der, and sealed. The contents of the *duodenum* should be collected and preserved separately.

6. Carefully inspect the state of the *throat*, *œsophagus*, and *windpipe* for the presence of foreign substances, and for marks of inflammation or corrosion.

7. Observe the condition of the *large intestine*—especially the *rectum;* the presence of hardened feces would indicate that purging had not very recently taken place.

8. Note any morbid changes in the *lungs*, as congestion, inflammation, or effusion; in the *heart*, as contraction, flaccidity, presence of a clot; and the condition of the contained blood.

9. Examine the state of the *brain* and *spinal marrow;* and, in the female, the condition of the uterus, ovaries, and genital organs. [Poisons have sometimes been introduced into the vagina.]

10. Along with the contents of the stomach and duodenum, the viscera that are to be reserved for chemical analysis are the stomach and duodenum (to be kept separate from the others); the liver and gall-bladder, spleen, kidney, rectum, and urinary bladder with its contents. Sometimes, also, a portion of the *blood* may be required for the examination.

11. As the legal authorities will rigorously insist upon proof of the *identity* of the matters alleged to be poisonous, it is of the greatest importance to preserve such matters from all possible contamination by incautious contact with a surface or vessel *which is not absolutely clean*. Avoid the use of colored calico or paper for wrapping up the specimens. When once the suspected articles are deposited in the hands of a medical man, he must preserve them strictly under lock and key, and confide them only to a trusty agent for transportation. Many cases are on record where the chemical evidence failed, simply from a want of power clearly to establish the *identity* of the matters analyzed.

Actual testing for poisons in cases of suspected criminality ought to be undertaken only by those whose chemical knowledge and skill are considerable.

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## SECTION III.

## GENERAL THERAPEUTICS.

REMEDIES have been classified, for the study of *Materia Medica*, in a manner (see *Wood's Therapeutics and Pharmacology*, or *Stillé's* or *Pereira's Materia Medica and Therapeutics*) which is perfectly well adapted to the present state of that science.

I propose the following classification, from the standpoint of the *practitioner*, *i. e.*, according to the **indications** of **treatment,** or *objects proposed.*

Thus regarded, remedies may be studied as—

**Anodyne** and **calmative**: *e. g.*, opium; ether; chloroform; aconite; hydrocyanic acid; hydrate of chloral.

**Protective**: *e. g.*, demulcents; surgical dressings.



**Balancive**: *e. g.*, cold to an over-vascular part; pediluvia; bloodletting.

**Economic**: rest; astringents; retarders of tissue-metamorphosis.

**Eliminative**: *e. g.*, colchicum in gout; purgatives; iodide of potassium, etc.

**Antidotive**: *e. g.*, hydr. ox. of iron for arsenical poisoning; antacids; cinchonization in intermittent.

**Alterative**: *e. g.*, nitrate of silver in scarlatinal sore throat; arsenic in skin diseases; electricity in cancer.

**Recuperative**: stimulants; tonics; chalybeates; oleum morrhuæ; travelling.

An elaborate work might, of course, be written upon the topics just enumerated. It is appropriate to our purpose, only to state them; dwelling, presently, upon another yet more brief classification, of the modes of treatment *most frequently called for*, in the management especially of acute and subacute affections.

First, a few words upon **balancive** measures. These constitute a very large part of therapeutics; one of the most constant elements of disease, and especially of acute diseases, being a disturbance of the *proportion* of circulation, nutrition, innervation, and action in different parts.

For example: when one "takes cold," what has occurred? Chilling the surface, as by damp air, has *checked* perspiration, *contracted* the superficial bloodvessels, causing *congestion* of interior organs, and partial contamination of the blood, from *retained excretory matter*. What, then, is the "indication" or pointing of nature?

Clearly, it is to **restore** the lost balance; by *warmth* to bring on perspiration (unless *fever* occurring demand another method); purgatives and diuretics, with plenty of water to *relieve* the blood of its morbid excess of excreta.

Again, in flatulent colic, unequal distension and spasmodic contraction of a bowel occur, from gaseous accumulation or the presence of irritating ingesta. Aromatics, such as ginger; stimulants, as hot water or whisky; or anodynes, as camphor or opium, by a diffusive action on the whole surface of the affected intestine, and upon its innervation, when they are absorbed and reach the ganglia, will renew a **proportionate** contraction (peristaltic) of the muscular coat, and remove the pain. Very often gentle friction, pressure or *kneading* the abdomen, or external warmth all over it, will have a similar balancive effect.

Laxatives for deficient movement of the bowels, astringents for excess of the same; cold to a too hot head, and mustard and hot water to cold feet, are all balancive means. So is the familiar and always safe use of a *mustard-plaster* to the skin, over any part of body which suffers pain. Pain denotes a morbid innervation from some cause. Apply something which, like mustard, causes a strong impression in a different place, not too remote, and the "error loci" of nerve-tension (or *debilitation*,[1] as the case may be), is done away with—the balance is restored.

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[1] *Radcliffe* "On Epilepsy, Pain, and Paralysis;" *Inman*, op. citat.

Notice may be here taken, briefly, of a new "method" in therapeutics, extending the balancive principle systematically—called the "neuropathy" (*gangliotherapy*) of Dr. John Chapman.

The origin of this is really to be credited to the vivisections of Bernard and Brown-Séquard,[1] and conclusions based upon them, especially by the latter. The experiment of most importance in this connection has been the section of the sympathetic nerve in the neck of a rabbit; which was found to be followed by dilatation of the bloodvessels of its ear. It was concluded from this and other facts similarly obtained (all **traumatic** or **pathological**), as, indeed, are *all* facts of vivisection), that to *increase* the amount of blood and sensibility in any part of the body, you must *paralyze*, partially or temporarily, its sympathetic ganglion. To *diminish* its vascularity and sensibility—you should *excite* its vasomotor nerve-centre.

Dr. John Chapman has systematized the use of these principles, by the application of elastic bags, containing ice, or hot water, along the spine; so as to act upon the ganglia located thereupon, and, through them, to affect the viscera, both palliatively and curatively, in disease. "He considers that ice applied along the spine increases the general circulation, stops the cramp of voluntary and involuntary muscles, proves an effective remedy in epilepsy and other convulsive affections, cures sea-sickness, restrains the sickness of pregnancy, arrests diarrhœa, recovers patients from the cold stage of cholera, and, finally, promotes menstruation. On the other hand, heat along the spine lessens the general circulation, overcomes congestion in all parts of the body, lessens fever, restrains hemorrhage, and lessens or arrests the menstrual flow."

If the *physiological theory* of Brown-Séquard, above mentioned, be true, the *therapeutical process* of Chapman, deduced from it, may be justified. I deny the truth of the one, and, *a priori*, have no belief in the validity of the other. Clinical experience, however, must decide the claims of the practice.

It must be remembered, that a *practice* may prove beneficial, whether the *theory* which suggested it be correct or not. Hot and cold applications to the spine must make (especially when *alternated*, as Brown-Séquard proposed for bed-sores) a strong impression on the whole system; this *may* prove a **rapidly alterative** impression in certain cases of disease. *Should* this prove so, the use of such means should be adopted, just as, and *so far* as, experience shows it to be useful. No such utility of applications whose explanation may be reached in many different ways, can make the *theory* above cited seem, to the present writer, other than erroneous.

The *modes of treatment most frequently called for*, in ordinary medical practice, may be designated as—

The **antiphlogistic**; The **supporting**;
The **febrifuge**; The **antidotive**;
The **alterative** treatment.

[1] See his Lectures on the Nervous System, p. 205, etc. See, also, a discussion of the experiment mentioned, in the author's Essay on the Arterial Circulation.



Under the first head, the **antiphlogistic** (*i. e.* the treatment of *inflammation*), we place—

| | | |
|---|---|---|
| Rest; position; | Tartar emetic; | Digitalis: |
| Cold applications; | Nitrate of potassium; | Ergot; |
| Venesection; | Ipecacuanha; | Mercury; |
| Local depletion; | Veratrum viride; | Opium; |
| Purgation; Diet; | Aconite; | Counter-irritation. |

The necessity of **rest** during *active inflammation* of any organ is a rule without exception.

A choice of **position** is often dictated by the sensations of the patient. When one of the *extremities* is inflamed its *elevation* is advised, in order to allow the blood to return from the overloaded vessels.

**Cold applications** are very important in the treatment not only of *inflammation*, but of *active hyperæmia* or congestion (*e. g.* "determination of blood" to the head). The two precautions most necessary in their use are, that the cold be sustained, but not *excessive*, and that it be not *ill-timed*, so as to arrest desirable *perspiration*.

**Bloodletting**, by *venesection*, *leeching*, and *cupping*, is one of the oldest, and has been one of the most universal of remedies for inflammation. Although "ἀιμοφωβοι," or "blood-fearers," have occasionally appeared in all ages and nations, yet the aggregate testimony of the profession, from Hippocrates down to the present time, has been in favor of the use of the lancet and of local bloodletting in the treatment of violent inflammations and congestions.

*Now*, however, it must be admitted that bloodletting has more opponents and fewer defenders than at any previous period in medical history. Why is this? By reason of—

1. *Reaction* from previously existing *abuse* of the remedy.
2. A *change in average human constitution*, occurring under the artificial habits of *civilized life*.
3. *False construction and misapplication of recent science.*
4. *Leadership* and *fashion*.

I must briefly remark, that the *reaction* alluded to has proceeded *too far*, going from one *extreme* to another.

The *change* occurring *especially in large cities*, in the average human constitution, affords good reason for *limiting* the use of the lancet to a smaller number of cases than was once thought necessary; and for using especial caution as to the *amount of blood abstracted;* but not for abandoning the remedy altogether.

The improved condition of the sciences of *semeiology* and *pathology* gives us the power to discriminate more narrowly in our use of bloodletting, as well as of other remedies. But we should not, for this, throw aside as useless all the experience of our predecessors; as if every new fact was necessarily the heir of some dead old one. *All* facts, old and new, should be retained.

In the *physiological* and *pathological* science which bears upon the question, I hold that false construction and misapplication of observed facts have been operative. An important threefold error has been committed, viz.:—

1. In physiology, the denial or depreciation of the *active* part

taken by the *arteries* in the circulation; and of the great fact, without recognition of which no theory of inflammation can stand, that the arteries are subject to *reflex* excitement—the most normal form of which constitutes active hyperæmia, the most abnormal and exceptional, tonic constriction of the vessels.

2. The error of Prof. J. H. Bennett, of giving attention, in regard to the pathology of the inflammatory process, to the *exudation* alone.

3. That of Prof. Virchow, in considering that no important difference in *kind* exists between morbid lesions of nutrition in vascular and in non-vascular tissues; and that *stimulation*, *irritation*, and *inflammation* are, *essentially* and *practically*, as well as causatively, only degrees of the same vital impression.

The theory of inflammation which has been already laid down,[1] as entirely consistent with the *observations* (whatever may have been the reasonings) of the most accurate pathologists (*e. g.* Rokitansky, Paget, Wharton Jones), inculcates, that the determination of blood towards an inflamed part *conspires with* the central stasis in *causing* the exudation; and that a constant *proportion* exists between the *degree* of this active turgescence and the *amount* of the exudation, and the *character of the changes* which it subsequently undergoes.

Now, of the cardinal elements of the inflammatory process, the local *arrest of nutrition* and *capillary stasis* cannot be *directly* affected by treatment. Nor, *when the exudation has occurred*, can any but palliative or expectant measures be applied to the management of its changes. But, the active concentric determination of blood —the *arterial excitement*—cannot *this* be essentially *modified* by *treatment?* Yes.

By abstraction of blood, we lessen (for a time at least)—

1. The **fulness** of the vessels;
2. The number of **red corpuscles;**
3. The force of the **heart's** impulse;
4. The force of the **arterial** impulse;
5. The excitement of **nerve-centres.**

And by each and all of these influences, we diminish the vascular excitement connected with an inflammation; and thus (I repeat) *lessen the amount* of the resultant exudation, and (Paget) render its "biography" more normal, its changes less degenerative and destructive.[2] Reference has been made, on a previous page,

[1] See *General Pathology*, Section III.

[2] It may be hoped that the time has gone by when any question in therapeutics can be decided by *leadership*. But the "bloodletting controversy" has shown, that the medical mind is not yet *absolutely* free from its influence. As to authorities, old and new, it may interest the student to remember, that of ancient opponents to the lancet, Chrysippus and Erasistratus were the most noted; of the modern European schools, Van Helmont, Dietl, and Skoda, in Germany; Grisolle, in France; Bennett and Todd, in Great Britain. Exemplification of Sangrado's practice, on the contrary, has been especially accredited to Cullen, in England; Rasori, in Italy; Chomel and Bouillaud, in France; and Rush (the father of American medicine), in this country. We should place in the class of *moderate* bleeders of antiquity, Hippocrates, Asclepiades, Celsus, Galen, Avicenna, and "οἱ παλλοι;" of earlier English and French teachers, Sydenham, Huxham, Gregory, Laennec, etc.; of the present date, the recently deceased Professor Alison, with Watson, Christison, Copeland, Lawrence,



to the facts reported, by Drs. Onderdonk, Rogers, H. F. Campbell, Maunder, Moore, Vanzetti, Blackman, S. W. Gross, and others, showing the important effect of cutting off the arterial supply of an inflamed part, in subduing inflammation.

If this be true, it is altogether an erroneous assumption of Prof. Bennett, and others, that inflammation is a "self-limited process which cannot be cut short nor interfered with to advantage." If there be anything positive in medical experience, I believe the contrary of this to have been established.

*Thus* much, perhaps, must be allowed to the influence of recent ratiocinations and experimentations in medical practice without the lancet: that *local* bloodletting may be admitted, in almost every case, to have all the advantages which can be claimed for venesection, except *convenience;* and that, in doubtful cases, the smaller quantity abstracted ought always to be an argument in favor of local rather than general depletion. This admission may be made without surrendering, in the least degree, the principle of therapeutics upon which bloodletting is scientifically justified, and according to which, if we are to interfere at all with disease, it is often one of the mildest, most beneficent, and least hazardous of remedies. Dr. J. H. Bennett admits that *relief* of pain, dyspnœa, etc., sometimes follows bleeding; and this concession carries a good deal with it. Dr. Markham and others have pointed out the importance, in certain cases, of relieving an *overloaded heart* (right auricle and ventricle) by venesection.

How, then, it is proper to ask, do we *define* or *classify* the remedial action of bloodletting?

It is **balancive.** What do we mean by *reducing treatment?* The answer to this question is important.

*I do not know of a single case of any kind of disease, in which the indication or object of medical treatment is to reduce the strength, or lower the vital power of the patient's system.*

What we aim to **reduce** is, *disproportionate vascular* **excitement,** *or* **congestion;** to restore the **balance** of the circulation. It is a mere *imagination* that abstraction of a small quantity of blood *must always* lower the patient's strength. Under some circumstances, it actually increases it. At the same time, there are many persons who *will never bear* bleeding, from an actual deficiency or defective quality of blood.

Taking these propositions as established, we may draw blood, locally or generally, for

Chambers, Parkes, C. West, W. T. Gairdner, Symonds, F. Winslow, Aitken, Markham, Handfield Jones, Dyce, of Aberdeen, Sutton, Geo. Johnson, B. W. Richardson, and others, in Great Britain; Wunderlich, Oppolzer, Graefe, and Niemeyer, in Germany; Jaccoud, Hérard, and Cornil, in France; and, in this country, G. B. Wood, S. D. Gross, Austin Flint, H. J. Bowditch, J. F. Meigs, Fordyce Barker, and others. As *statistics* have been especially appealed to by the opponents of bloodletting, it may be proper to quote here the conclusion of an able analysis of much of the evidence of this kind made public (*Brit. and For. Medico-Chirurg. Rev.*, July, 1858). It is as follows:—

"While the non-bleeding plan has a demonstrable advantage over that of indiscriminate and repeated bleedings, we maintain that the discriminating practice of moderate and early bleeding, general or local, in cases of more or less sthenic inflammation, and of refraining from it altogether in asthenic cases, whether as regards the character of the diseases or the constitution of the patient, is *pressed upon us both by experience and science.*"

1. High, **sthenic** inflammation;
2. Active **congestion, threatening** inflammation or hemorrhage;
3. General **plethora,** ditto;
4. Sthenic *spasm;*
5. Sudden passive congestion (not toxæmic) in robust persons.

It must be remembered that, at the present time, *no one* thinks of bleeding *for fever, as such.*

*Repeated* venesections are seldom now resorted to; the time for the lancet, if at all, is always in the **early** stage of a phlegmasia.

It would be instructive, if compatible with our plan, to allude further, especially, to the use of bloodletting **in certain cases** of **pregnancy,**[1] and of convulsions; and to the **caution** necessary in its application to the treatment of **senile** apoplexy. Old persons rarely bear bleeding well.

We might also, if space allowed, illustrate the principles above laid down, by examples; as, of 1, erysipelas; 2, pneumonia; and 3, meningitis. Why is bleeding seldom called for in the first, more frequently in the second, and quite often in the last?

Our answer is—that it depends chiefly upon the **anatomical relations** of the tissue involved. The skin is unlimited in its opportunity of hyperæmic expansion, and escape of exudation. The lungs are partially confined and limited, by the pleura and walls of the chest. The brain and its membranes are shut entirely within the closed skull. Therefore the influence of **vascular pressure** (which is most affected by bloodletting) is most marked and important in congestion or inflammation of the brain, next so in that of the lungs, and least of all in that of the skin, as in erysipelas.

In **uræmia,** when the patient will bear it, moderate venesection may do good, by taking out excretory material, with a portion of the blood, and favoring secretion by general relaxation.

As to the quantity of blood taken by venesection, twelve fluidounces may be stated as a full, though not large, bleeding for an adult man; ten fluidounces for a woman. For infants and children, one ounce under one year, two ounces under three years, three ounces under five years, four ounces under ten years, would be a full average. Bleeding from the jugular vein is sometimes preferred in young children. The practitioner should judge for himself of the *effect* upon the pulse, etc. It is remarkable how small an amount will sometimes do a great deal of good.

**Cut cups** and **leeches** act alike as to the abstraction of blood, but the former have a more revulsive or counter-irritant effect.

Leeching, being somewhat less violent, is more applicable than cupping to parts which are very *tender;* as, the side in acute pleurisy; the abdomen in peritonitis, a much inflamed joint, etc.

Leeches are usually, for the same reason, applied as near as possible to the part inflamed; cups, sometimes, at a short distance from it. In some cases the *mechanical* leech of Dr. Andrew H. Smith, of New York, has decided convenience and advantage.[2]

[1] See a valuable paper on this subject by Fordyce Barker, M.D., in the New York Medical Journal, Jan., 1871.

[2] See N. Y. Medical Record, Nov. 1, 1869, and Feb. 1, 1873.



In *bronchitis,* it is ordinarily best to apply leeches or cups to the upper *sternal* region.

In *pneumonia,* they may be preferably applied *between the shoulders,* as a general rule, thus leaving room for counter-irritation in front.

In pleurisy, it is desirable to use *leeches* immediately over the inflamed part.

**Purgation,** especially by *saline* cathartics, is a frequently useful part of antiphlogistic treatment.

Cathartics are to be **avoided** in **enteritis** and **peritonitis;** for obvious reasons.

**Diet,** in cases of **sthenic** inflammation, should be *non-stimulant;* but it may be sufficiently *nourishing* (vegetable, farinaceous) at the same time. *Starving* patients is not now thought of, unless they are fearfully *plethoric.* In the **later** *stages* of inflammatory disorders—in fact, *as soon as the exudation has all been thrown out,* **generous** diet is usually required. Some patients will never bear a purely vegetable diet under any circumstances; and *some* cases, even of inflammation, require stimulation from the first.

The idea of the association, always, of *low diet* with *inflammation,* has been too absolute in common practice. When, in acute disease, the stomach refuses to digest food, it is vain to force it upon it. But, it will often digest **liquid** food when it cannot solids. And, as some degree of debility is constant in disease, alimentation being necessary, *concentrated* liquid food, *e. g.,* beef-tea, will frequently be appropriate, when no solid substance at all can be taken.

I believe the *principal* requisites of diet in illness to be, liquidity, and facility of digestion and assimilation. In an irritable, febrile state of the system, the presence of a solid body, as meat or bread, in the stomach, when no digestive fluid is secreted to act upon it, has the effect of a foreign substance—namely, irritation; sympathy with which may disturb or increase existing disturbance of the whole economy.

Practically, I have seen, in a person not robust, suffering from catarrhal fever, the drinking of a wineglassful of beef-tea followed by a copious perspiration and cooling of the skin. Still, a young and previously healthy patient will often do best in the early stage of inflammatory disease upon small or moderate amounts of what are called articles of sick diet; as oat-meal gruel, toast-water, panada, arrowroot, etc. In disorders not affecting the bowels, fruits, especially white grapes and oranges, need seldom be withheld. They are often refrigerant and useful; and such is very frequently the effect of lemonade, which acts as a good diuretic and diaphoretic.

The most powerful of antiphlogistic (arterial sedative) **medicines** is **tartar emetic.**

The "contro-stimulant" plan, of giving *very large* doses of this drug in pneumonia, pleurisy, etc., has been abandoned as excessive and injurious. We need never give more than $\frac{1}{6}$ of a grain of tartar emetic at a dose to an adult—oftener $\frac{1}{8}$, $\frac{1}{10}$, etc. *Children* require *especial* caution in its use, on account of the sensitiveness

of the alimentary canal in them. I have known severe vomiting to be induced in an infant by $\frac{1}{64}$ of a grain. No other medicine as yet discovered, however, is so useful in violent inflammations of the pleura, lungs, bronchial tubes, etc.

Tartar emetic (of course) must **never** be given in **gastritis** or **enteritis.**

**Nitrate of potassium** is a very valuable adjunct to, or in some cases substitute for, the antimonial tartrate. It is often given in *too small* doses. Ten grains may be a minimum for an adult, if the stomach is in an ordinary state.

**Ipecacuanha** is especially valuable in *bronchial*, *tracheal*, and *laryngeal* inflammation and in *dysentery*.

**Veratrum viride** (Osgood, Norwood, J. Lewis Smith) has assumed a somewhat important place as a cardiac and arterial sedative, and promoter of the secretions. It is a very certain reducer of the pulse, but requires *caution* in its use.

**Aconite** is, likewise, a favorite medicine with some practitioners (A. Fleming, S. Ringer, C. D. Phillips,[1] C. West), in the management of pleurisy, pneumonia, etc.

The power **digitalis** has been supposed to possess, to reduce the rate of action of the heart,[2] has induced the expectation (Schönlein) that it would prove a reliable antiphlogistic remedy ; but this expectation has been generally disappointed. It is, however, occasionally useful in bronchitis, etc.

**Ergot** has been employed with the same view, rather as a direct sedative to the *smaller arteries*. It is quite possible that its powers have not as yet been sufficiently appreciated.

The place of **mercury** had appeared, until within a few years, to be settled. Twenty-five years ago, nothing was more common than intentional mercurial *salivation* in the treatment of almost all violent acute and even chronic diseases. In the management of inflammation, in addition to its powerful *alterative* influence, tending to displace, by its own impression, morbid actions and conditions, it was *believed* to exert a peculiar control over the *blood*, *lessening the tendency to the effusion of coagulable lymph.*

In recent times, the "salivating" practice has been abandoned, as disproportionately violent, as well as uncertain. A reaction, somewhat similar to that occurring in the case of bloodletting, has even shaken the confidence of many practitioners in the value of mercury as an antiphlogistic.

My own opinion, very decidedly, is this. That experience fully warrants the inference that mercury is a *general stimulant to all those functions of organic life which are performed under innervation from the ganglia of the* (so-called) *sympathetic* system. It is probable that its action is directly upon these ganglia. Thus, mercury tends to *diffuse* and *equalize* secretion,[3] and the circulation of the

[1] The Practitioner, April, 1871.

[2] Facts have been urged of late which lend force to the opinion that digitalis is primarily, rather a *tonic* than a sedative to the heart.

[3] Very few points in practice are, for instance, so well sustained by experience, as the familiar use (after Abernethy) of small doses of *blue pill*, in the treatment of indigestion with torpidity of the liver, and bowels, etc. Supposing that the conclusion based (by Bennett and others) upon experiments on animals be sustained, that mercury does not increase the flow of bile from the liver; this would merely involve a change in the *explanation* of its therapeutic action, not in the admission of the *often-observed fact*. Dr. Douglass of Boston (New England) first introduced the use of mercury as an antiphlogistic. Dr. R. Hamilton, of England, generally has the credit of it. Falconer, Jas. Hamilton, Habershon, and Williams, of Boston, especially, have of late years written against it. See, in support of its cholagogue action, T. R. Fraser, Edin. Med. Journal, April, 1871.



blood, aiding, in this way, to break up local congestions and inflammations. Moreover, it promotes the disintegration of albuminoid material, such as that exuded under the inflammatory process.

I believe that calomel and blue mass, etc., *have been shown* to be useful in the treatment of several of the acute phlegmasiæ. I do not think that a due regard for the principles of evidence in *therapeutical science* can allow us to put aside the proof of this, deduced from actual experience. Dr. O. H. Smith of Brooklyn[1] reports three cases of *uræmic* poisoning, in which large doses of calomel did great good ; two in pregnancy with convulsions, and one in dropsy after scarlet fever. This suggests the probable action of mercury on the kidneys. Dr. Cyon of St. Petersburg gives experiments seeming to render it probable that urea is *formed* in the liver ; as blood passed through the liver was found to contain much more urea than ordinary arterial blood. Grèhaut's experiments appear to show that the kidneys are not *secretory* but only *excretory* of urea.[2]

*Moderate doses*, at the same time, are capable of doing all that we can *safely* aim to effect with the use of mercurials. I do not know of any variety or form of disease in which I should, at the present moment, feel justified in *intentionally* causing *full salivation* as a means of medical treatment.

Mercury is especially *contraindicated* in the presence of the *tubercular diathesis.*

**Opium**, always the most reliable and potent of *anodyne* medicines, has, in latter times, assumed a more important position as a *remedy* in the treatment of inflammatory diseases.

Experience has warranted this, while certain theoretical considerations also have been urged in regard to it.

1. The influence of the *nervous centres* upon *inflammation* (as upon normal nutrition, circulation, etc.), and the intimate *inter-connection* of the two portions, organic and sensori-motor, of the nervous apparatus, are now more fully recognized than formerly.

2. Opium is believed by some to act *directly, not only* upon the cerebro-spinal, but also upon the *ganglionic* nerve-*cells* as a peculiar stimulant, thus affecting the circulation, nutrition, etc., otherwise than by mere sympathy.

Yet, in estimating the adaptation of preparations of opium or morphia to the treatment of inflammations of important organs, in different stages, we must remember that—

Opium is an *arterial stimulant*, and is, therefore (as a *general rule*), inappropriate in the *early stage* of an active sthenic phlegmasia.

Opium *first excites*, and then *oppresses* the *brain;* in a word, it

[1] New York Medical Record, Nov. 15, 1870.

[2] Ibid., Dec. 1, 1870.

promotes determination of blood to the head; and is, therefore, contraindicated by an already existing tendency to *cerebral congestion.*

Opium also *constipates the bowels*—a fact of less importance than either of the two preceding, as the constipating tendency can be counteracted, if desirable, by other medicines; while, in certain cases, it aids in the treatment (as in dysentery).

In *peritonitis*, where the extent and visceral connections of the tissue affected induce more rapid *prostration* and more serious *nervous irritation* than in any other phlegmasia, *opium has become the* **main dependence** with very many practitioners, even from the *beginning* of the attack. The same reasoning will apply, to a somewhat less extent, to its use in *severe* cases of *pleurisy* and *pericarditis.*

**Counter-irritation** is a measure of treatment often of great service, especially in the *later* stages of inflammation (after local or general depletion, etc.), or in cases unattended with much vascular excitement. In the very *incipiency*, or rather *incubation*, of an inflammatory attack, *i. e.*, in the stage of mere *irritation* or *congestion*, counter-irritation (*e. g.*, by a *sinapism*) may *prevent* the further progress of the inflammatory process. But, if the stasis and concentric hyperæmia be already developed, all *powerful* counter-irritants should be avoided (lest they prove co-irritants) until the vascular disturbance has subsided.

Counter-irritation is, usually, the *most important* part of the treatment of **hyperæmæsthesia**, or "chronic inflammation."

To recapitulate the **order** of time, in which long-recognized experience has prescribed the use of the different means now included under the term "antiphlogistic" treatment:—

Supposing all[1] of the main remedies of this class to be called for in a given case, we would resort *first* to *venesection;* or, if this be undesirable, to *cupping* or *leeching;* next, to *saline purgation;* then, to tartar emetic, nitrate of potassium, ipecacuanha, veratrum viride or aconite; mercury at the same time, or immediately following these sedatives; opium, sometimes with it or them—oftener, a little later; counter-irritation by blisters,[2] etc., last. The *subsequent debility*, especially in cases of *suppurative* inflammation, may call for *tonics* or even stimulants, with generous diet, etc.; while certain cases will even require such treatment from the *first.*

The treatment of *subacute* or *chronic* inflammation, in external or accessible parts, by *astringents* or *stimulants* (e. g., *nitrate of silver*), does not require, in this place, extended discussion; as it usually comes under the domain of Surgery. One example, however, of its *medical* utility may be named—viz., the administration of nitrate of silver (gr. $\frac{1}{4}$–$\frac{3}{4}$ *ter die*) in *chronic gastritis.* The change which it undergoes in the intestines, when given by the mouth, explains the fact that the same medicine fails to exhibit a similar

[1] Of course, this supposition, of the successive use of all of the remedies named in this paragraph, does not, in very many cases, need to be realized.

[2] Dr. Inman, of Liverpool, suggests that the so-called counter-irritants really act, by absorption, as direct *stimulants*, to parts enfeebled by disease. It is quite probable that, in some cases at least, this may be true.



beneficial influence in chronic *enteritis.* In prolonged *dysentery*, however, *enemata* containing this or some analogous mineral salt, as sulphate of zinc, sulphate of copper, or acetate of lead, are often very valuable remedies.

We cannot leave the subject of the management of inflammatory disease without reminding the student of the important practical difference between **sthenic** and **asthenic** inflammations.[1]

The difference is constituted—

1. By the *state* of **system** of the patient affected;
2. By the nature of the producing **cause.**

One whose constitution has been prostrated by previous disease or recent excess, will have, when exposed to the ordinary causes of inflammation, an *asthenic* attack; *i. e.*, one in which, with all the local symptoms of phlogosis, *the general organic functions are sympathetically affected rather with* **depression** *than with excitement.*

Again, certain **morbid poisons** induce, with toxæmia, local inflammation; and blood-disease (dyscrasia), arising from various causes, may have local inflammation as a *secondary effect.* In these cases, the type of the inflammation is generally *asthenic*, and the *treatment* must be modified accordingly—depletion being avoided, or used with the greatest caution, and strong diet and even stimulation being not unfrequently called for.

As examples of inflammations which may be either sthenic or asthenic, we may mention *erysipelas*, *dysentery*, *peritonitis*, *pneumonia*, *gout.*

The first three[2] of these are at times epidemic; and *then* it is that the greatest number of asthenic cases is observed. The following maxim may be considered as fully established:—

*Whenever any local affection, as dysentery, peritonitis, catarrh, or pneumonia occurs sometimes* **sporadically** (*i. e.*, in altogether separate or independent cases) *and sometimes endemically or* **epidemically** (*i. e.*, a number of cases at the same place and time, under a common, local, or temporary cause), *the* **latter** *cases exhibit, as a rule, the greatest tendency to* **depression** *in their symptoms, the largest mortality, the least tolerance of depletory treatment, and the most frequent need of stimulation or support.*

By **febrifuge** treatment I mean, that which is proper during the existence of the febrile state. It comprises no violent measures of any kind.

Remembering that the essential phenomena of fever are, increased *heat*, especially of the exterior of the body, *dryness* of its surfaces, *scantiness* of *fluid* in all the discharges, with actual *increase* in their *solids*, from accelerated tissue-metamorphosis—our therapeutics must be adapted to these conditions. Apart from the necessity of removing or antagonizing, if possible, the *cause* of the febrile disturbance, the indications are to **allay** the **heat** and **dryness** of the surfaces of the body, tegumentary and mucous, and to

[1] Granting that *all* disease is *debilitating* (Inman), the distinction is still valid and important, as to the different *degrees* of depression produced by its different forms or types.

[2] Pneumonia also is sometimes endemic or epidemic, in the form of *typhoid* pneumonia.

*favor* the **removal** of **excreta**, accumulated in unusual amount in the blood and organs.

For these purposes, we may use

| | |
|---|---|
| Moderate laxatives; | Cold drinks; |
| Saline diaphoretics; | Cool ablutions. |

Of these measures, I have no doubt of the propriety of the designation of **water** as the *heroic* remedy, to which the others are merely adjuvants. Diaphoretics will scarcely act at all without free imbibition of water, and the operation of laxatives is much promoted by it. Water *alone* is diaphoretic, diuretic, and laxative; but it may be *aided*, to an important degree, in alleviating the symptoms of fever, by the addition to it of citrate of potassium, acetate of ammonium, etc.

Within a few years the revival has occurred of a practice similar to that of Dr. Currie,[1] of Liverpool, using the *cold bath* as a remedy for *hyperpyrexia* in typhoid and other fevers. This revival appears to be chiefly due to Ernst Brand, 1861. Besides Niemeyer, Ziemssen, Liebermeister, and Traube have especially employed the method referred to, in Germany; as have also Béhier in France, and Wilson Fox in England. Brand applied cold douches to the upper part of the body of the fever patient, the lower portion being placed in a cold bath. Liebermeister, at Basle, immersed the patient in water at 68° Fahr. for ten minutes at a time; sometimes repeatedly during the same day. These measures appear violent; and they are certainly not always successful, or even safe.

Ziemssen's method is manifestly the best. He introduced (at Erlangen) the *graduated full bath* for fever. The patient is placed in water at 95° Fahr., and its temperature is then gradually lowered, while he is in it, down to 86°, 80°, or, when the effects have been shown to be good, even, on repetition, to 70° or 68°. In this way all the danger (which has been shown to be real) as well as the discomfort of the sudden shock of a low temperature, is avoided; while the full benefit of the abstraction of heat is obtained. Wünderlich has expressed preference for this method.

Brand, Liebermeister, Ziemssen, Traube and others report a great diminution of the mortality of typhoid fever under the cold water treatment.

Dr. H. C. Wood (*Phila. Med. Times*, May 30, 1874) reports the production of great relief, followed by cure, by the cold bath, in a case of "cerebral rheumatism." He remarks on the importance of removing the patient from the cold water *before* the temperature has been lowered to the normal degree; so as to secure the prevention of too great a depression.

I have already laid emphasis upon the statement, that no one now thinks of *bleeding* for fever, as such. In a much more strict sense, pathologically speaking, than inflammation, the febrile *nisus* is *self-limited*, although variable in its duration according to the

[1] Currie wrote in 1797; his first experiments with cold affusion were made in 1787. Hancock, Wright, Brandreth, Lind, Willis, and Robert Jackson preceded him; and so had Cirillo of Naples, De Hahn (Breslau, 1737), Samoilowitz (Moscow, 1771), and others. Indeed, in tetanus, and sometimes in fevers, even Hippocrates, Galen, and Avicenna used cold affusion or the cold bath. What is there new under the sun?



cause inducing it. The object of the physician is *not* to *cut it short* (*jugulare*), but to **conduct** it safely to a critical termination. In an equally important practical manner, this principle applies, not only to the management of a brief or ephemeral exacerbation or paroxysm of irritative or reactive fever, but also to those of longer duration, under toxæmic (zymotic) causation; as *exanthematous* (rubeolar, scarlatinal, variolous) or *continued* (typhus, typhoid) fevers. An exception is believed by many to exist, in the case of autumnal, malarial, periodical fevers, *i. e.*, *intermittent*, *remittent*, and *pernicious* (congestive); in which, interference, by the *antidotal* remedy, cinchona or its alkaloids, is considered *safe at all times*, and sometimes necessary before the subsidence of fever. But I believe this exception to be only partial, since careful recorded experience has given rise to the conclusion[1] that quinine is *never necessary* during the *height* of the exacerbation of either type of malarial fever, and that in large doses at that period it *may do harm*. It is, I consider, the best practice generally, in the treatment of autumnal remittent fever, to wait, *until the febrile stage has passed its climax*, and its symptoms have *begun* to decline—the urgency of the case, and all its circumstances, then, guiding the practitioner as to *how soon*, as well as how largely, the special remedy must be introduced.

It is needful, however, in this connection, to refer to the approval by Sir Thomas Watson of the use of opium in the hot stage of intermittent fever; as well as the employment, with reported success (Squire), of quinine in the pyrexia of scarlet fever, and of the same remedy in full doses in pyæmia, by Dr. Fordyce Barker. In Germany, also, quinine is much given during surgical fever, to *reduce the temperature*.

It is a matter of general remark, that patients scarcely ever die during the *hot stage* of any kind of fever. In the most intense form of malarial poisoning, called *pernicious fever*, the danger exists in the extreme depression of the *cold stage;* if fever comes on, the patient is comparatively safe for the time.

The **supporting** treatment is that adapted to states of *prostration* or *debility*.

General weakness of the body (when not a *congenital* defect) occurs under three forms:—

**Exhaustion;**
**Depression;**
**Oppression.**

We are familiar with the first, **exhaustion**, as the effect of overexertion, loss of sleep, deficiency of food, excessive discharges, etc., and as *following* acute, or constituting a *part* of chronic disease.

The second, **depression**, is to be discriminated from exhaustion, as resulting, not from expenditure or waste of the material or forces of the body, but from *interference* with their normal activity by some disturbing cause. To use a mechanical illustration, *exhaustion* is the *running down* of the clock; *depression*, the *arrest* of

[1] See Medical Statistics of United States Army, 1839–54.