiliary to the physician. We can say that the course of the temperature is that of the disease.

The same degree of heat does not exist in all active diseases, and it is this which distinguishes their gravity.

Generally in acute catarrhal affections the temperature rises one or two degrees above the physiological average. On the contrary, in the decided inflammatory diseases which attack the serous membranes and parynchomatous organs, the fever commences with many rigors, and soon attains 100° to 104° F. (38° to 40° C.), or more. Thus these affections present a degree of gravity, and require special attention upon the part of the practitioner, and an energetic treatment.

There exists a very important class of diseases which are distinguishable by a typical course. These are the infectious diseases—the zymotic affections. Here the thermometer renders immense service. Thanks to it! The diagnosis and prognosis becomes easy and sure.

The office of the practitioner is to moderate the too high temperature; to prevent the exaggerated combustion of the organic elements, and to render the

economy apt to renew the materials consumed by the fire of the fever.

There are certain circumstances which must not be overlooked by the thermometrist. Thus, he should consider first the individuality of the subject. It is true that in children an exaggeration of the animal heat has the same signification as in the adult. Nevertheless, children present a higher temperature in the same affections; the more as the fever with them develops more rapidly. We see this especially in the ephemeral fevers, which are not always without danger. Pending convalescence, even, the animal heat of children remains frequently febrile. In this connection, old people present totally opposed phenomena. Here we need not fear so much the exaggeration of temperature as its diminution. With infants, convulsions, excitation, fever; with old persons, vital depression. Guard against the consideration of the lowering of the animal heat as an unimportant symptom in individuals of advanced age. You may expect a fatal issue when the temperature descends in the old patient to 97° or 95° F. (36° or 35° C.) Anticipate as much as possible the collapse, and do not wait to act until the organism has lost its force and remains insensible to the more heroic remedies.

It should not be forgotten that diurnal variations of the animal heat are present in normal conditions. These variations are maintained during sickness; they are, however, more pronounced. It is not rare to find a difference of half a degree between the morning and the evening temperature. We cannot draw, therefore, a too favorable conclusion if we find the temperature of the morning is lower than that of the evening of the previous day. It is true that in cer-

tain diseases and under the influence of causes more or less known, the reverse is the case. The temperature of the morning is higher than that of the evening; but this is not the rule, and in general, the oscillations of the morbid temperature are coincident with the diurnal oscillations of the disease. To resume: The clinical thermometry of the present day has acquired a practical utility fully as great as auscultation and percussion, and permits us to make the following conclusions:

1. The conservation of the normal temperature of the body $98\frac{1}{2}^{\circ}$ F. (37° C.), in a disease, renders generally a prognosis of little gravity.

2. The augmentation of the normal temperature of the body is proof of the intensity and nature of the fever. If it is rapid in the open acute affections, it rarely goes above 104° F. (40° C.), which seems to be about its height. In the malignant affections the elevation is less rapid, less decided, but it goes beyond 104° or 106° F. (40° or 41° C.), and sometimes 108° F. (43° C.) A temperature higher than this would be incompatible with life; the blood would be coagulated in the blood vessels.

3. Lowering of the animal heat indicates an exhaustion slow or rapid of the organism, governed by the slowness or the rapidity with which the lowering takes place.

4. In thermometric observations in the interest of the individual, the diurnal, pathological and normal oscillations must be made.

"The thermometer is an admirable thing in studying disease," writes Dr. Liegard, of Caen. "More I walk in this road and more my conviction is confirmed; each day adds to the sum of my observations. I gave attention to-day to a little child of three years, which

presented to me—to me who has published a book on cerebral meningitis—all the symptoms of that redoubtable disease at its commencement: intense fever, great heat of the head, red and pale alternately, subsultus tendium, delirium, screaming, agitation especially at night. It appeared to me meanwhile that it had redoubled; a general disease rather than a local inflammation. But with this there is no suspicion of the extent of the evil. I make the application of the thermometer; it mounts and is arrested at 105° F. (40.5° C.). No more of doubt, I tranquillize the frightened mother, and I give two days together 30 centigrammes (18 grains) of sulphate of quinine. The night and the first day of the administration of the remedy the heat is calmed; the following day the pulse has lost much of its frequency, and the thermometer marks only 104° F. (40° C.) This is an excessive temperature, and we continue during one or two days the precious antiperiodic. Without the thermometer, or if I had not used it, the poor little one would have been in great danger of a renewal of the paroxysm.”

How often does it not happen that we meet with a masked fever and, failing to take the diagnosis, we lose our patient by not giving immediately the febrifuge.

We have said in the commencement of our Manual, of the epidemic of pernicious fever which prevailed in 1826, in Holland, and which extended itself into Belgium: the cold stage was very short and the thermometer mounted rapidly to 104° to 106° F. (40° to 41° C.), to fall again about the end of the paroxysm, below the physiological standard; here was the danger, because the economy could not resist these quick changes of temperature; therefore, if we did not give the sulphate of quinine, the patient succumbed.

In Asiatic cholera the same oscillations are observed; but here the algid period is longer, and may be a cause of death by the more rapid lowering of the animal heat—asphyxiated as it were by the cold; but in the period of reaction the danger is not the less great, since the thermometer marks 104° to 106° F. (40° to 41° C.), but it only maintains this for a relatively short time, and then descends below the normal stage— 93° to 95° F. (34° to 35° C.)—and even lower to a point which to the touch is like the body of a batrachian.

We seek to warm the patient by artificial heat; but this cannot be done upon a surface which does not receive radiance from within. We have seen the heating bottles scald without being sensible to the patient. We give the diffusible stimulants, but not unfrequently they augment gastro-intestinal irritation and provoke a typhoid state. When the reaction occurs it must be maintained by the excito-motors, like the arseniate or hydroferrocyanate of quinine, adding to it according to circumstances when there is pain or spasm: cicutine, morphine, hyoscyamine and digitaline to re-establish the urinary secretions and prevent uremic poisoning. (See Diatheses.)

When the reaction in pyrexias is insufficient, two types are produced. The type remittent and the type intermittent. In the first there is an oscillation between the circulation and calorification, dependent upon variation of the states of cold, heat and sweat.

But these variations establish themselves in a manner more or less regular. We have an example in typhoid fever. Therefore, in a thermometric point of view, the fever is divided into three states. In the first—which lasts from three to five days—the temperature increases each day progressively. Each night

the heat augments upon that of the previous night from $\frac{1}{2}^{\circ}$ to 1° ; that of the morning not subsiding to the maximum of the remission by $\frac{1}{2}^{\circ}$. The temperature is elevated to 103° F. (39.5° C.), in slight cases; to 105° or 106° F. (40 or 41° C.), and even more, in grave cases, the fourth or fifth day from its commencement. During these the temperature oscillates between 103° F. (39.5° C.) and 105° F. (40.5° C.), according to the gravity of the case. It therefore drags itself along for one, two and three weeks of ascending and descending oscillations. The third stage in grave cases is separated from the second by an intermediate state, to which Wunderlich has given the name "amphibious period." This phase has always a serious significance. It is marked in a startling manner upon the remaining graphic symptoms by its irregularity; notably, the sudden elevations occurring at intervals at night. On this account Wunderlich formulated the following laws:

(a) A pyrexia which, on the second day, presents in the adult a temperature bordering on 104° F. (40° C.) is not typhoid fever.

(b) A pyrexia which after the evening of the fourth day does not present a temperature superior to $102\frac{1}{2}^{\circ}$ F. (39° C.) is not typhoid fever.

(c) A pyrexia which in the second part of the first week presents a temperature always below 103° F. (39.5° C.) is not a typhoid fever.

We make the remark here that that which constitutes typhoid fever is not so much the thermal state as the cause which produces it. But it is true that the more the poison attacks the vitality, that is to say paralyzes the ganglionic nervous system, the higher the temperature tends to mount. Our physiological experience teaches that of the vaso-motor nerves

some are constrictors, others dilators; the first frigerific, because they drive the blood with more rapidity in traversing the circulatory torrent, consequently the blood is fresh—by the action of the lungs. The second, dilators or calorificators, because they allow stagnation of the blood in the organs and thus permit it to become heated.

We therefore say: A pyrexia whose temperature rises progressively, in spite of morning remissions, to the maximum of $\frac{1}{2}^{\circ}$, in this manner attaining on the fourth or fifth day an elevation of 103° to 104° F. (39.5° to 40° C.), and which maintains itself during the latter part of the week as high as 103° F. (39.5° C.), is probably a typhoid fever.

Relative to the prognosis: Therefore, when we have said: the indications furnished by thermometry are extremely important, thus: the elevation of the animal heat perhaps mortal at 109° F. (43° C.); would be in a manner absolute at 111° F. (45° C.), because of the coagulation of the blood. With a 106° F. (41° C.), the case is very grave; with 104° F. (40° C.), it is less grave; with 103° F. (39.5° C.), it is relatively favorable.

The prognosis will be much more favorable if the morning remission is well marked. The lowering of the temperature is a good sign, but this should not be rapid; it should go slowly to normal. During the hot stage, a rapid fall from 105° F. (41° C.) to 96° F. (36° C.), or lower, is a mortal sign. This lowering announces a hæmorrhage, a collapse of the heart. A rapid elevation of temperature—very considerable—is ordinarily the commencement of dissolution. It is always an unpleasant sign when the exacerbation commences after midday and does not terminate until after midnight.

In this intermediate type of the fever the three stages of cold, heat and sweat are separated by an interval of repose of the pyrexia. The return to a state of health apparently complete, if it were not for certain signs of paleness, of abatement, in which the physician recognizes a return of the paroxysm. It is this which we name *l'œil du medecin: oculus medici*.

The stage of cold having been accomplished the temperature rises rapidly, according to the intensity of the fever, to 104° or 105° F. (39.5° or 40° C.); the heat is burning, the pulse is accelerated (110, 120); the eyes have an unusual brightness, the mouth is dry, the thirst urgent, the urine scant and high colored. After this stage comes the sweat. The skin becomes moist, the pulse soft, the mouth humid, the whole body is covered with an abundant perspiration and the patient quickly falls asleep.

We again refer to thermometry. The duration of the cold is subject to variation. It may depend either upon exterior or interior circumstances. Thus when the patient is exposed to cold, damp air outside, it is evident that reaction will not take place. This is the danger to which armies are exposed in a campaign, or the want of proper camp equipage, which causes so many disasters. In regard to the internal circumstances, there is a spasm which prevents reaction; the peripheral vessels are shriveled up, the blood is retained in the interior and thus produces the mortal accidents—coma, apoplexies. It is in these conditions that masked fevers are produced which may assume many diverse forms. They indicate always a severe illness, and a very intense intoxication.

We say now, with Prof. Spring (*accidents morbides*): When the particular form, the intensity and the duration of the fever are determined on the one hand by

the proximate or efficient cause (which is frequently a parasite, accomplishing his life upon the patient's organism) on the other, by the quantity of material capable of serving as aliment to the morbid process. Consequently, the necessity for the morning washing of the intestines by the seidlitz salt. In this regard the physician is frequently like the prætor—*De minimis non curat Prætor*—and he is wrong. Our predecessors thoroughly believed in the great importance which we attach to this part of the treatment. They satisfied themselves if these matters were laudable or not. We think it best to eliminate the morbid matter as soon as possible, because in these fevers the dejections are heated. The alimentation being suspended, they are composed simply of the products of abnormal secretion, which it is dangerous to allow to remain in the body. Thus the fecine is a true poison, or auctothone, the most dangerous. It is because of this that we see grave fevers developed in armies on the march. In the African campaigns, Gen. Bugeaad, whose solicitude for his troops gave him the name of *le pere Bugeaud*, had the habit of making every morning a tour of the encampments in order to assure himself by the dejections, of the health of his soldiers; and when the health officers came in their order they were often astonished at his hygeino-pathological remarks. We think that the use of seidlitz salt by armies would simplify the medical service after the adage of Ovid:

“Principis obsta, sero medicina paratur
Cum mala per longas involuere moras.”

Upon examining carefully the character of fever, we notice equally with the vital reaction, the element spasm, the element pain, agitation; the element congestion, inflammation. The first—or the spasm—presents itself especially at the commencement; it is this which

induces the chill. The whole fibrillary system is in motion and shriveled. This motion, well marked upon the skin, makes itself equally felt in the interior of the body. *On a froid dans le dos.* Its intensity depends upon the intensity, or of the prolongation of the action of the morbid cause; of the susceptibility of the individual, the losses to which the economy has been subjected, to the privations and the moral impressions. We understand that in similar conditions all these which enfeeble the organism must be fatal.

The child therefore demands the anti-spasmodics. We recommend a few drops of laudanum in an ethereal mixture. Tincture of aconite may be given in the same manner. During the peripheral spasm the blood is driven back upon the interior, and the vessels of the heart are distended and paralyzed. It is as in the experiments of M. Cl. Bernard, when we cut the great sympathetic. The result of these experiments with those of Brown-Sequard is, that the augmentation of the heat is due to the dilation of the blood vessels.

Another physiologist, Prof. Traube, is parti to the hypothesis of a regulating or moderating nervous apparatus. It acts in the same manner as all obstructing apparatus; that is to say, it would act with regard to the organic renovation or nutrition, as the pneumogastric nerve, especially the left, acts with regard to the heart. It would be a check to the hæmostatic combustion, in the sense that without it the oxydation of the blood would become excessively rapid, and the body would be burned. We love to recall these anatomo-physiological theories, for they enter into the great law of vitality, a law that the father of medicine perfectly recognized in the absence of all technical knowledge. Thus in fever there was not only chem-

ico-physical phenomena, but especially vital phenomena which subordinate themselves to the first—hence the medicine must be dynamic or vital. In acute pyrexias the alkaloids are always indicated. Quinine acts, not in the intervals of the paroxysms as we might suppose, but against the subsequent access, moderating the reaction and facilitating the functions of secretion and excretion by assisting the elimination of the products of combustion, in the same manner as digitaline acts upon urea.

Veratrine has a special action upon the skin; aconitine upon the gastric mucous membrane, and colchicine upon the kidneys. These afford a prolific source of experimentation.

Andral has sought to determine the variations of the temperature of the body by those of its solids in the urine, fibrine, albumin, globules, urea, etc., and he has arrived at this conclusion: that when the blood contains more than $\frac{1}{10000}$ of fibrine the temperature is elevated, and that the elevation is proportional with the plastic elements. This conclusion is in harmony with that of the same physician upon inflammations and pyrexias; equally in harmony, not with the red but with the white globules. He gives a table of 20 chlorotic, in which, although the red globules were notably diminished, the temperature was over $98\frac{1}{2}^{\circ}$ F. (37° C.) This explains why fevers are so easily produced in the chlor-anemic, because the animal heat rises with the exhaustion of the blood; in the same way as prolonged starvation heats the body. Hence we should not push dieting so far as to cause this phenomena, which the patient could not resist.

Large depletions of blood, when misapplied tend rather to increase than to diminish fever. We say expressly when misapplied, for when indicated, that

is, when there is a veritable plethora, as in parynchomatous phlegmasias, notably pneumonia, they free the circulation, elevate the pulse, favor evaporation and consequently cool the body. But this last result would be better obtained by the use of a saline.

The diminution of the albumin of the blood is not in immediate harmony with the fall of the animal heat; it is only after a time more or less long, as we observe in albuminuria, and upon animals which succumb to inanition, when the albuminous materials are insufficient the temperature falls in a manner scarcely noticeable. The treatment should be as we have already indicated in albuminuria—by the seidlitz salt, albumin and the arseniate of strychnine. (See Albuminuria.)

There exists, on the contrary, a direct relation between the temperature of the body and the quantity of urea eliminated by the kidneys. In thirty-two analyses of urine from different patients whose temperature was normal, Andral found only eight times more than twelve grammes of urea.

In the pyrexias, he had constantly with a greater elevation of temperature a greater quantity of urea. Thus upon twenty-five analyses of urine of patients with intermittent fever, he found eleven times, twenty and thirty-two grammes of urea; nine times, between sixteen and twenty; twice, only thirteen and fourteen grammes.

The same harmony exists in pneumonia, pleurisy, acute articular rheumatism, eruptive fevers and typhoid fever. In regard to the latter, if a few authors have admitted a diminution of the urea, Andral made the observation that the diet to which the patients are subjected acts upon the urea inversely to the fever. He was able to show in a prolonged

pyrexia, where the urea, without ceasing to be eliminated in considerable quantity, was diminished, the temperature being maintained at the same degree.

There exists a disease which constitutes an exception to this rule, that is cirrhosis of the liver. In the urinalysis, Andral had a constant augmentation of urea. This disease, although apyretic, comports itself in the same manner as the pyrexias. Andral asked himself if we can suppose in this case, that the azotic materials of the bile, which not being able again to get out of the blood by the altered liver, finds a supplementary way of elimination by the kidneys; and he disposes of the question in the affirmative, based upon the physiological experiments which demonstrate a joint similarity between the eliminating functions. We might cite here the example of the ovipara where the liver is relatively but little developed—some lacking a gall bladder—the kidneys are provided with a double venous system—the renal veins proper, which correspond to the arteries—and a renal portal vein which goes to empty itself in the hepatic portal vein. (*System veineux de Jacobson.*) We know the enormous quantity of urea and of the urates furnished by birds, and we should not doubt but that this is a means of refreshment with these animals where the whole body is but an apparatus of combustion.

The researches of the *Hematologie Francais* throws much light upon the pyrexias and inflammations. They show that the animal heat is proportional to the quantity of urea in the blood, the alkaloids by their power of augmenting the renal and cutaneous secretions, thereby favoring the eliminations of nitrogenous principles diminish the heat and the frequency of the pulse, consequently decrease the fever and the inflam-

mation. The greater part of the phlegmasias, even traumatic, are localized fevers under the influence of an occasional cause. Therefore, when pleurisy, or pneumonia, breaks out spontaneously, it is that there is a predisposition, because the occasional cause is frequently too feeble. It is the drop of water which causes the glass to overflow. It is the same in articular rheumatism, and in phlegmasia in general, where the alkaloids act wonderfully.

When there is some plethora, preliminary bleeding favors the action of the medicaments. Far from degrading this therapeutic resource, it is wrong to apply it indiscriminately. Innovation is not reaction. It is this which the narrow-minded do not understand.

But if the bleeding is necessary when there is plethora or a superabundance of blood, it is not the same in leucocythemia, where the inflammations are more to be feared because they are produced, not by the red corpuscles but by the white. If, in consequence of the degeneration of our population the necessity for general blood-letting is less great than heretofore, it would not be right to establish a system of exclusion for this therapeutic means. We bleed to release the circulation, without reference to the cause which produced the embarrassment. Pneumonia at its commencement, with great oppression, necessitates the opening of the vein. The emeto-cathartics in this case are not always expedient; and it would be here a danger to trust to them exclusively. It is the same with acute disease of the heart, where Hufeland reproaches his contemporaries for not bleeding.

We do not except certain adynamic states which are equally calmed by sanguine depletions: not as *subtractives* but *derivatives*, with the view of preventing hypostasis in the great organs.

Therefore the phenomena, cerebral, pneumonic, and abdominal, will be more surely combatted after bleeding by the dynamic calmants. For example, morphine is more efficacious after bleeding than before. It is the same with stimulants and antiperiodics. The true practitioner is never exclusive.

Concerning the alkaloids, when and how should they be administered? Here the doubt presents itself. Should they be given in the pyretic state, or ought we to wait for the apyrexia? We think that this depends upon circumstances. Thus when the danger is imminent, and when a loss of time would be mortal, we should give the defervescents, "*meme au fort de la fevre.*" And when we should have no fear of augmenting thus the reaction, since the alkaloids act by lowering the pulse and the temperature. The danger comes from the excess of heat, and it should be guarded against immediately.

UROLOGY.

In order to study the urine in disease, it is necessary to understand it in its normal or natural state, and in its abnormal or pathologic state.

The color of normal urine is a yellow more or less mixed with red. This tint is due to a coloring matter proper, and indicates health; that is to say, when all the acts of vegetation are naturally performed.

This coloration may be wanting, as in the pale color of chlor-anemia. It is an indication which goes to support all the others, and for which we give strychnine arseniate, and iron arseniate. Dark urine, high in color, indicates a state of over-excitement which demands the employment of a saline and of digitaline.

If by means of test paper, we find constantly a very marked acid reaction, we give benzoic acid and sodium benzoate.

If on the contrary it is alkaline—that is to say containing a considerable quantity of carbonate of ammonia—we give phosphoric acid, with acid drinks and vegetables. If there exists a typhoid state, we give strychnine arseniate.

The abnormal colorations of urine (green, blue, violet) indicate an ammoniacal state. They are due to the decompositions which have occurred in the bladder (uroglaucline, urrhodine). They must be treated the same as the high colored urine—by saline and by the vegetable acids. The urine may be colored red by the blood (hematuria). In this case we must give the mineral acids, neutral perchloric to be preferred. The urine may show a deposit like coffee grounds. This indicates the decomposition of the red globules beyond the spleen—that is to say in the renal parenchyma. If the deposit is very abundant, to the

point of producing impoverishment of the blood, we must give arseniate of iron and arseniate of strychnine. (See Diatheses.)

The lactescent or chylous urine (see Diatheses) requires the bitter tonics, such as quassaine.

ALBUMINOUS URINE.—1. When we find any albumin by treatment of the specimen with nitric acid: If the quantity be very considerable, it forms an abundant white precipitate. If the quantity is small we heat it in a test tube filled two-thirds full of the urine, and we pour down the side of the glass a little acid. By this means the acid gathers at the bottom. If there be any albumin it produces upon the acid a turbid layer, clearly marked upon both faces.

2. We boil the urine contained in the test tube over a spirit lamp, until it coagulates. But this proceeding may give place to errors. Thus, the urine may become cloudy from the ebullition as much as from the albumen contained in it. In the greater number of cases it is earthy phosphates (as in osteomalacia). This we determine by pouring a few drops of acid upon the deposit. We give then the hypophosphite and phosphate of lime.

The cloudiness may equally depend upon mucous. The coagulum in this case disappearing upon the addition of acetic or hydrochloric acid.

If the urine is alkaline, it will not be clouded upon boiling; consequently we should always, before proceeding to boil the liquid ascertain its reaction. If it turns red paper blue, we must add a few drops of acetic acid.

Sometimes—but rarely—boiling does not precipitate the albumin in the urine; as when it contains a certain amount of free hydrochloric acid. We must then neutralize this by means of potassium carbonate.

The presence of albumin in the urine is a symptom of all organic diseases—of the kidneys, of the liver—indicating an impoverishment of the blood, principally of its saline and hematic elements. We must therefore supply these by a saline diet and the reconstituents—arseniate of strychnine and arseniate of iron.

FIBRIN IN THE URINE.—This produces itself by exudation. The fibrin of the blood is converted into a jelly by means of ammonium carbonate. The little clots may become the basis of calculi. We must in this case give the vegetable acids and hypophosphite of strychnine. The presence of fibrin in the urine frequently indicates an organic disease of the kidneys.

FAT IN THE URINE.—The urine sometimes presents to the eye fat resembling that upon bouillon. This is in effect the fat which has not been consumed in the economy passed into the urine. This is observed equally in the treatment by cod liver oil. In these cases we must give tonic nervines, such as the arseniate of strychnine.

This may equally depend upon a fatty degeneration of the kidneys. We must always insist upon the tonics.

SUGAR IN THE URINE.—To discover sugar in the urine we may boil it in a silver spoon until of a syrupy consistence; or by polarization.

We must equally weigh the urine to ascertain its density.

As the process is long and difficult, the practitioner, to whom it suffices to know approximately how much sugar is contained in diabetic urine, may satisfy himself by the following proceeding, based upon this fact: that urine containing sugar boiled with caustic potassa has a yellowish-brown color; and by the intensity of the color, and with the aid of a scale of

colors, we can judge of the quantity of sugar. To establish this scale we dissolve in forty or fifty cubic centimeters of water a weighed quantity (about two grammes) of grape sugar well dried; we add nearly a double volume of a concentrated potassa lye, and boil it for ten or fifteen minutes. After cooling we add to the dark brown liquid sufficient water to make each cubic centimeter of the mixture contain ten millegrammes of sugar. With this liquid we form a color scale (a scale with a small number of degrees is sufficient). We supply ourselves with ordinary test tubes; as much as possible of the same diameter in their whole length. We fill the first of these tubes with a mixture formed of one part of the sugar liquid and nine parts of water; containing consequently four milligrammes of sugar in each ten cubic centimeters. We fill the second tube with the same mixture, and we add an equal volume of water. We obtain thus a degree of the scale containing five millegrammes of sugar in ten cubic centimeters. In the third tube, afterwards in the fourth and fifth, we pour the liquids which represent in ten cubic centimeters three, two, and one millegrammes of sugar, etc. We prepare thus a scale composed of ten or twelve degrees. By choosing large tubes of glass as near alike as possible we obtain thereby results very exact. We now boil a measured quantity (about five cubic centimeters of the urine which is supposed to be rich in sugar, and ten cubic centimeters of that which we know to contain only a small quantity) of the urine to be assayed, with double its volume of potash lye. After cooling we pour the liquid in a glass tube the same as those of the scale, and we add water enough to make the color compare with one of the degrees of the scale. Since we know the amount of sugar of the degree of

the scale, we can calculate easily that of the urine. This method requires but a few minutes. The scale will not keep for a long time, but the liquid may be preserved in a cool, dark place, and we can renew the scale as required.

We have said that the sugar in the urine, or in the tissues (diabetic or non-diabetic sugar), indicates a default of combustion which requires the nervines—phosphoric acid, arseniate of strychnine and a saline diet.

DEPOSITS IN THE URINE.—*Crystalline Sediments.*—1. *Uric Acid and Urates.*—Uric acid is a normal element of the urine, but it is only soluble when not in excess.

Uric acid is found as a sediment when the urine is strongly acid, and nearly always co-existent with the urates. As a sediment it is never without color, but pale yellow, usually dark, orange red or brown, depending upon the degree of acidity. We can recognize its crystalline state (rhomboidal prisms) with the naked eye.

The urate sediments are very variable in color—grayish-white, white, rose-red, red-brown, or reddish-purple. They are soluble in hot water. It is easy to separate them from the uric acid by heating the urine and filtering it.

The urate sediments indicate a febrile state, and demands a cooling treatment—seidlitz salt and the alkaloids, aconitine and veratrine. [One granule of each every half hour until the sediment disappears.]

The excess of uric acid is a symptom of gouty or rheumatic diatheses. (See those Diatheses.)

2. *Oxalic Acids and Oxalates.*—Oxalic acid is only met with in the urine as oxalate of lime. This may give rise to the mulberry calculus, as we have before stated. (See these Diatheses.) The crystals have

the form of a letter envelope, and might be confounded with sea salt; but the solubility of this last is such that it is not met with in a crystalline state in the urine.

The crystals of oxalate of lime are soluble, in a rather large proportion, in the acid phosphate of sodium. We can profit by this circumstance by the employment of phosphoric acid in oxaluria. We prescribe therefore a lemonade composed of one part of phosphoric acid and four parts of syrup of raspberry. We have said that oxaluria frequently proceeds from a diet containing too much sugar. (See Diatheses.)

3. *Earthy Phosphates*.—These sediments are composed of phosphate of lime and ammonio-magnesian phosphate. Very rarely we meet with them alone—more frequently united. Because of their solubility in acids, even weak acids, we only find them in alkaline urine which has undergone fermentation in the bladder, in the ureters or the calices, where they sometimes form branching calculi.

The ammonio-magnesian crystals appear in alkaline urine under the same form as the oxalate of lime, but they are distinguished by their easy solubility in a solution of acetic acid, which has little or no effect upon oxalate of lime. The ammonio-magnesian urines require the employment of food and drinks acidulated with vinegar, which is suitable for this class of calculi. The phosphate of lime presents itself under the form of an amorphous powder. It is insoluble in water, soluble in the acids, even acetic acid, it is precipitated in an amorphous state from these solutions, by the alkalies. It is only met with in feebly acid, neutral or alkaline urine.

The presence of earthy sediments in the urine always indicates a state of super-alkalinity, which

must be corrected by the gaseous acidulated mineral waters—Selzer, Carlsbad or Vals—but above all, a refreshing regime.

4. *Chlorides*—*Chloride of sodium or sea salt in the urine*.—The quantity of sodium chloride eliminated by the urine varies in different persons and different hours of the day. Nigra made observations upon eight individuals. The quantity of chloride eliminated in twenty-four hours approximated 10.46 grammes, which corresponds to 17.5 grammes of sodium chloride. It is in the afternoon that the elimination of the chlorides is the most considerable, but it diminishes notably at night, and increases in the morning. Active exercise augments it; a slight disorder of the health diminishes it. The proportion of chlorides augments upon drinking large quantities of water, but diminishes with even more rapidity. In many diseases the quantity of sodium chloride contained in the urine is considerably diminished; notably those where abundant exudations are formed at the expense of the blood. In pneumonia it descends to a minimum. When the urine is deprived of sodium chloride it ferments, and the paracitic productions are formed in it.

After all this, we can well understand that the sodium chloridé is necessary to the economy, not only for progressive, but especially for retrogressive nutrition, since it protects the body against fermentation.

SYNOPTICAL TABLES.

SPERMATIC INCONTINENCE (SPERMATORRHEA).

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 23 years. VICIOUS habit. Involuntary emissions at night. A B N O R M A L sensibility of the vertebral column, especially in the nape of the neck and lumbar region. E R R O T I C fancies, sudden awakenings, skin hot, pulse small and accelerated. Emaciation. Weakness of the intellectual faculties. General prostration.	Cicutine, phosphoric acid and sulphate of strychnine, four granules of each together, daily. At night on going to bed, a granule of atropine. Tonic regime, cold lotions in the morning, seidlitz salt.	This treatment continued during fifteen days, brought about on the sixth day a notable diminution of the symptoms. The patient has been sent to the country in order to be entirely restored.

NOTE.—In ancient times the priests, in order to observe continence took each evening a certain dose of hemlock, because that plant diminished the excitation of the spinal cord and the sexual organs.

In our day, *agnus castus* is extolled. We cannot affirm how far this plant is efficacious in its aim.

IMPOTENCY.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 48 years. TINGLING in lower extremities. Sensation of heat in the back. V E N E R E A L desire. Erections non-persistent. S C R O T U M flabby. Melancholy—ideas of suicide.	Acid phosphoric and arseniate of strychnine, two granules of each at night. Cold lotions in the morning, seidlitz salt, saline regime.	This treatment has been continued during two months. At the end of this time the sexual organs had recovered their turgescence.

NOTE.—The sea salt or sodium chloride has been considered at all times as a proliferator. We can read on this subject the *Symposiaque* of Plutarch, where he discusses the question: "Why is it prohibited to the Egyptian priests to take salt with their food?" In the works of Bernard de Palissy, we find an analogous dissertation: "How is it that the female mice, in ships loaded with salt, become pregnant without the intervention of the males?" Common salt has the effect of favoring the elaboration of albuminous matter, and consequently of the sperm. Woman, equally, is not apt to conceive unless her secretions present a certain degree of alkalinity. This caused Montaigne to say: "*La beaute de la femme ne doit etre ni fade, ni mome, mais assaisonnee de grace decevante.*"

HÆMOPTYSIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 24 years. Oppression, jerking cough, spitting of blood in great quantity. Skin dry, cheeks red, face turgid. Pulse hard (125), sensation of bubbling in the chest.	Aconitine, digitaline, ergotin, of each one granule, together every half hour. Application of ice to the chest. Seidlitz salt. Acidulated drinks. Hydroferrocyanate of quinine.	This treatment was continued during twenty-four hours. The pulse softened and fell to ninety-five. The cough was calmed and the sanguine expulsion ceased. In order to prevent a return of the hæmoptysis.

NOTE.—We know that the quinine has an excito-motor action very marked upon the capillaries, and arrests the sanguineous transudation. But it acts principally as a febrifuge or decongestant. The hæmorrhages non-traumatic are, in general, periodic, as the menstrual. It is because the blood is called in larger quantities upon a point that it is arrested and transudes through the walls of the vessels, without the necessity for ulceration or rent. When the hæmorrhage is suppletory, it is simply necessary to moderate it if it is too profuse. The aconitine is above all useful in this case. Bleeding would be indicated if the pulse remains hard, and the oppression increases.

ACUTE ARTICULAR RHEUMATISM.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 36 years. Fever and articular pain persistent.	Aconitine } Veratrine }	This treatment was continued during
Violent pains in the right sterno-clavicular articulation.	Digitaline } Strychnine arsen. }	thirty-three hours.
Oppression.	Alternately. A granule of each every half hour.	The symptoms then improved, and profuse diuresis declaring itself.
Pulse hard (120). Temperature, 105 deg F. (40½ deg. C.)	At night two granules morphine muriate and a dose of chloral.	Against insomnia.
	Quinine hydroferrocyanate.	To prevent return of paroxysm.

NOTE.—We have extolled, not without reason, the efficacy of veratrine in the acute articular affections; conjointly with aconitine, we calm for a time the nervous erethism and the vascular orgasm. Rarely are we obliged to push the dose beyond ten or twelve granules in twelve hours. The sternal articular pains are due to oppression, because of the vicinity of the heart and lungs. It was therefore necessary to add to the veratrine and aconitine, the digitaline and strychnine (arsenate).

The acute articular rheumatism, as is said by Hufeland, is an antagonistic irritation, provoked by the suppression of the cutaneous perspiration; consequently it has two characters. The one dynamic (irritation, destruction of the equilibrium of the forces); the other material (material of the retained perspiration). (See Gouty Diathesis, Rheumatism.) The hydroferrocyanate of quinine is always necessary in these cases, in order to prevent the paroxysms.

TRAUMATIC CYSTITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 29 years. Violent contusion of the hypogastrium. Pale, cold general, hypogastrium tense and dull. Urine mixed with blood.	Hydroferrocyanate of quinine [two granules every half hour] at night; strychnine arseniate [one granule].	Against the nervous prostration and as an anti-hæmorrhagic. This treatment was continued during one day.
Reaction. Pulse, 110. Temperature, 104 deg. F. (40 deg. C.) Hypogastrium painful.	Veratrine, aconitine, digitaline- [each one granule every hour].	Against the reaction [of supervening the following day.
Urine ammoniacal.	Arseniate of quinine [two granules every hour].	Against a return of the paroxysm.

NOTE.—The arseniate of quinine is a sedative of the great sympathetic. We know that the irritation of the urinary passages determines a paroxysmal fever frequently mortal. In these cases we find the ganglions of the nervous plexes hyperæmic and softened. It is therefore important to prevent these paroxysms. In the traumatic affections of the urinary organs, we can therefore never dispense with the administration of quinine in the form of sulphate, hydroferrocyanate or arseniate.

PUERPERAL PERITONITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 22 years. Third day after accouchement. Malais general. Irregular chills. Pulse small at 100. Slight meteorism of the belly. Breasts flabby. Prostration.	Hydroferrocyanate of quinine [one granule every half hour]. Refrigerating drinks. Batting bandage.	Against the chills.
Reaction. Temperature 104 deg. F. (40 deg. C.) Pulse 120.	Aconitine, veratrine [one granule of each together, every half hour].	Against the acute fever.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Vomiting greenish material.	Intestinal washing with seidlitz salt.	
Heat of skin less pungent. Pulse 117.	Continued aconitine and veratrine.	
The hiccough has disappeared. Urine scanty and ammoniacal.	Emmolient clysters. Digitaline. Hydroferrocyanate of quinine.	Against the paroxysms.

NOTE.—The puerperal peritonitis being a prostrating or siderative affection, it is necessary at its commencement to administer quinine hydroferrocyanate; then the reaction being conquered by the defervescent alkaloids—aconitine, veratrine, digitaline—we return again to the quinine. The washing of the intestinal tract is necessary because of the greenish matter which being retained would soon ferment.

COXALGIC FEVER.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 16 years. Violent pain in the left hip. Fever, pulse 120. Temperature 103 deg. F. ($39\frac{2}{3}$ deg. C.) Thigh emaciated and lengthened.	Digitaline, strychnine sulphate [of each one granule every hour].	To prevent effusion into the articulation, and elongation of the limb.
Persistence of fever. Temperature 104 deg. F. (40 deg. C.)	Aconitine, veratrine [one granule of each every half hour].	Applied a caustic of Vienna paste to each side of the trochanter.*
Cessation of the fever.	Quinine hydroferrocyanate.	

NOTE.—The elongation of the member in coxalgia is not always a sign of anthracose, but rather of paralysis, Strychnine then must be administered, for the twitching of the muscles and nerves augments the fever.

* The application of the Vienna paste has the effect of preventing spontaneous luxation.

PLEURISY.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
<p>Age 23 years. Pleuritic point on the left side at the height of the fifth intercostal space. Cough jerky, dry, Pulse quick, hard, 120. Temperature 106 deg. F. (41 deg. C.)</p>	<p>Cicutine, veratrine, [of each one granule every half hour]. Cut cups, immobilization of the thorax. Seidlitz salt.</p>	<p>This treatment was continued during two days.</p>
<p>Dyspnœa, dullness.</p>	<p>Arseniate of strychnine, digitaline, sodium arseniate, seidlitz salt.</p>	<p>Third day. Against effusion, during the third day.</p>
<p>Pulse small, irregular. Oscillations of temperature, morning 102 deg. F. (39 deg. C.), and evening 106 deg. F. (41 deg. C.)</p>	<p>Hydroferrocyanate of quinine [a granule every half hour].</p>	<p>Ninth day. Against the paroxysm, during two days.</p>
<p>Resolution complete.</p>	<p>Quassinine [four granules a day].</p>	<p>Twelfth day. In order to render the digestive forces active.</p>

NOTE.—In pleurisy, the treatment cannot be too active, because of the rapid course of the disease. The excessive bleeding and counter-stimulants often increase the general debility and precipitate effusion, because of the chlor-anemia.

CAPILLARY BRONCHITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
<p>Age 18 years. Cough dry, retro-sternal pain, difficult inspiration, fever; pulse 96. Temperature 101$\frac{3}{4}$ deg. F. (38$\frac{3}{4}$ deg. C.)</p>	<p>Bleeding, emollients, Aconitine, hyoscyamine, strychnine [a granule of each every half hour].</p>	<p>Against pulmonary engorgement.</p>
<p>Respiration sibilant, dry rals. Urine scanty.</p>	<p>Seidlitz salt, strychnine arseniate, sodium arseniate, hyoscyamine, digitaline [a granule of each together, every hour].</p>	

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Febrile paroxysm in the evening.	Quinine hydroferrocyanate [twelve granules].*	During the day.
Resolution on the tenth day.	Codeine [three granules].	During the night.

NOTE.—In capillary bronchitis, there is at the same time spasm of the bronchi and pulmonary obstruction. It is necessary, therefore, to employ for a time hyoscyamine and strychnine to the end that the bronchitis may not become suffocation.

PNEUMONIA.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age, 36 years. Great oppression. Coughing, painful, dull pain in the middle part of the thorax. Expectoration rusty. Fever, pulse hard, 96. Face injected, headache. Temperature, 106 deg. F., (40 deg. C.).	General blood letting. Veratrine, strychnine arseniate (of each a granule every half hour). Seidlitz salt.	Against pulmonary obstruction.
Pulmonary engorgement, subcrepitant rales, engorgement of the liver, congestion of the kidneys, albuminuria.	Sodium arseniate, Digitaline, Quasseine (of each 3 granules—per day). Seidlitz salt.	6th day — Against hepaticization.

NOTE.—Strychnine, at the beginning of pneumonia, is so much the more necessary when the lungs are obstructed very rapidly. The anatomico-pathological lesions, which upon account of the disease are due to the sanguine stasis and to transudations. We know now that these exudates become organized: the plasma contains a crowd of white globules or leucocytes, susceptible of undergoing a histological transformation. The pulmonary tissue takes thus a density incompatible with its functions, which demands permeability. This is why, in the second period of pneumonia, the necessity for giving sodium arseniate.

* The acute bronchitis, in its second period, proceeds by paroxysms. If we do not give quinine hydroferrocyanate, there is no doubt that the disease will be terminated by acute oedema of the lungs and death.

CEREBRAL MENINGITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age, 8 years. Prodromes: Malaise. Derangement of the gastric organs. Bilious state. Constipation, pains in the limbs and joints.	Seidlitz salts. Veratrine, aconitine: (a granule of each every 15 minutes.)	In order to cool the body. In order to reduce the fever.
Period of invasion. Violent cephalalgia, insomnia, dreams, skin burning (104 deg. —106 deg. F., (40 deg. —41 c.). Face pale, pulse quick and hard (120).	Strychnine sulphate, caffeine arseniate; (a granule of each every 15 minutes.)	Against cerebral paralysis.
Spasms. Tonic convulsions (<i>trismus</i> , <i>oposthotonos</i>).	Strychnine, Hyoscyamine, Sodium arseniate (a granule of each every 30 minutes until resolution).	

NOTE.—The cerebral paralysis precedes the general paralysis, it is therefore the first which it is necessary to prevent by the strychnine. The cerebral pains being of a neuralgic nature the strychnine must be associated with caffeine.

TUBERCULOUS MENINGITIS.

<i>Subject—Symptoms</i>	<i>Treatment.</i>	<i>Observations</i>
Age 10 years. Invasion, sharp pains at the nape of the neck. Strabismus. Pupils contracted. Unilateral convulsions. Insomnia. Dreams. Piercing cries. Temperature 104 deg. F. (40 deg. C.) Pulse small, accelerated. Irregular chills. Vomiting,	Quinine hydroferrocyanate, phosphoric acid, strychnine sulphate [a granule of each every half hour]. Seidlitz salt.	Against cerebral spasm and the nervous paroxysms.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Slackening of the pulse, lowering of temperature, stools and urine involuntary. Cerebral depression. Death.	Strychnine arseniate [one granule every half hour].	Against cerebral paralysis.

NOTE.—Tuberculous meningitis is generally mortal; or if we succeed in moderating it, it terminates by hydrocephalus, idiocy or epileptiform convulsions. Nevertheless, the physician is obliged to employ all the means which science places at his disposal.

MYELITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 36 years. Tactile sensibility exaggerated, especially in the inferior extremities. Painful shocks radiating along the spinal nerves. Tingling.	Sodium arseniate, cicutine [a granule of each four times a day].	In order to modify the sensibility and a nutrition of the spinal cord.
Erotic sensations. (This period may be prolonged during a considerable time.)	Camphor monobromated [one granule a morning and evening].	Against genetic excitation.
Impairment of movement. Nervous insufficiency. Dyspnoea, dysphagia, dysuria, etc.	Strychnine arseniate [three granules per day].	In order to awaken the innervation.

NOTE.—Sclerosis being the consequence of myelitis, we understand that the vital or dynamic incitants are powerless in this last period of the disease. Nevertheless, as all the segment of the cord may not be involved, the treatment by the arseniates may still be continued. It is our duty in this case, to recur to the external excitants—moxa, ironing. However, we must be very prudent, because of the congestions which may declare themselves in the already hyperæmic cord.

NEURALGIAS.

<i>Periods—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
1st Period. Tensive or lancinating pains along the nerve attacked. Pulse stronger on the suffering side. Neuralgic fever precedes the paroxysms.	Sodium arseniate, quinine arseniate, aconitine [one granule of each four times a day].	In order to modify the nutrition and sensibility of the nerve.
2d Period. Gradual enfeeblement of the part affected. Locomotor ataxia.	Strychnine arseniate, iron arseniate, antimony arseniate [three or four granules per day].	Against anemia. Against rheumatic diathesis.

NOTE.—It is this diathesis which produces, more often the neuritis, or neuralgias. Likewise it is necessary before all, to try to modify the nutrition of the diseased nerve. Antimony arseniate should therefore be given the preference in these cases. It has particularly the effect of forwarding interstitial absorption, and of thus preventing sclerosis or hypertrophy of the intercellular substances, with atrophy of the normal histological elements.

OPHTHALMIAS.

<i>Species.</i>	<i>Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Conjunctivitis.	Lacrymation, heavy pain, paroxysmal fever.	Quinine hydroferrocyanate Emollients. Afterwards astringents—zinc tannin.	Against the paroxysmal fever. Against relaxation of tissues.
Sclerotitis.	Sharp, shooting pains. Photophobia.	Sodium arseniate, veratrine, aconitine [one granule of each every hour].	In order to modify the nutrition and the sensibility.
Iritis.	Supra orbital pains, deformation of the pupil. Vomiting.	Atropine, veratrine. Mercury proto-iodide.	Against spasm and congestion. Against syphilis.

<i>Species.</i>	<i>Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Choroditis.	Distortion of images. Amblyopia.	Sodium arseniate, seidlitz salt.	Against the hæmorrhoidal state.
Retinitis.	Sparks, scintillations, black spots, amaurosis.	Phosphoric acid, strychnine sulphate gradually increased to twenty granules per day.	Diffusible excitants—ammonia.

NOTE.—The anatomical localization of the tissues is here very important, in order to determine the treatment.

LARYNGITIS.

<i>Species.</i>	<i>Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Simple.	Pain in the larynx on pressure. Hoarse, cough dry, spasmodic. Febrile paroxysm at night.	Aconitine, quinine, hydroferrocyanate [one granule of each every half hour].	In order to prevent exudations.
Croupous.	Malais, anxiety, respiration whistling, metallic cough. Paleness of the face when free from the paroxysms. Pulse small. Dyspnœa	Strychnine arseniate quin-arseniate [one granule of each every half hour]. Sulphide of calcium.	Against asphyxiating paroxysms. Against diphtheria.

NOTE.—Croupous laryngitis appears to be due to micro-organisms of the genus *oidiums*. It is the same in whooping-cough, which is a laryngitis of paroxysms, and which subsides under the influence of aconitine and quinine hydroferrocyanate, and which calcium sulphide modifies advantageously, in a manner which renders the attacks less fatiguing.

HEPATITIS.

<i>Subject—Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Age 46 years. Sharp pain, augmented by superficial contact, radiating towards the right shoulder and right groin. Deep, profound pains. Icteric tint. Vomiting, constipation. Stools clayey. Paroxysmal fever.	Emollient baths, cupping, bleeding, Veratrine [one granule every half hour]. Seidlitz salt. Podophyllin [one or two granules per day]. Quasseine, hyoscyamine [of each one granule at meal-time]. Arseniate of quinine.	Against itching of the skin. As a refrigerant. Against the icterus and constipation Against periodicity

NOTE.—Hepatitis has the effect of causing torpidity of the liver, and consequently chloræmia. This is characterized by a depression of the pulse and of the temperature, and often is the cause of very rebellious paroxysmal fevers. In marshy countries hepatitis is very frequently the result of the palludal diathesis. Quasseine, quinine arseniate against the diathesis, and hyoscyamine against the icteric spasm, are the means indicated in this species.

NEPHRITIS.

<i>Species</i>	<i>Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Interstitial.	Renal pains. Urine scanty and dark. Fever intense 106 deg. F. (41 deg. C.) Vomiting, retraction of the testicle.	Sodium arseniate, cicutine, atropine [a granule of each every hour].	Against the pain and spasm.
Albuminuric.	Fever, eclamptiform convulsions. Urine albuminous. Tendency toward dropsy.	Veratrine, arseniate of iron [a granule of each every hour].	Against the anemic fever.

<i>Species.</i>	<i>Symptoms.</i>	<i>Treatment.</i>	<i>Observations.</i>
Glycosuric.	Slight pains in the kidneys and along the vertebral column. Urine copious (with or without sugar). Thirst intense. Skin hot and dry. Marasmus, consumption.	Saline regime Arseniate of iron, digitaline. Arseniate of antimony.	Against the paroxysms. Against the muscular pains.

NOTE.—The doses which we indicate in these tables—as of the rest in the course of the manual—are not absolute. It is for the physician to judge as to how far he may go. In the acute diseases it is necessary to act blow upon blow. In the chronic diseases it is necessary to proceed gradually; allowing the eliminative absorption time for action. We say eliminative, because the morbid products, in order to be eliminated, should first enter into the circulation. We except catalyses and those chemical decompositions which occur directly in the blood, and to which the secretory organs act as still worms—as the kidneys, for example. But whatever the nature of these chemical operations, the intervention of the vitality is always necessary. Stahl was correct when in order to explain the iatro-chemistry of his time, he invoked the vital spirits. This was the opinion of all the great physicians of antiquity including Galen, in spite of his humoralism. Everywhere, therefore, the vital incitants are necessary. Given a colitis or intestinal obstruction, which may go on to *miserere*—to employ physical agents such as quicksilver and the oils—without recurring at the same time to the dynamic agents; such as strychnine, and hyoscyamine would be to give a pitiful proof of his medical science; or rather, it would be to accomplish the work of a drainer.

TREATMENT OF THE WOUNDED.

To-day, every physician is a surgeon. Without applying himself to those great operations which are the province of the specialists, he should be able to give his attention in ordinary cases, and to conduct them in a manner to prevent complications.

For it is not so much the accident which is the cause of death as an unintelligent or mercenary treatment.

Every day we see individuals overtaken by grave injury, others having submitted to terrible operations, and who meanwhile escape death by the methodic dressing and a medication vital or dynamic. (For in surgery, as in medicine, nothing is left to hazzard; it is not that some surgeons are lucky, and others unlucky; as in war, the victory belongs to those which have knowledge to provide everything. The art of healing is a continual battle against disease).

We should therefore consider in the treatment of the wounded, the external means or the dressings, and the internal means or the diet and medicaments.

EXTERNAL MEANS.—DRESSINGS.

We know the device of Ambroise Pare: "Je les pançai et Dieu les guerit."

The fact is that if the great surgeon had not given so much care to his wounded, very few would have recovered. Called to the siege of Metz, his presence was a veritable moral re-victualling: the troops regained courage, and the siege was raised by the assailants.

Admirable result of science! For it was not a question solely of moral influence; the soldier knew when

wounded, he would find help, and that the treatment would not be worse than the wound itself.

Before Ambroise Pare—in effect—the injured by fire arms or arquebus—as we name them—were treated with boiling oil and tow tampons.

The dressing of the wounded ought to consist, before all, in preventing putrid infection; the most simple injuries fester when they are not well cared for.

Animals cure themselves of their injuries by licking them; the saliva, which is a slightly alkaline liquid, prevents the wound from drying, and becoming inflamed. It is not then so much the air which irritates the wound, as its drying action.

The phthisical when we compel them to respire warm and moist air, suffer less. They are sensible of relief when with this air we mix balsamic vapors.

Every recent wound should then be treated with tepid water; but by reason of the evaporation, cold is caught, and thus becomes likewise a cause of irritation, which produces itself under the form of fever and nervous accidents (*tetanus*).

It is better therefore to confine the wound in a vaporous and emollient medium. This may be obtained by re-covering it with gummed tafeta, and with a thick bed of wadding.

When the wound is contused, it must be dressed with phenated linseed oil, in the proportion of two per cent. (of the acid. Trans.). We thus prevent putrefaction, and we diminish the suppuration. It is certain that the wounds dressed after the method of Lister proceed rapidly in *cicatrizacion*.*

*The microscope gives us the reason. When we observe by a strong lens, a recent wound, there is seen to appear a crowd of corpuscles. If we place one of these little bodies under the object glass we perceive that they are living bodies, that is to say animated with proper or amyboid movements. By mixing a

The dressing of Lister consists: 1st of carefully washing the wound with carbolized water, in a manner to express all the blood and exudates which is possible to give place to putrifaction; 2nd, in approximating, as much as possible, the edges and the covering with a gummed tafeta or *protective*; covered with several layers of swan-skin or lint, soaked in carbolized oil; 3rd, in enveloping in a waxed cloth so as to prevent evaporation, and a thick bed of wadding prepared with salicylic acid; and finally a bandage moderately tight. This dressing should remain in place one or two days. If the wound is deep (a stump after amputation, for example), before reuniting the edges with metallic sutures, we place to the bottom a rubber drainage tube, in order thus to obtain reunion of the edges by first intention and by second intention of the bottom. This drain must be maintained so long as the wound suppurates, and is utilized by passing each day deterrent injections and carbolized water.

The principle which prevails to-day is therefore that of occlusion. Formerly, we packed wounds with charpie and we thus provoked the accidents of pyemia, such as osteo-myelitis, angeitis, neuritis and myasitis.

In the fractures complicated by open wounds the same principle of occlusion ought to be applied. To this end, after reduction, we treat the wound as before described, that is to say we press out any exudations and wash it, using carbolic water and a sponge, microscopic quantity of the phenated oil with aqueous medium in which the corpuscle moves, we see it soon cease its movements and die. It is the same experience that we have with the *acarus scabiei*, by treating them with oil of turpentine. All of the strongly odoriferous substances, like the essential oils, kill parasites. It is probable that it is by anæsthesia. The suppuration would therefore be due to the white corpuscles coming to the surface of the wound.

and it reunites by first intention. If the fragments are too pointed, we resect them, and if they tend to protrude, we fix them with ivory points after the manner of carpenters, that is to say that after having bored some holes by means of a drill, we then drive two or three pegs, which we cut off close to the bone, and we reunite the wound by numerous points of metallic sutures. It is very important that occlusion should be perfect, in order to prevent the air from penetrating to the fracture and thus corrupting the pus. If we have to do with very sensitive subjects we must first anæsthetize them by means of the bichloride of methylene, because it is useless to make the wounded suffer when we can avoid it without danger. The wound is then covered with protective and a pad of lint or cotton wadding soaked in carbolized oil. This done, we envelope the whole member in a thick layer of wadding. We apply pasteboard splints, which we fix in place with a roller bandage, covering the surface with starch paste. When this is dry we make a fenestra opposite the wound in order that it may be dressed daily.

We should say a word about those ameliorating means which have taken from surgery pain and fear:

1st. Anæsthesia. We know how many phases this method has passed. First ether, then chloroform, then injections of chloral, and finally the bichloride of methylene, which may be considered as definitive, since with it the patient is in no danger. The bichloride of methylene does not show its action upon the heart as does chloroform; the patient's sleep being the same as the natural sleep; the countenance remaining rosy and bright. It would appear that the circulation is facilitated. There is no intermediate period of agitation or intoxication as we have with

chloroform. The surgeon has, therefore, but to occupy himself with his patient—*perinde ac cadaver*.

2d. *Prevention of Hæmorrhage.* That which formerly troubled the surgeon, that which obliged him to terminate the operation before he had given all the necessary attention, was hæmorrhage. Thanks to the bandage of Esmarch, he can now operate as in the dissecting room; likewise the operation is not so hurried—it is done with calm and reflection. We can make retouches, the same as the tailor trims his cloth.

Before the application of the Esmarch bandage, there are certain precautions to be taken. Thus, as we force the blood from below upwards, we should assure ourselves that there is no danger of internal congestion. If the patient is plethoric, it would be well to allow a certain portion of blood to escape. This is so far true that recently an accoucheur availed himself of the use of the Esmarch bandage with lying-in women after great loss of blood. He applied the elastic band to each inferior member, in this manner narrowing the circulation by a good third.

When we operate upon suppurating limbs the band must be applied at first from above downwards, for the purpose of expressing all the vitiated blood. Afterwards, above this another bandage, in order to prevent the afflux of new blood. This precaution is always necessary in order to prevent putrid infection.

3d. *Carbolized Spray.* Pending the whole duration of the operation we should project upon the raw surface a spray of water impregnated with carbolic acid. These sprays are in order to kill the micro-organisms, so that they shall not be transformed later into purulent or other corpuscles. When we make an ablation of a cancer, we take great care that none of the diseased tissue remains in the wound: but that which we

cannot prevent is the infiltration of the micro-organisms. Now it is probably this which causes the recurrence of the cancer.

4th. Animal Ligatures. The operation terminated, we proceed to ligate the vessels. Formerly we contented ourselves by tying the principal arteries, and we allowed the oozing to arrest itself by coagulation. But it is the coagulated blood remaining in the wound which gives rise to putrescence in the stump. We understand, therefore, that it is important that no particle of extravasated blood rests in the wound. It is for this that all the vessels must be tied *without distinction*. We seize those that are gaping and after having isolated them, we tie them with catgut soaked in carbolized oil. These ligatures have the advantage that they may remain in the wound; therefore we may cut them off short. Those vessels which cannot be seen, or rather which are suspected because of their oozing, are seized with the artery forceps, and we include them in a ligature *en masse*. There should be no fear of including nerve filaments. These follow, in general, the principal arteries.

Thus then, we tie all vessels which ooze—arteries and veins. When all the ligatures are in place we loosen the tourniquet until the wound ceases to bleed.

We then cleanse with fine sponges soaked in carbolized water, which we change each time that it is used, in order to prevent the transportation of micro-organisms.

If the wound presents pale points, we touch them with a solution of chloride of zinc. This precaution is above all necessary in case of cancer or ulceration of a malignant nature.

We dress afterwards as we have stated above.

INTERNAL MEANS.

1st. Regime. The diet of the wounded should be analeptic; that is to say, calculated to refresh the blood. Bouillons, animal jellies and milk food should form the base. Successively we allow the solid aliments, also wine and beer. Formerly we kept the wounded very weak, and we nourished thus the fever; at the same time we augmented the danger of morbid absorption. It is necessary to consult before all, the digestive power of the patient; to keep the tongue clean by means of seidlitz salt. We can then nourish the wounded as before. We consider this point as extremely important. A wound is not a disease, but it is necessary to prevent it becoming such. In few cases—but rarely—we give cinchona in decoction. We have remarked that this medicine, when it is not well borne, gives rise to diarrhœa; and this prevents the giving of food. The mucillaginous bitters, such as colombo are preferable; but we substitute with advantage quassine [three or four granules a day].

Sleep at night must be solicited by the regularity of the functions. We abstain thus, as much as possible, from narcotics. Nevertheless we can in need give three or four granules of narceine, which has not the inconvenience of morphine regarding constipation.

2d. Antifebrile Treatment. It is necessary to prevent the tendency to fever, by the alkaloids. A distinguished surgeon, Chassaingnac, was in the habit of administering during a few days before every grave operation, the tincture of aconite in a potion, in the proportion of two or three grammes per day. It is this which he called *surgical training*, as the horses which we train for the course.

The practice was judicious, since aconite moderates the fever. It is in the same order of ideas which we

give aconitine. However, we make here a remark relative to traumatic fever. This fever ought not to be considered as an extra-physiological reaction, any more than the fever which precedes digestion in delicate persons. It is, on the contrary, a preparation for the work of reparation; therefore it is not followed by that profound depression which causes a paroxysm of pathologic fever; it is dispelled ordinarily by a good moisture of the skin, etc., etc., and calm sleep. It is not, then, that fever which it is necessary to prevent. It is even necessary in some cases, and it is by this title which the ancients have been able to raise altars to the goddess, Fever. *Febris diva*. Now, aconitine, far from preventing this fever, favors it; makes it to evolve with more calmness and regularity; removes all mental agitation—things so necessary with the wounded in order to recover from their moral shock. But that which it is necessary to prevent is the inflammatory fever, commencing with violent chill, dry pungent heat, nervous prostration and disturbance of all the functions of nutrition, principally of digestion. Every elevation of temperature above $102\frac{1}{4}^{\circ}$ F. (39° C.), every acceleration of the pulse beyond 90 or 100 should be checked energetically; not by the debilitants, but on the contrary by the excito-motors—that is to say, the defervescent alkaloids. In this case we give aconitine and veratrine [a granule of each together, until sedation].

If the urine is scanty and turbid—like muddy water after a great flood—we give digitaline [a granule every hour until diuresis].

If the patient is in a great nervous weakness, somnolent, we administer arseniate of caffeine [two granules every half hour until complete awakening].

We may remark that continuous somnolence in the wounded indicates a commencing congestion of the

brain. Sleep, in order to be physiological, that is to say reparatory, ought to have periodicity. It is even best to keep the patient awake by amusing him; it is also necessary to allow him to sleep when he is fatigued. In order to obtain this functional equilibrium, a good alimentation generally suffices. The Salernian proverb: *Somnum post prandium nocuum*, is only true when one delivers himself to the excess of the table. Again it is necessary to sleep off his wine.

With the wounded patient, that which is the more urgent, is the reparation of the blood. It is necessary then to nourish as much as possible, by exciting generally the digestive forces by quassine, and by keeping up the regularity of the bowels by seidlitz salt.

An alimentation sufficiently saline is necessary to the wounded, in order to restore to the blood and humors the sodium chloride, by reason of the losses which they have suffered.

We have said previously that the sodium chloride disappears from the urine in the majority of severe inflammations. It is the same after great fatigue, and after abundant losses. We have recounted in our little pamphlet: *La longevité humaine ou l'art de prolonger la vie*, the following anecdote, which indicates great good sense among the people, despite the prejudices met with.

THE INTELLIGENT DROVER.

“Salt restores from fatigue.” Here is a fact which we have picked up on the road one day when we encountered an individual traveling the same route with us. This was a person of boorish appearance, but with an intelligent air. As we journeyed he informed me that he was by occupation a drover, and that he drove cattle destined to the shambles. At the commencement of his driving his beasts lagged on the

route from fatigue, "but now," said he, "they do not do so, because I have found the remedy."

"And what is this remedy?"

"It is this: On departing I provide myself with coarse salt, and when halting at evening my animals refuse to drink, I force a handful in his throat. Almost immediately after the animal drinks and eats. The next day it is rested and able to resume the journey."

The simple good sense had therefore taught this boorish man that which science has made known later. That is to say, that salt serves in the reconstruction of the blood and the tissues. A Belgian chemist, M. Berge, has studied the action of the sodium chloride upon the living organism, and he has proved that without salt in the plasma of the blood, the fibrin, the albumen, the musculin, the ostein—that is to say, all the protein products which enter into nutrition, become solidified, and that the red globules of the blood are dissolved. These globules are decomposed in a solution of pure albumen, whereas, with an albuminous water (as the serum of the blood) containing only a hundredth part of common salt, preserves perfectly these globules without their being altered. Individuals in whom the saline elements are deficient in the blood are pale, chlorotic, œdematous, albuminuric; their appetite disappears, the secretion of the saliva and gastric juice is diminished. Now, this is the case with the wounded and those who have been operated upon when they have a too insipid diet. It is pleasing, when our good sisters in distributing nourishment to our patients, to see them take a full hand from the salt box.

Without returning to what we have said upon the action of common salt, or sodium chloride upon the

blood, we may recall that the blood absorbs oxygen in direct ratio to the sodium chloride which it contains. That it stimulates in the same proportion the chemico-physical act of nutrition, and provokes the expulsion by the kidneys, the lungs and the skin, the azotic principles of the regressive nutrition of the tissues.

The hygiene of the wounded thus understood, surgery, far from being prejudicial to them, allows them, on the contrary *de faire peau neuve*, or a new chance for life. Each moment we receive into our service at the hospital for textural wounds, lymphatic infants, debilitated by work beyond their strength; some of them suffering from pulmonary tuberculosis, and who, thanks to a reparative regime, recover the health of their age, but, alas! they return to those pandemoniums which are named manufactories, and which constitute necessary accompaniments to civilization—for it is necessary to live after all.

We cannot complete this chapter relative to the treatment of the wounded, without a word upon purulent infection or septicæmia. All that has been advanced upon this subject ought to be considered as simple imagination—the more often as thoughts of those not clear-sighted—because these vibrations, these bacteria are innocent of all the evil with which we reproach them.* They are less the cause than the effect, and could respond as the lamb of the fable:

Comment l'aurai-je fait se je n'etais pas ne?

* Our author is decided in his views upon bacteria, but not more so than some other eminent writers. Our note, however, is to record a theory which we have heard advanced, and which deserves to be remembered and studied, to wit: that putrid infection is not due primarily to bacteria, but to the results of their decomposition and consequent formation of cadaveric alkaloids or ptomaines—TRANS.

We cannot, however, deny their existence. Dr. Beale proved upon animals attacked with the *peste bovine* (cattle plague), that animalculæ endowed with a proper vital activity, fixed themselves upon the mucous membranes and multiplied, penetrating into the blood and producing nervous disorders which characterize that fever, decomposing the red globules causing the white globules to burst, and determining thus a derangement or obstruction of the circulation (emboli).

This is the case in septicæmia, or we see appearing in the wounds these inferior organisms, which are attracted as flies upon a decomposing body. Where do these organisms come from? Are they spontaneously developed? We cannot admit that they are. The germs are found in the air. That is why this cannot be sufficiently pure. At the end of the war of 1870 we visited the ambulances at the frontier, and the spectacle which we had under our eyes has been far from edifying. It was war in all its horror—putrefaction not of the dead but of the living! The wounded were covered with flies to the point that no longer presented a human appearance, and their escaping breath a pestilential air. They were thus devoured at once internally and externally. They should have given them antiseptics, but the arseniates were in default in their pharmacies. Having always with me a pocket pharmacy, I was able to distribute some tubes of arseniate of quinine which rendered, I have recently heard, great service.

Septicæmic fever should, therefore, be treated as a miasmatic fever. Consequently, by arseniate of quinine. Then, when we are successful in breaking up the paroxysm, aconitine and veratrine in order to regulate the temperature and pulse. At the same time we cool the blood by the seidlitz salt.

If new wars should break out

* * * *Di, tale omen avertant!*

it would then amply supply the ambulance with alkaloidal medicaments.*

We come to pronounce a word for alkaloidal therapy: Well, we have nothing to retract. Why should not physicians rally to a method which is at once sure, expeditious and agreeable, and which does not alter the principles of Hippocrates? Which permits, on the contrary, the direction of the vital movements with as much precision as the horseman his steed?

We do not complain. Our little brood before the public during ten years (1883) with each day made enormous progress, as is attested by numerous letters registered in the *Repertoire*, to serve one day as a history of this great reform in therapeutics.

Even recently, we received from a popular practitioner, a letter from which we extract the following passage: "I cannot prevent myself admiring you in the generous and intelligent efforts which you do not cease to make with an ardor wholly juvenile, in order to place therapeutics upon a solid and rational base. When we bring to the success of an idea, excellent in itself, an activity and a conviction as powerful as those which animate you, that idea ought to succeed despite all the obstacles which it meets in its passage. It is the future which is reserved for the cause which you defend."

We have replied to this friendly *confrere*, that the task had been rendered easy by the support which, for the most part, physicians had willingly given us. Moreover, this cause does not depend upon us, but the entire medical profession, each knowing that it is

* The French Government has recently ordered the army and navy to be supplied with the alkaloidal granules.—TRANS.

his duty to defend the heritage which our common father bequeathed us, as it was by him received from his predecessors. The *repertoire de therapeutique* is the same as the votive tables in the temple of Cos: each thinks it his duty to inscribe his observations.

We have not made—as Hippocrates in his time—that the register. Therefore, this Manual is but a feeble resume of a doctrine which, from the first day that it appeared, has been welcomed by general sympathy.

It is founded in truth, and the truth is always sure to triumph.

RESUME.

A book, however short it may be, requires to be summarized. The author ought to economize the time of his readers, by giving them in as few words as possible, that which he has to say.

To teach them, would here be a displaced pretention. We are addressing our equals—to practitioners as ourself.

It is precisely for this that we have rendered our work as short as possible.

It was not necessary to describe the diseases—for all physicians know them—but we have set forth their nature from a vitalistic point of view.

Measure the vital forces, manage them as a prudent general manages his troops in a hostile country, this should evidently be the tactics of the physician.

Therefore, it is the dynamic character of diseases which we must have principally in view.

The whole of therapeutics can contain itself in these three indications: Sustain the forces, combat the fever, modify the nutrition. And in the three kinds of agents which correspond to them: the alkaloids, the metals, and the metaloids.

In medicine there are no specifics—but only vital modifiers.

Nature has not provided for that which we name *beautiful cases*; that is to say, the horrors of pathological anatomy. It sufficed her to create the means of preventing them, and to give us the intelligence necessary in order to use them. And here we repeat again with our confrere Amedee Latour, at the risk of appearing tiresome: "Real medicine has deviated from its natural course. It has lost sight of its noble

aim, that of healing and relieving. It has rejected therapeutics. Without therapeutics, however, the physician is only an inutile naturalist, passing his life in discovering, classifying and naming the diseases of man. It is therapeutics which elevates and ennobles our art. By it alone has it an aim; and I may add, that by it alone can this art become a science."

We understand it. An inutile naturalist! We say a sad naturalist, because he has before his eyes the spectacle of his own powerlessness.

While natural history reveals to us the sentiment of life, anatomo-pathology places before us the spectacle of death in all its hideousness—that is to say, the autopsy.

The principle of the jugulation of diseases in its commencement, this it is which attracts to the physician the confidence of the patients, since knowing what may come, they claim the succor of the art in time.

The physician will thus be the counselor of the family, which guards itself against change—as their lawyer when he protects them by wise counsel against the expense and ennui of lawsuits.

It will result in the rapport of confraternity and professional dignity between physicians. They will avoid the caprice and dishonesty of their clients—for a patient who changes his physician frequently is more often a bad debtor.

Medicine is a religion which has for its article of faith, *vitalism*. And without this last there is no salvation—that is to say no healing possible.

Organicism is materialism hopeless and despondent—it is powerless against death.

Nature has distributed the principle of life everywhere. She has given to animals blind instinct, and

to man conscious intelligence. Why estimate ourselves below the brutes?

It is true that we have our excesses against us, our thirst for pleasure always unsatiated. This is why those animals (we mean those which live in a savage state) do not require medicine. They live according to the laws of nature. But since civilization is a danger, we protect ourselves by our intelligence.

Epidemics are due to the infinitely small organisms. We do not treat these last as of the infinitely great, or assign to them the part of fatalism. This part would be too fair.

Let us know to draw from therapeutics everything which it permits. We have in quinine the anti-miasmatic agent *par excellence*. We are not restricted to that; we should know to profit by other alkaloids, in as much as they are *vital* agents; and the metals and metaloids in as much as they are *physical* agents. Above all we understand that we are not all material. "Dust, we all return to dust;" but before that, we have a role to execute, a moral duty to perform. Our body is but our material envelope—our rags, as has said a great thinker—but under this beggar's dress, there is the life which animates—it is from this point of view that all men are equal. Laces or rags, what does it matter?

Medicine is therefore a science eminently philosophical. To be only materialistic would be not to understand our place; it would be supporting Moliere, who clothed the physicians of his time with the robe of Sganarelle. We have always regretted that this great genius had not a clearer conception of the importance of medicine. Or possibly he viewed it from a philosophical standpoint which attacked those mummeries which physicians (so-called) had prac-

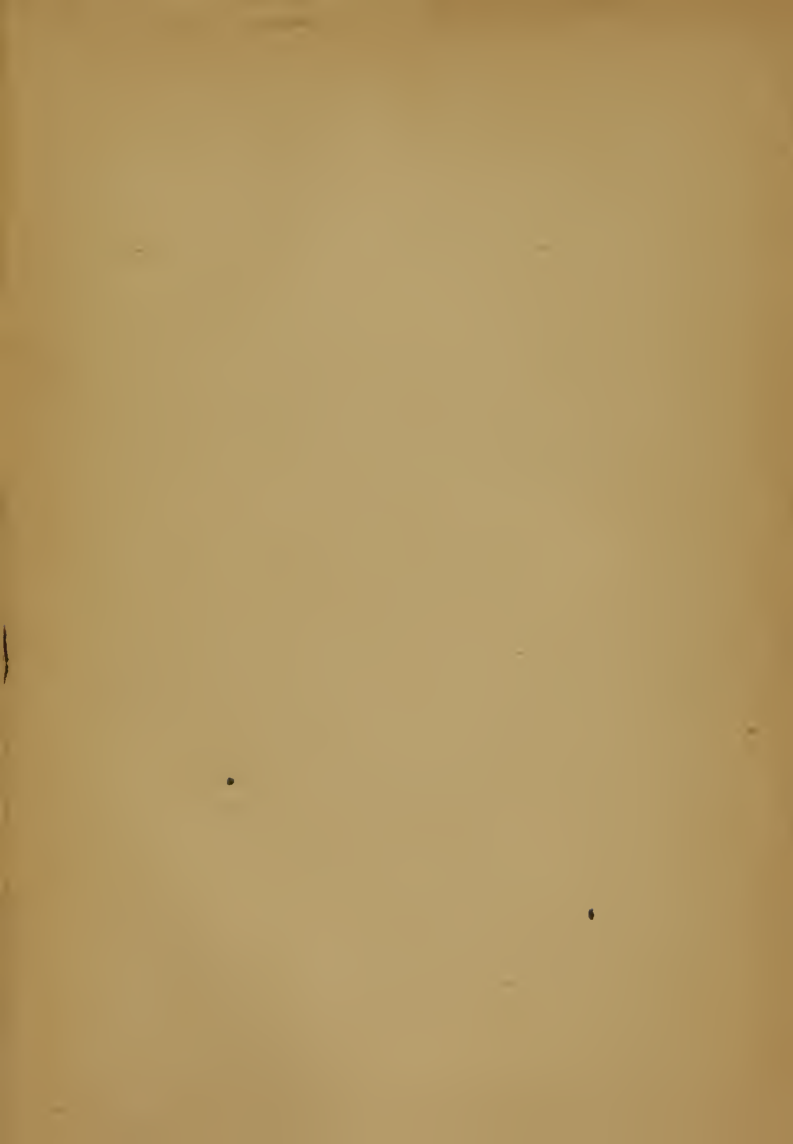
ticed, and which no one could encounter without laughing. Therefore, nothing is more dismally ludicrous than his *Desponandies* and his *Tomes*. If we would not pass as the flatterers of death, let us be ministers of life; and, to this end let us know all the means which nature has given to us with so much prodigality. Let us know to reason, but let us know to act. To reason is synonymous with unreason when we step aside from the limits of the humble understanding.

Beaumarchais was right when he said that that which distinguishes us from *other beasts*, is not that we drink when we are not thirsty and make love in all seasons, but that we are ready to debate upon all things.

De omni re scibili et de quibusdam aliis, said Pic de la Mirandole, who has been the father of pedants—a race which will never be extinct, because it is unconscious in its pretended science. *Verba et voces!*

In science we see consequently humility. We understand that this which makes the genius of the man is to know that there are those things which he can never know. We employ ourselves with the essence of things, but without searching thoroughly. We admit the life, but as one of the mysteries of nature. We create the high priest of Isis, but without the desire to obtain the secret. This secret, when we all have discovered it, will be perhaps the end of all.

FINIS.





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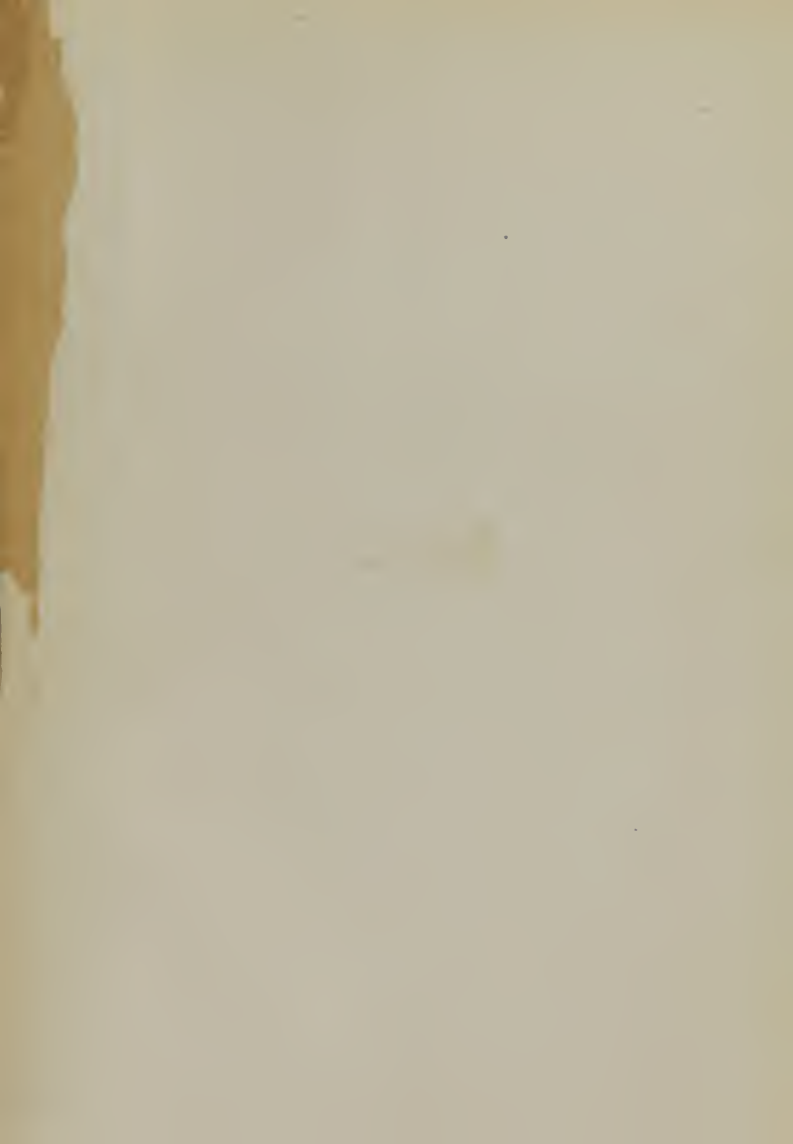
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