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D. G. BRINTON,

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MODERN

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THERAPEUTICS:

A COMPENDIUM OF

RECENT FORMULÆ

AND

SPECIFIC THERAPEUTICAL DIRECTIONS,

FROM THE PRACTICE OF EMINENT CONTEMPORARY PHYSICIANS,
AMERICAN AND FOREIGN.

BY GEORGE H. NAPHEYS, A. M., M. D., ETC.

SEVENTH EDITION, ENLARGED AND REVISED.

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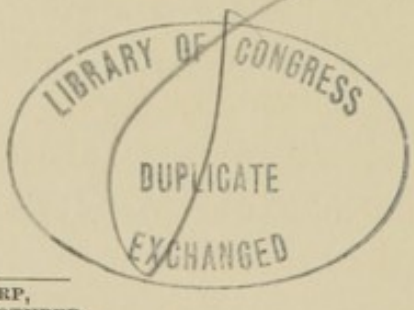
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PREFACE TO THE SEVENTH EDITION.

The present edition of this work is not a mere reprint of the last one. The whole material has been subjected to a close scrutiny, and the most recent writings on materia medica and therapeutics have been searched in order that no addition of moment should be overlooked. Some paragraphs have been dropped, others have been condensed; but the additions, in spite of such condensation, have been so extended that in order to keep the volume within its previous limits, it has been found necessary to select a smaller type for the Résumé of Remedies. By this change, the editors have been enabled to add several topics not previously treated, and many new names and references to those heretofore given. Especial attention has been given to the periodical literature of the last few years, as so many valuable suggestions are sure to lie neglected in journals unless transferred to the more accessible form of a volume.

It will be noted that this volume is confined to diseases strictly medical. Surgical diseases are treated in a similar manner in the companion volume on *Surgical Therapeutics;* while diseases of women and obstetrical complications are considered in the third number of the series, the *Therapeutics of Gynecology and Obstetrics.*

PREFACE TO THE SIXTH EDITION.

In presenting the sixth edition of this work to the medical public, the editor has endeavored to render it worthy the very favorable reception it has had, by subjecting it to a thorough and careful revision. The progress of therapeutics has been very marked within the last few years. Standard treatises on Practice, written by men still living, have, in many instances, become, in great part, obsolete. WATSON and WOOD, AITKEN and TANNER, no longer represent the best therapeutics of the day. Their methods and their remedies have been largely superseded; and the practitioner who would keep abreast of the advances made in his profession must look to a more modern class of writers for his information.

The recognition of this fact has led to many substitutions in the present edition. The monographs and treatises, as well as the numerous medical periodicals of the last year or two, have been carefully examined and collated, so as to render this work in reality what it professes to be—a treatise on *modern* therapeutics. At the same time, the effort has been made to exercise a judicious conservatism in regard to long-known and well-tried remedies; and to avoid admitting what is new simply because it is new.

The additions to the subjects treated of are considerable. Among them may be noted Typhus Fever, Yellow Fever, Mercurialism, Plumbism, and a number of diseases of children. This department has, indeed, been more than doubled in size, and it is represented in an extent more commensurate with its importance than in any previous edition.

EDITOR'S PREFACE.

[TO THE FIFTH EDITION.]

The active demand, which, in less than a year, has exhausted the fourth edition of the present work, testifies, in the strongest terms, to the real and great value it has to the practitioner of medicine. The unanimous opinion of the leading medical journals, and the verdict of those who have purchased it, have been to the same effect.

The editor, therefore, has felt it a duty to prepare the present edition with as little delay as possible, consistent with a thorough revision, down to the latest date. By separating the work into two independent books—one on *Medical Therapeutics*, the other on *Surgical Therapeutics*—an opportunity has been offered to treat each subject in a more complete manner, and to introduce a number of important topics not previously discussed.

Thus, in the present edition of the *Medical Therapeutics*, will not only almost every article be found revised and extended, but a large number added to those in the last edition. * * * *

All the additions have been drawn from the most recent authorities, and, in a number of instances, from unpublished sources, which have been kindly placed at the disposal of the editor. For these and other assistances in preparing this edition, the editor desires to return his thanks to all who have thus aided him, and especially to Drs. C. C. VANDERBECK, LAWRENCE TURNBULL, F. PEYRE PORCHER, J. B. MATTISON, and T. D. CROTHERS.

As to the nature and purpose of this work, and the points in which it differs from works of similar title, the following extract from the preface to the fourth edition will be in place:

"This work stands alone, of its kind, in medical literature. It presents the Art of Therapeutics in all its aspects, and divested of that barren theorizing which has been its bane. Acquainting the reader with the exact treatment of each disease, by living clinical teachers and careful practitioners of several countries, it vastly widens his therapeutic resources, prevents him from becoming a routinist, and inspires him with confidence in the remedies he employs.

"So far from leading him to become a mere *formularum præscriptor*, the diversity it exhibits teaches him independence of thought, while the care with which the indications calling for particular remedies or combinations are given, awakens and instructs his powers of clinical observation.

"But this remark is not intended to belittle the value of definite formulæ. The author has most wisely preserved these whenever possible. By skillful combinations, nauseous articles are rendered palatable, which is often no small matter; ingredients of facile decomposition may be given permanence; the labors of the pharmacist are lightened; and, more than all, the efficiency of pharmaceutical products may be very largely increased.

"The intelligent recognition of the lest-mentioned fact may be claimed as one of the later advances of medical science. The polypharmacy of our forefathers in the profession has disappeared, not giving way to any nonsensical 'law of the single remedy,' as Homœopathy advocates, but to a clear insight into the *synergic* action of remedies, by virtue of which, a judicious combination of several drugs acts in a given direction more forcibly than any one of them singly. It is needless, here, to quote instances of this truth. They may be found in abundance in the pages which follow."

In addition to what is here stated, the following extracts from the Author's Preface to the fourth edition (which he did not live to complete) gives additional information on what he aimed to accomplish in his work, and some of the details of its plan:

"This volume differs from ordinary works on the Practice of Medicine, in being devoted *exclusively* to Practice; from works on Materia

Medica, in treating only of Therapeutics; and from a Formulary, in that it is not a mere collection of prescriptions, but aims at a systematic analysis of all current and approved means of combating disease.

"As I have received a portion of the matter here presented directly from the authors, in this country and in Europe, this much of the volume will not be found elsewhere. When I have drawn from medical periodicals, the name and date of the journal are given in the text. But where a monograph or systematic treatise has been the source of information, the name of the author and his residence are given, and by consulting the index to his works the reader can readily verify the quotation or abstract of his views.

"The diseases are arranged in alphabetical order under the general nosological division to which they belong. The treatment of each is first stated as given by different practitioners, then by various hospitals, after which follows a *résumé* of the more important remedies employed in its management.* An asterisk (*) designates those especially commended.

"American, English and Continental practitioners are quoted in nearly equal numbers. As I have not attempted to mention every remedy employed for a disease, but only such as have some good authority, or else a very plausible theory for their use, so I have endeavored to select as authorities either practitioners of acknowledged reputation, or else such as have sustained their therapeutic suggestions by sound reasoning and sufficient evidence."

The plan here laid down by the author has, with unimportant modifications, been observed by the editor, and will, it is believed, be found a serviceable one by the reader.

---

*This plan has been somewhat modified in the present (seventh) edition, the arrangement being more in accordance with the indications of the disease.

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MODERN
MEDICAL THERAPEUTICS.

I. DISEASES OF THE NERVOUS SYSTEM.*

Apoplexy and Cerebral Hyperæmia—Chorea—Epilepsy—Headaches—Hypochondriasis or Melancholia—Insomnia or Wakefulness—Neuralgia—Paralysis—Progressive Locomotor Ataxia (Posterior Spinal Sclerosis)—Sciatica—Spinal Irritation—Spasmodic Diseases—Tic Douleureux—Vertigo.

APOPLEXY AND CEREBRAL HYPERÆMIA.

Cerebral congestion, plethora, or hyperæmia, is a frequent forerunner of cerebral effusion (sanguineous or serous.) Hence it is observed by

PROFESSOR WILLIAM A. HAMMOND, M. D.,

In his treatise on *Diseases of the Nervous System*, that the general treatment of apoplexy should be directed, *first*, to the prodromic stage of cerebral congestion; *secondly*, to the apoplectic seizure; *thirdly*, to its consequences.

1. In active cerebral congestion, *local bleeding*, as cups to the nape of the neck, or leeches to the temples or just inside the nostrils, often affords marked relief. *Cold* is another very useful agent, applied as ice or cold water to the cranium and nape of the neck. During sleep the head should be elevated. The clothing should be loose about the neck. Sinapisms to the feet and mustard to the epigastrium, are often

*NOTE.—The subjects of Tetanus, Traumatic Neuralgia, Traumatic Paralysis, Rabies and Neuroses of the Skin are treated of in NAPHEYS' *Surgical Therapeutics;* Hysteria and the Special Nervous Affections of Women in the *Therapeutics of Gynecology and Obstetrics*, edited by Dr. WM. B. ATKINSON.

of service. Internally, the *bromides* of potassium, sodium, calcium or lithium are indicated.

1. ℞. Potassii bromidi, ℥j.
Aquæ, f.℥iv. M.
A teaspoonful three times a day, in a little water.

This continued for about ten days is usually sufficient to relieve the head symptoms. The *bromide of lithium* often acts more promptly than either of the others. Dose, gr. xxx. *Ergot* contracts the cerebral vessels, and is of great value in the treatment of active cerebral congestion in all its forms, especially in the first or hyperæmic stage. An excellent formula is:

2. ℞. Sodii bromidi, ℥j.
Ergotæ extracti fluidi, f.℥iv. M.
A teaspoonful three times a day.

Or the *ergotin* of Bonjean may be given in pill form, gr. iij–x, *ter die*. When the pain in the head is a prominent feature, prompt relief is often given by

3. ℞. Extr. fl. paullinіæ, f.℥ss.–j, p. r. n.

In conjunction with these remedies, the oxide of zinc. gr. ij thrice daily, is a powerful agent in relieving congestion and giving tone to the nervous system. It should be taken after meals to avoid nausea.

After the symptoms of congestion have disappeared under this treatment, it becomes expedient to give tonics and restoratives. Among these, strychnia, phosphorus and cod-liver oil stand first. The following extemporaneous mixture is preferable to any of the manufactured syrups or elixirs, with like ingredients:

4. ℞. Strychniæ sulphatis, gr.j.
Ferri pyrophosphatis,
Quiniæ sulphatis, āā ℥j.
Acidi phosphor. diluti,
Syrupi zingiberis, āā f.℥ij. M.
A teaspoonful three times a day in a little water.

Or the following:

5. ℞. Strychniæ sulphatis, gr.j.
Quiniæ sulphatis, ℥j.
Ferri bromidi, ℥ss.
Acid. hydrobrom. (Fothergill's,) f.℥iv.
Glycerinæ, f.℥ij. M.
Teaspoonful in water after each meal.

Phosphorus almost always acts well in such cases. It may be given in the form of the phosphorated oil, or the phosphorated resin; or in one of the following formulæ:

6. ℞. Olei phosphorati, f.℥ss.
Mucil. acaciæ, f.℥j.
Olei bergamii, gtt. xi. M.
Make an emulsion. Dose, fifteen drops thrice daily.

7. ℞. Zinci phosphidi, gr. iij.
Rosar. conserv., q. s.
Make thirty pills. Dose, one three times a day.

Arsenious acid, in doses of one-fiftieth of a grain, three times daily, after eating, has a favorable action, especially in those forms of cerebral congestion which have been the result of mental exertion or anxiety.

The bowels should be kept in a soluble condition, severe muscular exertion avoided, the stomach should not be overloaded, alcoholic stimulants should be shunned, and the mind maintained tranquil.

When the case demands abstraction of blood, leeches should be applied inside the nostrils. "In no other way can the blood be so advantageously drawn from the brain."

2. During the attack, when there is coma and the ordinary symptoms of the apoplectic condition, there is nothing to be done in the way of medication which can afford the slightest prospect of relief. Blood-letting, purgation and the iodide of potassium do no good at all, and the first two probably harm. The patient should be kept perfectly quiet, with the head well elevated, and in a room with the temperature about 60°, and well ventilated. The bowels, if not moved naturally every day, may be emptied by an enema of warm water; the urine should be drawn off with a catheter, if required; the strength, if feeble, as indicated by the pulse, should be kept up by the cautious use of stimulants; and if the patient is restless and does not sleep well, some one of the bromides should be administered. The food should be of the most nutritious character and taken frequently. If symptoms of inflammation make their appearance, cold to the scalp and blisters to the neck are called for.

3. In about two weeks after the stroke it will be proper to take action to restore the power of motion. The means are passive motion, strychnia, phosphorus and electricity. The muscles of the affected limb should be kneaded and the joints flexed and extended, and the surface rubbed every day for five or ten minutes at a time. Strychnia

should be administered, preferably by hypodermic injection, in doses of $1/32$ of a grain once a day. In many old cases of hemiplegia, this has an excellent effect. Phosphorus may be employed as follows:

℞. Zinci phosphidi, gr. iij.
Extracti nucis vomicæ, gr. x. M.
Make thirty pills. One three times a day.

No agent is so valuable, however, as electricity. The induced current is usually sufficient for recent cases; but old cases may require the primary current. The poles, terminated by wet sponges, should be applied to the skin covering the paralyzed muscles, or to the nerves. The interrupted current should be applied. The same agent is valuable to restore sensibility to the parts.

J. HUGHLINGS JACKSON, M. D., LONDON.

There is, unfortunately, little to be done. The chief thing is to keep the patient quiet. Two drops of *croton oil* should be put on the tongue and the urine drawn off, if it do not pass freely without help. The application of blisters to the back of the neck, or of mustard plasters to the calves of the legs, is a common practice, with no evidence to show that these applications are of service. Still, in certain cases of chronic cerebral disease, blisters relieve the patient of severe pain in the head; and it is not possible to deny that they may be of service when the circulation of the brain is quickly disturbed after a clot. Were our author to use blisters, which he never does, he would only employ them where there is secondary disturbance of the circulation. It is hard to believe that mustard plasters to the calves of the legs can be of any service or disservice. Dr. JACKSON never prescribes any medicine, except croton oil, by the mouth.

If the patient is found in, or has passed into, a condition in which the face is flushed, the temperature above 100, the veins prominent, and the respiration and circulation largely disturbed, treatment, beyond, perhaps, purgatives, is of little use. If, however, the pulse be not very rapid, little more than 100, and if it and the respiration be regular, it is not unreasonable to think that the system may be relieved—though the ultimate size of the clot may not be influenced—by *bleeding*. The practice of bleeding in cerebral hemorrhage, deprecated by TROUSSEAU and TODD, must be exceeding rare in England, as in the whole course of Dr JACKSON's life he has seen but one

person bled for cerebral hemorrhage. If the pulse be very high, 120, 130 or 150, or if it be weak, venesection must not be thought of.

This is about all of the little that can be done for patients who are in the apoplectic condition. When this condition is passed, we are practically unable to help in the immediate difficulty of infusion of blood in nervous tissue. We have still, as in many other diseases, to improve the general health. The proper care of a patient who has a clot of blood in his brain, and who is liable to have more effused, consists in attending to his diet, excretions, sleep and exercise. Yet there is nothing in this peculiar to the treatment of cerebral hemorrhage. For the immediate lesion, blood in nervous tissue, our author knows of no direct treatment.

DR. D. C. WADE, OF DETROIT,

Recommends in this disease a combination of *hydrobromic acid* and *ergot*, (*Detroit Medical and Surgical Journal*, December, 1877,) as follows:

9. ℞. Ergotæ extracti fluidi,
Syrupi, āā f.℥ss.
Acidi hydrobromici diluti, f.℥j. M.
A teaspoonful in water as required.

Of this prescription he says:

"I do not believe that any other combination equals this for efficiency in case of cerebral hyperæmia. It is not only indicated where venesection would appear beneficial, but it may be administered by enema in a case of intercranial hemorrhage, with the likelihood of arresting the transfusion, by capillary restriction, when an additional depletion of the arterioles, by artificial abstraction of blood, would still further endanger life without influencing the hemorrhage, and is consequently positively contra-indicated.

"Ergot and hydrobromic acid will be found to be promptly useful in the vertigo of plethora, with confusion of ideas, or where a determination of blood to the brain is prone to occur from other causes."

DR. ALLEN M. HAMILTON, OF NEW YORK,

In his work on *Nervous Diseases*, also speaks very highly of hydrobromic acid in cerebral hyperæmia. He gives the following formula:

10. ℞. Sol. acidi hydrobromici,
Elixiris simplicis, āā f.℥ij. M.
A teaspoonful before each meal.

As a prophylactic measure, he has patients apply cold (ice-bag, etc.,) to the back of the neck for fifteen minutes, night and morning, "and finds it succeed admirably." It is of great importance to improve the cutaneous circulation by the flesh-brush, cold, the Turkish bath, etc.

His treatment of the attack and sequelæ agrees substantially with that given by HAMMOND.

A peculiar and frequent form of cerebral plethora is described by German writers as "pressure in the head" (*Kopfdruck.*) The principal symptoms are a feeling of tightness or weight in the head, occasional headache, slight vertigo, difficulty of fixing the attention, and loss of power to do "hard work." For the treatment of this,

DR. F. RUNGE, OF NASSAU,

Recommends rest of the affected organ, rest from mental exertion, and freedom from disquietude. (*Journal of Mental Science*, January, 1878.) The patient should lead a quiet and idle life for two or three months. Change of air and scene is useful, though sometimes the annoyances and discomforts of traveling do harm; but Dr. Runge has found residence in high situations, as in some health resorts of Switzerland, to be contra-indicated. The diet should be non-stimulating; wine, beer, and condiments should be abstained from; and the author has known cases where two or three cups of strong coffee brought back the distress for a week at a time. Dr. Runge says that many of the vegetarians whom he had met had suffered from Kopfdruck, and preferred an unstimulating diet, because it relieved their malady. He further recommends cold baths to the legs and lower part of the body, which, he thinks, have a more permanent action in calling blood to the surface than hot baths. He observes that parts exposed to the cold are habitually red. He does not recommend cold baths applied to the head, but sometimes uses bromide of potassium where there is a tendency to melancholia. He has tried electricity, but only occasionally found benefit from it.

RÉSUMÉ OF REMEDIES.

Acidum Hydrobromicum. See above.

Acidum Arseniosum is of benefit in strong plethoric subjects with a tendency to apoplectic congestion, but it is not applicable to old, weakly persons. It is supposed to act by reducing the excess of the red globules of the blood. HAMILTON esteems it most when the circulation is sluggish, and suggests:

11. ℞. Sol. potass. arsenit., f.ʒ ij.
Quiniæ sulph., ʒ ss.
Acidi sulph. aromat, q. s.
Aquæ anisi, f.ʒ iv. M.
A teaspoonful every four hours.

Aconitum. In simple apoplexy in plethoric persons, with full pulse, hot skin and flushed face, Dr. C. D. F. PHILLIPS thinks aconite "decidedly the best" remedy that can be employed, ♏j of the tincture of the root every half hour. It should be avoided when the heart is weak and the face pale. (*Materia Medica*, 1879.)

Bromides. These are recommended by all recent writers for diminishing arterial tension and cerebral blood pressure. They may be combined with ergot (F. 2), with aconite if cardiac action is violent, or with digitalis if the heart is weak; as

12. ℞. Tinct. aconit. radicis, f.ʒ i–ʒ ij.
Sodii bromidi, ʒ iss.
Aquam menth. piper, ad f.ʒ iv. M.
A teaspoonful three times a day. (HAMILTON.)

Ergota is a powerful cerebral anæmiant. It may be given in 5-gr. doses of the watery extract thrice daily, alone or combined. Dr. N. S. FOSTER (*Lancet*, September, 1878,) uses ergotine, gtt. xij of a solution gr. x, to aquæ f.ʒ j, injecting it deeply into the muscles, to avoid suppuration. When the patient was seen early, his success was striking.

**Hydrargyri Chloridum Corrosivum.* Dr. HEADLAND recommends for the threatenings of apoplexy in old age, (*e. g.*, vertigo, confusion of ideas, and general embarrassment of the mental faculties,) corrosive sublimate in doses of gr. $\frac{1}{32}$ in solution, three times a day, for three or four weeks.

Hydrargyri Chloridum Mite. Administered as recommended by Dr. J. COPLAND, (grs. x–xv, mixed with a few grains of gamboge, rubbed up with butter, and placed at the root of the tongue,) calomel, although a speedy and effectual purge, is not unattended with danger. Alarming ptyalism has followed this treament.

Potassii Iodidum has been recommended in cerebral apoplexy, on account of its eliminative power, after the acute symptoms have subsided.

Sinapis. In cases of apoplexy from over-distention of the stomach, mustard, in doses of a tablespoonful or less in a tumbler of warm water, is a good and quick emetic, which, by removing the exciting cause, is of essential benefit.

Strychnia. Dr. MARSHALL HALL has derived great benefit from the use of acetate of strychnia in the threatenings of apoplexy. He advises the following formula:

13. ℞. Strychniæ acetatis, gr. j
Acidi acetici, ♏xx.
Alcoholis, f.ʒ ij.
Aquæ, f.ʒ vj. M.
Dose, ten drops, combined with a rigid system of mental discipline, diet, etc.

GENERAL REMEDIES.

Blood letting is no longer the routine practice in apoplexy. It is now generally recognized that there is less danger in not bleeding at all, than in taking blood in doubtful cases, in which there may be some of the indications for bleeding.

The *contra-indications* of bleeeding in apoplexy are an age over sixty; a feeble, very frequent, intermitting, slow or large pulse, or one inclined to double beat; a respiration labored and accompanied with *cold* perspiration; great mobility of the nervous system, with weak muscles, whether the body be thin or corpulent; an attack soon after a full meal, or after great mental or bodily fatigue.

The *indications* for bleeding are a quick, wiry, resisting pulse; flushed countenance; warm perspirations; noisy breathing; a tendency to spasmodic muscular contraction; and an age under sixty.

Cathartics. In all cases of cerebral plethora, the bowels should be kept soluble. Aloetic preparations are said by some writers to be specially derivative; others prefer the regular use of Friederichshall, Hunyadi Janos, or other similar mineral water. In an apoplectic attack, purgatives are indicated. One to two drops of croton oil on the back of the tongue, will bring on purgation when the patient is unconscious. When conscious, ½ grain of elaterium with ¼ gr. nux vomica makes an efficient pill.

**Diffusible Stimulants* may be given with advantage, particularly when the pulse has a double beat, in atonic cases where bleeding is contra-indicated. *Aqua ammoniæ* is one of the best of these: ℥xij–xv may be administered in water, and the vapor also applied to the nostrils. Or f. ʒ ss–j of the *aromatic spirit of ammonia* may be given in water or camphor mixture. Or grs. v of the carbonate of ammonium may be ordered.

Enemata. Terebinthinate and other enemata often afford relief, not only by removing scybala, but by their powerful revulsive action.

EXTERNAL REMEDIES.

Counter-irritation. *Capsicum cataplasms* to the feet are powerful and excellent revulsives, which will, however, cause vesication if kept on too long. *Sinapisms* to which have been added powdered capsicum, or oil of turpentine, may, in most instances, be applied with evident benefit, to the soles of the feet and the inner parts of the calves and thighs. *Blisters* applied to the calves of the legs and sometimes to the nape of the neck, are of benefit in *simple* or "*serous*" apoplexy, but of little advantage in *sanguineous* apoplexy. An open blister at the nape of the neck (or better, a seton or issue there,) is often very useful when there is a tendency to apoplexy. *Turpentine stupes* to the extremities are frequently productive of benefit.

Electricity is considered by Dr. HAMMOND an invaluable agent for the relief of the sequelæ of an apoplectic attack, (p. 20.) It will generally be found to restore the sensibility of the part before removing the motor paralysis. The electric wire brush and the wet sponge are the appliances most frequently demanded. In recent cases this will almost invariably prove effectual. Hyperæsthesia, which is sometimes a troublesome legacy of the cerebral extravasation, may be similarly managed.

Ice applied to the head while the feet are immersed in hot water, is sometimes productive of benefit, but must be employed with great caution in debilitated or old subjects. Dr. BARTHOLOW is of opinion that ice is often used without due discrimination. When the face is pale, the surface cool and the circulation depressed, cold applications to the head are harmful. On the other hand, Dr. JAMES M. GOODHART, of Guy's Hospital, London, believes that the indication to restrain the hemorrhage is so imperative, that the application of cold locally is very generally called for, although its employment seems rather contradictory to the general course of treatment otherwise required.

**Leeches.* In threatened apoplexy arising from the suppression of a habitual discharge, as from piles, leeches applied to the verge of the anus often afford prompt relief. If the threatened attack arise from suppression of the menses, the leeches should be applied to the inner side of the thighs. Sir HENRY HOLLAND states that he knows of no mode in which a given quantity of blood can be removed with equal good effects. Leeches to the verge of the anus give more immediate benefit than three times the number to the temples or elsewhere.

CHOREA.

PROF. WILLIAM AITKEN, M. D., EDINBURGH.

The indications of cure are: 1. To remove, if possible, all morbid states of the body which may tend to aggravate the disease, such as constipation, anæmia, amenorrhœa, worms. 2. By well-regulated purgative medicines to subdue any cerebral congestion. 3. To sustain the strength and improve the vigor of the nervous system by tonic and stimulant medicines, by food and by the cold bath.

14. ℞. Camphoræ, ℈ v.
Syrupi, q. s. M.

Divide into twenty pills. One three times a day. Useful after discharges have become healthy by the action of the purgatives.

15. ℞. Spiritûs ætheris nitrosi, f.℥ j.
Aquæ camphoræ, f.℥ iij. M.

Tablespoonful three times a day.

Many young women, who attribute the attack to fright, get well under this treatment.

G. H. BARLOW, M. D., LONDON.

In ordinary cases the exhibition of purgatives to keep the bowels freely open, and the *sulphate of zinc*, in doses gradually increased from

gr. j–xij–xv–xx, or even more, will effect a cure; when, however, the sulphate has been used in these large doses, its sudden discontinuance seems to be felt by the system, and a return of the symptoms ensues; the best rule, therefore, for its exhibition is as follows:

The bowels being kept open, the sulphate should be commenced in doses of gr. j, for a child æt. 12 years, and this should be increased by the addition of gr. j to each dose daily, until it either causes sickness, or there is an obvious diminution of the choreic movements. In the former case, the dose should be diminished by at least one-half, and so continued for several days, with a view of establishing a tolerance; but if, on the other hand, there be marked improvement, it should be no further increased, but continued without alteration until either the improvement ceases—in which case it should be again gradually increased—or the disease has altogether subsided. When the latter is the case, the dose should be diminished day by day, rather than discontinued suddenly, as by following the former course, we have less reason to dread a relapse. When anæmia is present, *iron* has more control over the disease than zinc. The sulphate of iron may be combined with the zinc.

PROF. BOUCHUT, OF PARIS.

This eminent writer classifies the forms of chorea and their treatment as follows:

1. *Verminal chorea*, from worms. Santonine, or if tænia be suspected, male fern, or kousso.

2. *Dental chorea*, from irritation of teeth. Remove the offending tooth.

3. *Anæmic chorea*, seen in convalescence. Iron, quinine, arseniate of iron and soda, &c.

4. *Chorea from moral cause.* Isolation, rest, antispasmodics, firm government.

5. *Electric chorea*, where the affection is partial, limited to a single limb and monoplegic. Subcutaneous injections of morphia, and sulphate of eserine, tincture of gelseminen, &c.

6. *Organic chorea*, that is, resulting from the organic nature of the malady. All remedies which have power to disperse the congestion of the spinal cord, as ether-spray, douches, sulphur baths, vesicatories, cauterization, &c. M. Bouchut prefers dotted cauterization with *fusain, euonymus europæus,* and daily hypodermic injections of morphia,

or valerianate of ammonia. The drugs he employs are opium, emetics, arseniate of soda, chloral hydrate. He lays great stress on procuring sleep, and says that he has made children sleep fifteen and eighteen hours a day for eight and ten consecutive days, by administering *chloral* to them. After breakfast at eight o'clock he gives forty-five grains of chloral. The child is roused for its dinner, two hours after which a similar dose is given; it wakes towards evening, and on being fed, enjoys a natural sleep. He has never seen any ill effects from this remedy in children.

THOMAS KING CHAMBERS, M. D., LONDON.

This author recommends Fowler's solution, with cod-liver oil and iron, if the general indications demand them. He adds that injudicious management of patients afflicted with chorea frequently protracts the case. One of the most common forms of injudicious management is the fixing the attention of patients upon their infirmity, by telling them how bad they are, offering unnecessary help, etc. They should be encouraged to make every exertion to direct the movements of the limbs; as by slow walking to music, carrying trays and crockery, and other things that demand care. In order that their attention may be withdrawn from their deficiencies, looking-glasses and the distressing sight of other choreics should be avoided. They should be got away from home as soon as possible. Sent under the care of a judicious person to the seaside, or anywhere else for an excuse, children often recover rapidly; whereas, had they remained at home, they would have continually relapsed.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

17. R. Zinci valerianatis, ℥ ij.
Cinchoniæ sulphatis, ℥ j. M.
For twenty pills; one thrice daily.

The *bromide of iron* has been employed by Dr. Da Costa with excellent effects. It should be given in increasing doses, beginning with never less than five grains for a child, and running up the dose rapidly to twenty grains three times a day. He likes it better than any other one article in the treatment of chorea. It should be given in increasing doses, never starting with less than five grains for a child, and rapidly increasing the dose to twenty thrice daily. It may be given in plain syrup and water, in the form of a pill, or better, in an

effervescing powder. It not only affects the chorea, but also influences the nervous system as a sedative, quieting it and giving the patient rest. It is a valuable agent in treating the incontinence of urine in children, and it was in a case of this kind, complicating chorea, that he first observed its value; being surprised to see that, as the symptom which led to its administration improved, the chorea also diminished, and soon disappeared. Since then he has used it almost continuously. In answer to the question whether it is the bromide or the iron that benefits, he thinks it is the combination; that neither *alone* accomplishes the result; for it will benefit cases that have previously taken iron without improvement; and, as regards the other bromides, we certainly cannot claim for them any especial value in chorea.

18. ℞. Cupri ammoniati, gr. ¼.
In pill thrice daily; to be gradually increased to gr. j.

19. ℞. Extracti cimicifugæ, gtt. xx.
For one dose, three times a day.

PROF. WM. A. HAMMOND, M. D., NEW YORK.

Of the preparations of zinc, Dr. HAMMOND prefers:

20. ℞. Zinci bromidi, ℥i.
Syr. simplicis, f.℥j. M.
Ten drops three times a day, increased as rapidly as the stomach can bear it.

After the disappearance of the chronic symptoms, the doses should be diminished in the same gradual manner they were increased. Dr. HAMMOND'S main reliance, however, is upon *strychnia*.

21. ℞. Strychniæ sulph., gr. ij.
Aquæ, f.℥j. M.
Five drops three times a day to a child from ten to fifteen years of age.

This dose should be increased one drop daily until the physiological effects of the medicine are manifested, as evidenced by stiffness of the legs and neck. When this takes place, the dose should be at once reduced to five drops, and increased again as before. TROUSSEAU also recommends this drug in high terms.

He also found *ether-spray to the spine* of unequivocal value. The whole spine is exposed, and the ether-spray is thrown upon it from the occiput to the sacrum for about ten minutes every day or every other day.

DR. A. W. HAMILTON, NEW YORK CITY.

This writer gives the results of his observation with various drugs in the *New York Medical Journal*, February, 1877. He has found *strychnia* serviceable carried up to the point where stiffness of the sural muscles is arrived at. Next to this comes *arsenic*. It must be given in large doses. Occasionally, digestive troubles are produced very quickly by this drug, and then strychnia may be substituted. Cold to the spine cannot be overestimated as a plan of treatment; either the ether-spray, or ice-bags every day, allowing them to stay on about ten minutes. PERROUD, who has used the ether-spray, makes applications from four to eight minutes in duration every day. In thirty-five cases treated with the ether-spray, from fifteen to twenty applications produced permanent benefit. The spray should be directed to the upper part of the cord, over the upper cervical vertebræ. *Eserine* has been recommended, and BOUCHUT has given the results of 437 cases, 205 who took it in pilular form, and 232 hypodermically. The average dose was from 2 to 5 milligrammes. He obtained temporary benefit, which seemed to wear off; but when the drug was repeatedly administered, he accomplished many cures. He reports twenty-three cures by an average of seven injections. It is a dangerous remedy, however, and produces severe gastric symptoms. *Conium* is occasionally efficacious, but its effects are temporary. *Phosphorus*, with cod-liver oil, is a most valuable curative agent, and in cases where everything else failed, it has succeeded. In some instances, nothing does good. Put them in a dark room, and keep them perfectly quiet. The diet should be regulated with judgment. Plenty of fresh air and sleep come next, and absolute mental rest must be enforced. The school-books and the school-room are to be parted from, and agreeable diversions planned. An excellent auxiliary to medication is the salt-bath. A handful of rock-salt in the water, and the energetic use of the rough towel, will infuse a tone and vigor that will soon become apparent. Decided medication is useless in these patients when their personal habits are not looked after.

THOMAS HILLIER, M. D., LONDON.

22. ℞. Liquoris potassii arsenitis, ♏ij.
Potassii bicarbonatis, gr. iij.
Potassii iodidi, gr. ij.
Aquæ camphoræ, f.℥ss. M.

For one dose, thrice daily, to children aged five, for aggravated chorea, attended with severe pains in the limbs, and rheumatic persistent swellings.

Arsenic in full doses is a valuable remedy in a fair proportion of cases, but in some instances it entirely fails. *Iodide of potassium* is useful when the patient is subject to chronic rheumatism.

Occasionally purgatives and tonics, especially *iron*, are attended with much success. *Strychnia*, so highly recommended by TROUSSEAU, seems, to our author, to be really injurious in the acuter stages of the disease; in the more chronic form, and where there is a tendency to paralysis, it is of service. Iron and strychnia may be combined thus:

23. ℞. Strychniæ, gr. ½.
Vini ferri, f.℥ iv. M.
A dessertspoonful thrice daily, to a child ten years of age.

Narcotics, such as opium, belladonna, cannabis indica, or conium, are of little or no use. Antispasmodics, such as valerian and assafœtida, are also useless.

Our author has seen good results from the employment of *baths of sulphuret of potassium:*

24. ℞. Potassii sulphureti, ℥ iv.
Aquæ (90° F.,) ♁ xxx.
For a bath; the patient to remain in it for an hour daily.

This bath is also recommended by Dr. FELIX VON NIEMEYER, when there is anæmia.

Gymnastic exercises, shampooing and passive movements, are of service. As many muscles as possible should be exercised, without fatiguing any of them. *Shower baths* are useful in the latter stages, when the patient is not timid, or too much excited by them.

Dr. NIEMEYER quotes BENEDIKT, who declares that out of more than twenty cases of chorea, treated by him by the *constant galvanic current*, not one has failed to recover. The current which he employs is just strong enough for the patient to feel it distinctly, and he applies it along the spine, the patient standing erect. Painful currents aggravate the symptoms.

PROF. O. REVEIL, M. D., PARIS.

25. ℞. Extracti hyoscyami, .
Zinci valerianatis, āā ℥ ss.
Bismuthi subnitratis, ℥ j. M.
Divide into forty pills. Three or four a day.

26. ℞. Extracti hyoscyami, ℥ss.
Ferri valerianatis, ℥j. M.
Divide into forty pills. One thrice daily in the chorea of chlorotic patients.

27. ℞. Valerianæ pulveris, ℈ ij.
Belladonnæ radicis pulveris, gr. ij.
Castorei pulveris, gr. iv.
Sacchari, ℥ iss. M.
Divide into twenty powders. One five times a day.

DR. GEORGE T. STEVENS, OF NEW YORK.

The novel view is advanced by this writer, (in the *Transactions of the New York Academy of Medicine*, 1876,) that chorea arises from irritation dependent upon anomalous refraction of the eye, and in a very large proportion of cases upon hypermetropia. Hence in regard to treatment the first and great indication is to correct the faulty refraction by the use of proper glasses. This will often relieve the patient at once. If glasses for any reason cannot be supplied or used, the child's eyes may be covered, for it is a well-known fact that when the patient with chorea sleeps, the choreic movements often cease; this is doubtless because the eyes are at rest.

The Calabar bean has of late years been found of value in the treatment of chorea; and, when we remember that its peculiar and characteristic effect is to stimulate the ciliary muscle, we shall see that its use is rational.

As children and others suffering from chorea usually also suffer from general want of vigor, tonics, chalybeates, and arsenic are generally indicated.

The success which Dr. STEVENS has met with in a number of cases, goes to show that, in some instances at least, this view is well founded.

HÔPITAL DES ENFANTS, PARIS.

The means of treating chorea more particularly employed at this hospital, are the *tartar emetic* plan advocated by GILLETTE, and still employed by ROGER; *gymnastics*, advocated by BLACHE; and *sulphurous baths*. The tartar emetic plan is this: Three days' treatment: during the first day, 3 to 6 grains of the remedy, (according to age;) during the second, 5 to 10 grains; during the third, 8 to 12 grains; then three days' rest; then three days' treatment; commencing the new series with a dose one grain stronger than in the first series—to end with a third turn, often attended by good effects. Gymnastics are highly beneficial in milder cases of chorea, and in the

declining stage of the severer forms. As much may be said of sulphurous baths. The other means employed at the hospital are: *Opium, chloroform inhalations, salt baths, hydrotherapy, tonics*, etc. Strychnia, so warmly advocated by Prof. TROUSSEAU, is scarcely ever employed at the Hôpital des Enfants.

TREATMENT BY ENFORCED REST.

A number of recent writers have reported favorably of the treatment of chorea major by absolute and prolonged rest in bed.

Dr. W. F. WADE, (*British Medical Journal*, December 28th, 1872,) gives the patient a sufficiency of good plain wholesome food; keeps her in bed, in order that the muscular and nervous systems may have the greatest attainable repose, and thus prevent wear and tear. This also secures a uniform warm temperature. He prescribes 2 tablespoonfuls of compound decoction of aloes twice or thrice a day, if there is constipation. This is all that is necessary in many cases; but if improvement is not going on satisfactorily, he gives sulphate of zinc, in doses of 2 or 3 grains, three times a day, in water, and increases the dose until each dose produces slight nausea.

In the *Chicago Journal of Nervous Diseases*, April, 1877, Dr. RANSOM DEXTER relates a case of chorea major in which many remedies had proved inefficient, and which was much improved by such absolute rest as was obtained by closing all means of external irritation. The patient was kept in bed, the room was darkened, the eyes bound up, and the ears plugged with cotton. The result of this procedure is very satisfactory. Dr. JOHN VAN BIBBER, of Baltimore, has tried a modified plan of this treatment with success, (*Transactions of the Medical and Chirurgical Faculty of Maryland*, 1878.) He states that mere confinement in bed in a hospital ward is not sufficient. The presence of other patients, the passing to and fro of nurses, the bustle of administration, and numerous distractions, would give to a choreic patient much cause for restlessness. Unless the rest is without interruption or irritation, it will be found, if not useless, of little benefit. Hence, it is necessary to provide an apartment for the patient where the blinds can be closed to avoid irritation by the eyes, absence of noise to avoid excitement by the ears, absence of any conversation to render the mind as quiet as possible. Add to these requisites an attendant who can be still and patient, the advantages of good nourishment and necessary medicines, and this is a system which is essentially

good and curative. To prevent the patient being injured by too long confinement, he employs massage, once or twice daily.

RÉSUMÉ OF REMEDIES.

**Acidum Arseniosum* is highly recommended by numerous authors. Dr. A. FLINT says it has stronger testimony than any other drug. Dr. BEGBIE, who, in an experience of thirty years, states that he has never known it to fail, prescribed gtt. v of Fowler's solution twice daily, after a meal, and added one drop to the dose every day, until the specific effects appeared, when he suspended it for a time. Dr. EUSTACE SMITH, of London, remarks that the tolerance of children for arsenic is a matter of common observation, and this tolerance is especially marked in the case of a non-febrile disease, such as chorea, where there is no increased irritability of the digestive organs. To a child between the ages of five or six and twelve, the subject of this complaint, Fowler's solution may be given in doses of 10 minims three times a day, directly after meals. The influence of this treatment upon the disorder is seen almost immediately, and it is rare for any of the physiological effects of the drug to be observed. By this means, cases of the disease which had resisted smaller doses of arsenic, may be cured in a few days, and even severe cases seldom last longer than a fortnight or three weeks.

Anilin, first employed by Dr. JAMES TURNBULL, is also recommended by Dr. F. E. ANSTIE. The dose is gr. i–ijj, thrice daily, of the anilin sulphate. It is a white powder, easily taken.

Antimonii et Potassii Tartras is recommended by Dr. C. WEST, in acute cases, given in full doses. Dr. THOMAS HILLIER, however, condemns its use (which he has found inutile,) as a depressing remedy, ill adapted to a disease like chorea of weakly, badly-fed children. In French practice, it is advocated by GILLETTE and ROGER. (p. 31.)

Apomorphia has had a limited but favorable trial in this disease.

Argenti Nitras is much less employed than formerly, before the discovery of other remedies of greater efficiency.

Belladonna, though formerly much employed, is characterized by Dr. THOMAS HILLIER as of "little or no service," and such seems to be the general modern verdict.

Brominium, see Potassii Bromidum.

Camphora is a remedy in which Dr. C. B. RADCLIFFE states he has considerable confidence. He gives it generally dissolved in cod-liver oil. AITKEN also approves of it.

Cannabis Indica has been found useful in some cases. In the sleeplessness attendant upon severe chorea the tincture has proved an excellent hypnotic, in full doses.

Chloral, by its hypnotic effect and the consequent ameliorating influence of the sound sleep it produces, has been found of benefit in many cases.

Chloroformum Purificatum. Chloroform inhalations are not approved of by Dr. C. B. RADCLIFFE, unless alcoholic stimulants are given before the inhalation. Friction along the course of the spine, night and morning, with a liniment

composed of equal parts of chloroform and oil of almonds, is beneficial in some cases.

**Cimicifuga* is highly recommended by many physicians. Prof. A. STILLÉ considers it as one of the most valuable remedies in this disease in pure uncomplicated cases, given in doses of sufficient strength to develop its specific effects. Dr. SYDNEY RINGER, however, finds it only effectual in cases of rheumatic origin, and even in these he prefers arsenic.

**Conium* is very highly lauded by Dr. JOHN HARLEY. He gives the succus in full doses, and asserts that, apart from its effects on the motor centre, conium possesses no direct influence on the circulatory, nutritive or secretory functions, and that its use can be prolonged with safety, it being entirely destitute of any cumulative action.

Cupri Sulphas has been thought useful, but is doubtless of less value than conium, and a number of other remedies.

Cuprum Ammoniatum once enjoyed a high reputation in the purely nervous form of chorea. (F. 18.)

Dracontium. Dr. H. C. Wood, Jr., (*New York Medical Record*, December, 1877,) tested the use of dracontium, or skunk cabbage, in chorea. He used 60 to 90 drop-doses of a tincture of the fresh root three times a day, and had good results.

**Ferri Bromidum* is much used by Prof. DA COSTA.

Ferri Carbonas is often a useful remedy.

Ferri Oxidum Hydratum in large doses, (℥ ss–j increased to ℥ iii–iv, every six hours,) is highly recommended by Drs. ELLIOTSON and WILKS, conjoined with the use of active purgatives. Children readily take ½ drachm doses in treacle.

Ferri et Quiniæ Citras has also been found useful. HAMILTON says digitalis often increases the benefit of iron preparations.

Hyoscyamin in doses of $\frac{1}{60}$ gr., at first twice daily, increased in frequency, is praised by Drs. OULMENT and LAURENT.

Hypophosphites are recommended by DR. RADCLIFFE, combined with cod-liver oil.

**Morrhuæ Oleum* is very favorably spoken of by Drs. F. E. ANSTIE, C. B. RADCLIFFE and THOMAS HILLIER in cases of chorea in scrofulous children or those of spare habit. Dr. RADCLIFFE generally gives the oil in conjunction with hypophosphite of soda (gr. v–viii), making the draught containing the hypophosphite the vehicle for the oil. Sometimes he adds carbonate of ammonia to the solution of the hypophosphite; and sometimes dissolves camphor in the cod-liver oil, thus masking the taste of the oil and making the stomach more tolerant of it.

Moschus has been employed with benefit, but generally fails.

Nux Vomica was employed by ROUGIER in minute doses gradually increased. TROUSSEAU preferred strychniæ sulphas (which see.)

Oleum Terebinthinæ is sometimes given with the view of obtaining its anthelmintic, purgative and stimulant effects.

Opium is tolerated in very large doses, in this disease, but Dr. RADCLIFFE's experience is not favorable to its use.

Phosphorus is favorably reported upon by a number of physicians, as a remedy in this disease.

Physostigma has been used with success by Drs. HARLEY and OGLE. The latter gives:

31. ℞. Pulveris physostigmatis, ℥j.
Alcoholis, f.℥j. M.

Begin with 20 minims, thrice daily, and increase, by 10 minims a dose, to f.℥j.

**Potassii Sulphuretum.* Drs. HILLIER and VON NIEMEYER recommend baths of this salt (F. 24.)

Potassii Bromidum has proved a failure in the hands of Dr. RAMSKILL, but has been favorably reported upon by a number of French physicians.

Potassii Iodidum is considered useful by Dr. HILLIER in cases of chorea occurring in children subject to chronic rheumatism. It is also beneficial in patients tainted by syphilis or scrofula.

Quiniæ Sulphas has been employed in some cases with advantage.

**Santonin* proves often valuable, by disclosing the unsuspected cause of the choreic movements, viz., worms.

Sodii Arsenias is useful in those cases in which other arsenical preparations are badly borne.

Sodii Salicylas has been found of some value by Dr. S. WEIR MITCHELL; and it has been well spoken of by Dr. DRESCH. (*Bull. Gen. de Ther.*, 1879.)

Stanni Chloridum has been employed in doses of gr. $\frac{1}{6}$ to $\frac{1}{4}$ three times a day in pill, or dissolved in hydrochloric ether. If it increases the symptoms at first, this is regarded as a good omen. If it be followed by gastro-intestinal irritation or dryness of the throat, it must be stopped or the dose lessened.

Strychniæ Sulphas is recommended by TROUSSEAU. Its effects should be carefully watched, and its administration confined to obstinate chronic cases.

Valeriana is recommended by some writers.

Zinci Oxidum is generally considered inferior to the sulphate of zinc.

**Zinci Sulphas* is very highly recommended by some physicians, (BARLOW, GOLDING BIRD and WEST,) but in the hands of others, (STONE, HILLIER, etc.,) it has not fulfilled expectations. Some authorities say that it only does good up to a given time, which is shown by the patient's complexion assuming a bright and clear color; also, that when this point is reached, the zinc not only becomes injurious, but if continued, marked anæmia shows itself. Should this state of things happen, iron combined with the zinc sometimes does good; as a rule, however, iron and quinine act much better.

According to BRISTOW, the rule to be followed in giving sulphate of zinc, is to begin with doses of a grain or two three times a day, which are slowly increased by successive increments until from 20 to 40 grains are given at a time. In the less acute type, valerianate of zinc will be found of especial use, particularly when the attack has with it some of the characteristics of hysteria. TROUSSEAU says: "Zinc does best with florid, and iron with pallid children."

EXTERNAL REMEDIES.

Baths. Simple cold baths and affusions are always of service. An excellent auxiliary is the salt-bath. In anæmia, sulphur-baths are beneficial.

Electricity is principally used in cases dependent upon deranged catamenial function. Dr. GOLDING BIRD recommends it in the form of sparks taken in the course of the spinal column, every alternate day, for about five minutes at each time. Dr. HAMMOND states he has used both the primary galvanic and induced currents in many cases, but he is of opinion that they are inefficacious, except in that form where there is distinct paralysis.

Ether-Spray. The application of atomized ether along the spine has proved of service in relieving the spasms, especially in recent cases and those originating in fright. It is said also to be of benefit in chronic cases and in rheumatic chorea.

Hygienic Measures. Fresh air, change of scene, regulated movements, good food, and friction to the spine, are of the utmost importance in all cases. Gymnastics are especially recommended in the milder forms of chorea, and during convalescence in the severer cases. Drs. E. B. GRAY and H. M. TUCKWELL have published large numbers of cases (*Lancet*, November, 1876,) to show that the hygienic plan alone is sufficient to cure chorea, and quite as promptly as by any drug. They trust to judicious nursing and good diet, and merely give a placebo of sugared water. As early as 1871, they showed that the average duration of chorea treated on the expectant plan was, as far as their observations had then gone, from ten to eleven weeks; and that the average duration of chorea treated with arsenic in gradually increasing doses, according to BEGBIE'S plan, was likewise from ten to eleven weeks; the difference, if any, being slightly in favor of the expectant plan. They also compared these results with the estimate of Dr. HILLIER, who, in his work on *Diseases of Children*, gives the mean duration of thirty cases treated with arsenic, etc., as "about ten weeks;" and with SÉE'S estimate of "sixty-nine days," as the average duration of one hundred and seventeen cases treated with various medicines. An isolated ward; a good nurse; a large crib, well padded round, and walled in with pillows; plenty of nutritious food, without stimulants—on these they feel inclined to rely in the treatment of severe chorea, till we obtain more conclusive evidence than has yet been adduced that the disease can, in the slightest degree, be favorably influenced by any medicine as yet discovered.

Inhalations of chloroform arrest the convulsive movements so long as the patient is under their influence, but the progress of the disease is not checked by their administration, and they can only be regarded as palliatives in severe cases.

EPILEPSY.

The most positive advance in recent years, is in the judicious employment of the *bromides*. We give the latest expressions of the most eminent authorities on their administration.

PROF. C. E. BROWN-SÉQUARD, M. D., PARIS.

The formula which this distinguished neurologist recommends in idiopathic epilepsy, is:

32. ℞. Potassii iodidi,
Potassii bromidi, āā ℥j.
Ammonii bromidi, ℥ss.
Potassii bicarbonatis, ʒ ij.
Infusi columbæ, f.℥ vj. M.

A teaspoonful before each of the three meals, and three tablespoonfuls at bedtime, with a little water.

When the patient's pulse is weak, substitute for the bicarbonate of potassium in the above formula, the carbonate of ammonium, and for the six ounces of infusion of columbo, an ounce and a half of the tincture of that medicine, with four ounces and a half of distilled water.

Of this he says: "This combination of the three bromides I have found has considerable more power in controlling epilepsy than the use of one alone or of two combined. If you employ the bromide of potassium, you must employ with it the bromide of ammonium and the iodide of potassium or ammonium. A combination of these three salts acts with far greater power than when either one is used alone. It is essential always to add the bromide of ammonium if the other bromides are employed. In these cases, it is also essential to employ some means of counter-irritation at the base of the brain; or, in cases of distinct aura, some means of counter-irritation at the place where the aura starts. In those cases in which the aura starts in the finger, I have succeeded most wonderfully in controlling the attack by the application of a circular blister, in the shape of a ligature, to the finger itself."

He also adds the following very important *rules relative to the treatment of epilepsy by the bromide of potassium and ammonium*, employed together or separately.

1. That the occurrence during the day of the sleepiness caused by these remedies can be avoided by giving relatively small doses in the daytime and a much larger dose late in the evening.

2. That the quantity of these medicines to be taken each day must be large enough to produce an evident though not complete anæsthesia of the fauces and upper parts of the pharynx and larynx; that daily quantity being from 45 to 80 grains of the bromide of potassium, and from 28 to 45 grains of the bromide of ammonium, when only one of these salts is employed, and a smaller quantity of each, but especially of the second, when they are given together.

3. That an acne-like eruption on the face, neck, shoulders, etc., should be produced, and it is most important to increase the dose when there is no eruption, and also when the eruption is disappearing, unless the dose already given in the twenty-four hours is so large that any increase of it causes great sleepiness in the daytime, a decided lack of will and of mental activity, dullness of the senses, drooping of the head, considerable weakness of the body, and a somewhat tottering gait.

4. That it is never safe for a patient taking either of the bromides or both, and receiving benefit therefrom, to be even one day without his medicine, so long as he has not been at least fifteen or sixteen months quite free from attacks.

5. That the debilitating effect of the bromides in patients already weak, as are most epileptics, ought to be prevented or lessened by the use of strychnia, arsenic, the oxide of silver, ammonia, or cod-liver oil, cold douches or shower baths, and, of course, wine and a most nourishing diet. In making use of strychnia or arsenic, it must be kept in mind that not only the bad influences of the bromides, but also their favorable influence against epilepsy, can be diminished by these powerful agents (especially strychnia,) and that it is therefore necessary, when these agents are used, to increase the dose of the bromides.

6. That *iron* and *quinine*—which are generally injurious to epileptics, except in cases in which the nervous affection is caused, or at least aggravated by chlorosis, anæmia, or malarial cachexia—are more particularly injurious in cases in which the bromides are taken.

7. That a gentle purge every five or six weeks usually gives a new impulse to the usefulness of the bromides against epilepsy.

DR. E. C. SEGUIN, OF NEW YORK.

Dr. SEGUIN's method of prescribing the bromides in the treatment of a case of "idiopathic" epilepsy is the following:

Two solutions are employed.

33. ℞. Potassii bromidi, ℥ j.
Ammonii bromidi, ℥ ss.
Aquæ fontanæ, ℥ vij. M.
S. To be given by the teaspoonful.

And,

34. ℞. Sodii bromidi, ℥ j.
Ammonii bromidi, ℥ ss.
Aquæ font., ℥ vij. M.
S. To be given by the teaspoonful.

The quantity administered is, as a rule, so divided as to give by far the largest dose in the evening. The bromide is cautiously increased, still keeping the nocturnal dose the largest, until slight bromism is produced. It is usually necessary to maintain slight bromism for months, but just as little is to be given as will prevent the attacks. The precise quantity required must be studied in each case. Children tolerate the bromides, as well as the iodides, in relatively large doses. It is regarded as important, thoroughly to dilute the bromides in order to facilitate their absorption—the dose to be taken in a wineglassful or half a tumblerful of water. Under no circumstances should the bromides be discontinued; they may be *diminished*, but not *stopped* until the word *cure* can be pronounced. They should be continued at least three years after the last attack.

The adjunct treatment consisted in the use of measures to prevent the acne to a certain extent, such as the occasional use of arsenic, sulphur-ointment, mercurial plaster, and alkaline lotions; to correct the general debility or slight paresis, by the use of strychnia, nux vomica, oxide of zinc and quinia; to relieve the dizziness by the inhalation of nitrite of amyl, by stimulants and by quinia; regulating the patient's diet and hygiene, and the use of cream, cod-liver oil, iron, quinine, phosphorus, strychnia, with nitro-muriatic acid, wine, beer, or whisky. In certain cases such medicines as act more directly upon the morbid state of the nervous centres are associated with the bromides, and the favorite among these is belladonna. In the treatment of cases of epilepsy in which a definite causative lesion can be made out, the bromides are used simply to combat the habit.

Regarding the method of using the bromine salts in the treatment of epilepsy and other neuroses, he makes the following remarks:

1. The prolonged use of bromides is contra-indicated by congenital feebleness.

2. The bromides are well borne by persons of fairly full habit and good nervous power.

3. The bromides are indicated in cases of abnormally great irritability of the nervous system in its motor (muscular and vasomotor) and ideational tracts.

4. The contra-indications above named are to be much less regarded in the management of that formidable neurosis, epilepsy.

5. Epilepsy is the only disease which justifies the deliberate production of a degree of bromism for its cure.

From extensive and very elaborately conducted experiments, to determine the precise effects of bromide of potassium in epilepsy and its proper dose, Dr. T. S. CLOUSTON, of Edinburgh, has found that the diminution of the fits, and all the other good effects of the medicine, reach their maximum in adults at 30-grain doses thrice daily; while ill effects are manifested when 35-grain doses thrice daily are reached.

In regard to the other bromides, Dr. ERLENMEYER (*Correspondenz-Blatt*, 1877,) has experimented with *bromide of lithium*, recommended by Dr. LEVI, of Paris, on account of having no action on the heart. From his own experiments, he is disposed to believe that it is inferior to bromide of potassium as a remedy against epilepsy. He has also tried *bromide of quinine*, and found it had a more hypnotic action than bromide of potassium; he finds it useful in treating periodic fits of insanity and hypochondria, but is not inclined, on the whole, to give it the preference to the more commonly used drug in epilepsy.

In combination with the bromides, *atropia* has been favorably mentioned by Dr. L. P. YANDELL, Jr., of Louisville.

35. ℞. Potassii bromidi, gr. xv.
Atropiæ sulphatis, gr. $\frac{1}{60}$.
Aquæ, q. s. M.
For one dose, three times a day.

It is said to act more promptly than the bromide alone. (*Medical and Surgical Reporter*, May 11th, 1878.) Atropia has been used successfully alone by Dr. SVETLIN, of Vienna, and later by Dr. LEIDESDORF. The latter found it to act beneficially if given to the extent of $\frac{1}{70}$ grain of the sulphate daily. The trial was made in consequence of the accepted fact that small doses diminish the action of the reflex nerve-centres, while large doses produce an opposite effect. Cases of motor epilepsy of not long standing recovered rapidly, and some old

cases, complicated with mental derangement, also got well while taking the drug. In other cases the attacks were rendered less frequent. The observation was confirmed by experiments on animals. (*Medical Examiner*, No. 34, 1877.)

BROWN-SÉQUARD recommends

36. ℞. Morphiæ sulphatis, gr. ¼.
Atropiæ sulphatis, gr. $\frac{1}{60}$. M.

For one *hypodermic injection*, in a few minims of distilled water. He succeeded in a case of epilepsy by the use of this injection alone.

A combination of the bromides with *chloral hydrate* has been used with advantage by Dr. J. C. SHAW, of Brooklyn, and various New York physicians. The usual formula is:

37. ℞. Potassii bromidi, ℥j.
Chloral hydratis, ℥ss.
Aquæ, f.℥vij. M.

Four to six teaspoonfuls a day.

This seems to bring about the good—*i. e.*, antispasmodic—action of the bromide without so much cutaneous eruption, general physical deterioration, and mental depression, as we too often see during the ordinary treatment of chronic cases of epilepsy.

With reference to these untoward constitutional effects,

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK,

Enumerates them as follows, in the usual order of their occurrence: 1. Contraction of the pupils. 2. Drowsiness. 3. Weakness of the arms and legs. 4. Depression of mind. 5. Failure of memory. 6. Delusions. The first three of these are the usual accompaniments of a dose of the medicine capable of producing any influence over epilepsy. In adults they never follow less doses than 10 grains. Doses of 5 grains produce no effect. The ordinary dose of either one of the bromides—of potassium, sodium or calcium—is gr. xv three times a day, in solution. After two months, this must be increased by one-half, and more if paroxysms have intervened.

Dr. H. has used the *bromide of zinc* with very beneficial results. His formula is:

38. ℞. Zinci bromidi, ℥j.
Syrupi simplicis, f.℥j. M.

Ten drops three times a day, gradually increased to thirty or more, largely diluted with water.

There is no danger of bromism in using this agent, and it exerts a positive curative influence.

In the nocturnal form of epilepsy, *strychnia* is sometimes remarkably efficacious. A good formula for its administration is:

39. ℞. Stychniæ sulphatis, gr. ij.
Aquæ destillatæ, f.℥j. M.

Dose, eight drops three times a day for the first two weeks, then nine drops for the next two weeks, increasing thus a drop every two weeks for a year, and perhaps longer.

In cases produced by gastric derangement, this will also be found a useful treatment.

The *nitrite of amyl* acts well as inhibiting the paroxysms and preventing individual convulsions, but as a curative agent, exerts no power.

Epileptiform seizures due to syphilitic infection, require the iodide of potassium.

Of surgical measures, the excision of any cicatrix which, by entangling a nerve, may be the source of reflex irritation, is occasionally a useful measure. In epilepsy following injuries of the skull, trephining often relieves. A seton, or the actual cautery to the nape of the neck, has at times proved decidedly beneficial.

The hygienic treatment is important. Moderate exercise in the open air, nutritive and easily-digested food, fresh air, etc., should be insisted upon. Causes of eccentric irritation, as intestinal worms, disordered menstruation, and local irritations, must be removed.

The *alkaloids of nux vomica* appear to have a well-merited reputation in this disease. Thus:

WALTER TYRRELL, M. D., LONDON,

States that he has watched the effects of *strychnia* upon various forms of epilepsy, and has no hesitation in affirming that in a large majority of cases, its effects are most beneficial. He found but three cases in which it produced no favorable result, and no cases in which it produced an unfavorable effect. He gives a medium quantity as a dose, for a lengthened period, rather than carrying the dose too high at first. The best results are obtained from gr. $^1/_{10}$ to gr. $^1/_{18}$, twice a day, in solution, the system appearing to regain its nervous strength under the continued use of the medicine.

The following was a favorite prescription with the late

MARSHALL HALL, M. D., LONDON:

40. ℞.	Strychniæ acetatis,	gr. j.	
	Acidi acetici,	♏xx.	
	Alcoholis,	f.℥ ij.	
	Aquæ destillatæ,	f℥ vj.	M.

Ten drops (gr. $\frac{1}{50}$) to be taken in water thrice daily.

Another alkaloid, *brucia*, has beeen tried by

J. SPENCE RAMSKILL, M. D., LONDON.

41. ℞.	Bruciæ,	gr. iv.	
	Alcoholis,	f.℥ ij.	
	Aquæ destillatæ.	f.℥ vj.	M.

Ten minims to be taken, diluted with water, twice daily; every third day, an addition of five minims should be made to the dose, until from a third to a half grain is reached, in the treatment of stomachal epilepsy.

If any stiffness of the jaws or other toxic symptoms appear, the dose is to be diminished five minims, and continued until any new objectionable symptom is manifested; then it is again lessened. No benefit will be derived until a full dose is reached; often the reverse effect. (*London Lancet*, January 16th, 1869.) As a rule, patients will take twice as much brucia as strychnia, without any necessity for diminishing the dose. After the continuous administration of brucia for a month, it is well to suspend its use for some days, and then again resume it. Great satisfaction will be obtained by giving the bromide of potassium in large doses, at bedtime, and at the same time ordering brucia twice daily, thus insuring the sedative influence of the bromide and the tonic effect of the brucia on the whole nervous system.

DR. ALLEN M'LANE, HAMILTON, NEW YORK.

In regard to the bromides, this writer prefers the sodic bromide, administered on an empty stomach, to the extent of ℥ j in the twenty-four hours. He has observed that a heavy dose at night is apt to do more good than if the amount prescribed is equally divided up through the day. In a great many patients the attacks occur at the waking hour, probably owing to the sudden change in the cerebral circulation. A mild diffusive stimulant has overcome this, and in many cases warded off the attack. He directs his patients who have their convulsions at this time to keep a glass of sherry, or a small quantity of spts. ammoniæ aromaticus near at hand, to be taken before rising. Cold douches to the head are valuable. If the attacks be irregular, it will be found necessary to divide up the dose.

Belladonna and its alkaloids are of great value when the seizures occur in the daytime, or are of the variety known as *petit mal*. He has injected the sulphate of atropia, in $^1/_{64}$ gr. doses, beneath the skin at the back of the neck with good effect. It should be administered until dryness of the throat is obtained, and should be given a patient trial. A remedy of his own suggesting is *nitro-glycerine*. He says it is as powerful a medicinal agent as it is an explosive, $^1/_{10}$ of a drop producing a rapid cerebral hyperæmia. It is safer than amyl nitrite, and produces a more lasting congestion, and acts better as an abortant of the attack.

42. ℞. Nitro-glycerinæ, gtt. v.
Alcoholis, f.℥j. M.

Ten drops of this contain about $^1/_{10}$ of a drop of nitro-glycerine, which amount is the proper dose. Mixed with alcohol it is non-explosive.

Dr. HAMILTON has found a combination of the various anti-epileptic remedies to act better than any one singly, and for many years has derived much satisfaction from the following formula:

43. ℞. Strychniæ sulphatis, gr. j.
Fl. ext. ergotæ, ℥ iss.
Sol. potass. arsenitis, ℥ ij.
Sodii bromidi, ℥ iss.
Tr. digitalis, ℥ iij.
Aquam menth. pip., ad ℥ iv.
M. S. A teaspoonful before eating, in a half tumblerful of water.

If the attacks be of the form known as *petit mal*, he thinks either *ergot* or *belladonna* are our best agents. With either form of treatment it may be found often necessary to use auxiliary general treatment. The syrup of the combined phosphates, or the syrup of the lacto-phosphate of lime, is a good adjunct; and salt baths, cold head douches, regular food, early hours, and the breaking off of bad habits, will often cure the disease, even when it has lasted for many years.

As a last resort, should continued medication prove useless, the *actual cautery* or a deep *seton* at the back of the neck, will occasionally arrest these bad cases.

The *oxide of zinc* is an old and standard remedy. From recent trials, Dr. AUGUSTE VOISIN states that though it acts more slowly than the bromide of potassium, its effects are more certain; and, after having used both these two medicines for more than twenty years, he

habitually gives the preference to the oxide of zinc, used after the method of HERPEN, of Geneva, that is, commencing with small doses, gr. ij–iij, combined with valerian, thrice daily, and slowly increasing them to the maximum, gr. xv, thrice daily, and continuing for a long period, three to six months. The same high opinion of the zinc is expressed by

J. WARING CURRAN, M. D., DUBLIN.

44. ℞.	Zinci oxidi,	gr. ijss.	
	Extracti glycyrrhizæ,	q. s.	M.

For one pill. One or two thrice daily.

This, together with the bromide of potassium in mixture, forms, he believes, a method of treatment not to be equaled in epilepsy, when assisted by the occasional application of *Chapman's spinal ice-bag*. Neither remedy succeeds so well alone; the one is essential to the other.

EDWARD C. SPITZKA, OF NEW YORK.

This neurologist has found *ergot* and *conium* valuable drugs in epilepsy, (*Physician and Pharmacist*, August, 1879.)

45. ℞.	Extr. ergotæ fluidi,	ʒ ss–j.	
	Extr. conii fluidi,	gtt. v.	M.

This for a dose, three times daily.

Respecting ergot, his theory of its action is that in small and frequently repeated doses it reduces the overtone of the vaso-motor centre by repeated excitation, and thus strikes at the root of the disease. Conium, he has found, experimentally, to be one of the most reliable cerebral sedatives in the market, and whose protracted administration is followed by no bad results. Although, as a matter of routine, he has given both drugs together, he should formulate their indications differently. When acts of violence replace the convulsive attack, conium will produce the desired effect, while ergot, the bromides and all other drugs will fail. He has found that in convulsions due to cortical disease, as *remollissement rouge*, abscess and tumor, the same drug, in combination with bromides, exerts the best influence. On *petit mal*, vertigo and the epileptic attack as such, ergot alone exercises an immediate effect, and herein ranks far above the bromides. For some of the epileptic phenomena, as headache, the bromides are useful, but as to the influencing of epilepsy *per se*, the weight of

authority seems to be favorable to the view that they do very little good and much harm.

Ergot has this advantage, shared by conium, that its use may be commenced and abandoned with suddenness without precipitating an epileptic explosion, as the sudden interruption of the bromide administration is sure to do.

INHALATIONS.

GEORGE JOHNSON, M. D., *King's College Hospital, London*, speaks in high terms of *chloroform* in connection with bromide of potassium in this affection. He thinks that the action of chloroform inhalation in warding off a threatened fit and in cutting short a violent and prolonged paroxysm, is as uniform and certain as the action of anæmia in exciting convulsions.

THOMAS HAWKES TANNER, M. D., London, has also used the vapor of chloroform, and believes that the fits have diminished, both in severity and numbers, from its employment.

The same has been said of the use of inhalations of *amyl nitrite*. It is considered by Dr. CRICHTON BROWNE to be invaluable in many cases, in not only postponing, but in altogether preventing epileptic seizures. A vinaigrette, or small-stoppered bottle, containing a sponge soaked in nitrite of amyl, should be carried in the pocket, and the fumes inhaled on the first symptoms of the aura. Even in the advanced stage of the *status epilepticus*, Dr. B. believes its inhalation very beneficial in most cases. (*West Riding Lunatic Asylum Reports*, 1873.)

MECHANICAL AND PHYSICAL MEANS.

Dr. BROWN-SÉQUARD has found:

1. That it is not necessary to apply an irritation (by a ligature, pinching, etc.,) on the very limb from which an aura seems to start, as the same means applied elsewhere may succeed; but the chance of success is much greater by the former than by the latter way.

2. That a constant or a frequent irritation (by a blister, an issue, a seton, the actual cautery, etc.,) on the place from which an aura seems to start, may not only prevent fits, but, by some change of nutrition locally (if the aura is really of peripheric origin), and in the nervous centres, may reduce, or even destroy altogether, the tendency to fits, and lead to a complete cure.

3. That as a circular ligature may procure a temporary good effect, so a narrow *circular blister* applied all around a limb, a toe or a finger,

or a circular cauterization with a white-hot iron, may cure epilepsy in cases with a distinct aura.

4. That even in cases in which there is no aura, felt or unfelt, ligatures, pinching, and other means of irritation, may prevent the occurring of expected fits.

When an attack of epilepsy is followed by a comatose state, or even a sleep with heavy breathing, it is of the greatest importance to place the head of the patient in such a position that the tongue, which is then paralyzed, will not fall on the larynx and cover its aperture.

DR. SCHMITT, GERMANY.

46. ℞. Tincturæ iodinii, gtt. xv.
Aquæ menthæ piperitæ,
Aquæ destillatæ, āā f.℥ij.
Syrupi, f.℥j. M.

A tablespoonful every two hours, to prevent the return of an attack.

47. ℞. Tincturæ iodinii, f.℥j.
Alcoholis diluti, f.℥ss.
Spiritûs calami, gtt. j. M.

Five drops every two or three hours, in sweetened water, to prevent a return of an attack.

PROF. J. M. DA COSTA, M. D. PHILADELPHIA.

48. ℞. Zinci valerianatis, gr. iij.
Extracti belladonnæ, gr. ⅓.
Pulveris digitalis, gr. ¼. M.

For one pill. To be taken thrice daily in cases of epilepsy, associated with irregularity of the heart.

HOSPITAL OF DISEASES OF THE CHEST, LONDON.

49. ℞. Potassii bromidi, gr. x.
Tincturæ conii, ♏xxx.
Tincturæ valerianæ ammoniatæ, ♏x.
Aquæ camphoræ, f.℥j. M.

For one dose, thrice daily.

HOSPITAL OF UNIVERSITY COLLEGE, LONDON.

50. ℞. Potassii bromidi, gr. x.
Spiritûs chloroformi, ♏xviij.
Infusi quassiæ, f.℥j. M.

For one dose, thrice daily.

RÉSUMÉ OF REMEDIES.

Acidum Hydrobromicum. Dr. W. C. Wade (*Detroit Medical Journal*, December, 1877, gives the following prescription:

51. ℞. Stramonii extract. fluidi, gtt. 160.
Acidi hydrobromici diluti,
Syrupi, āā f.℥j. M.

One-half teaspoonful in water, the dose to be increased until the specific effects of the stramonium are marked, and there to be maintained. He adds: "I will simply say of this combination, that its effects in this disease are remarkable, and I think I have reason to consider it superior to any other plan of medication."

Ammonii Bromidum is often prescribed in epilepsy alone, or in combination with bromide of potassium. (F. 33.)

Ammonii Carbonas is a valuable palliative, though possessed of no curative influence in this disease. Dr. ANSTIE and others assert that, if there be time to administer a dose previous to an impending attack, it will often avert it. PEREIRA recommends it in large doses (gr. x–xx), in the hysterical form of the disease.

Ammonii Formias has been found of service in some forms of epilepsy, hurtful in others. Dr. RAMSKILL advises a further trial of this remedy.

Ammoniæ Aqua is recommended by Dr. HOPE and others, in epileptic congestion of the brain, arising from debility. The following formula is the most efficacious:

52. ℞. Aquæ ammoniæ, ♏xij.
Aquæ menthæ viridis, f.℥iss. M.

For one dose. If taken at the first warning of an attack of this character, it seldom fails to arrest its supervention. The inhalation of ammoniacal vapor immediately after the first warning of an attack, is recommended by PEREIRA, PINEL and others, as often averting its occurrence.

Ammonii Valerianas, although very deliquescent, and therefore uncertain in its operation, is favorably reported upon by a number of writers as a remedy in epilepsy.

Amyl Nitrite. See Nitrite of Amyl.

Anilin is recommended by Drs. TURNBULL and ANSTIE. The latter finds that large doses aggravate the fits, but that one grain thrice daily, with an additional grain on the occurrence of any prodromata of a fit, delays or mitigates the paroxysm, or even averts it for a considerable time.

Argenti Nitras is no longer given in prolonged courses, at the risk of the patient's turning blue, a fate so frequently reserved for epileptics in former times. Other remedies of equal or greater efficacy, and less danger, have now, to a great extent, displaced it.

Arseniosum Acidum is employed in epilepsy, but it is much less effective in this disease than in chorea. Dr. RADCLIFFE employs it hypodermically and endermically, in the same manner as for chorea, (which see.)

Arsenici Bromidum. Dr. CLEMENS, of Frankfort-on-the-Main, has employed for a number of years a *liquor arsenici bromidi*, as follows:

53. ℞. Pulv. arsenici albi,
Potassæ carbonatis, āā ℥j.
Aquæ destillatæ, Oss.
Boil and add,
Aquam, ad f.℥xij.
Brominii, f.℥ij.

After cooling and filtration, it should be a colorless liquid. Dose, one or two drops in a glass of water once or twice daily. This dose need not be increased. All his cases have been decidedly improved by this, but he claims only two complete cures in fifteen years.

Assafœtida is recommended by Dr. POLLOCK, (*Lancet*, August 21st, 1869,) as capable of giving satisfactory results in the following combination:

54. ℞. Tincturæ assafœtidæ, ♏xxx.
Ammoniæ carbonatis, grs. iij. M.

For one dose, to be repeated thrice daily. In cases of epileptic seizures, due to the presence of worms in the alimentary canal, assafœtida is a useful agent.

Atropia. See above, (p. 40.)

Belladonna, though praised by TROUSSEAU, WILKS and HARLEY, (particularly in cases arising from emotional excitement, when it should be combined with zinc,) is superseded in practice by atropia.

Bismuthi Subnitras has been employed by Dr. COPLAND (the bowels being kept freely open) alone and in combination with tonics and antispasmodics, with good results.

Brucia. (See F. 41.)

Camphora seems to be useful in cases associated with hysteria or uterine disorders. It should be given in combination with tonics and antispasmodics. The *mono-bromide* is a desirable form.

Cannabis Indica has recently had testimony advanced in its favor by Dr. WHARTON SINKLER. (*Philadelphia Medical Times*, October, 1878.) FLINT doubts its value.

Castoreum is a very old remedy in this disease, having been recommended by CELSUS.

Centaurea Benedicta. Dr. J. G. WESTMORELAND (*Acology and Therapeutics*, p. 320,) observes that the "blessed thistle" has proved a useful remedy in epilepsy. A decoction of the leaves is used, ʒj to water Oj, the dose being ℥ iij–iv, daily.

Cerii Oxalas is recommended by Prof. SIMPSON.

Chloral is valuable in combination. (F. 41.)

**Chloroformum.* Chloroform inhalations are recommended (p. 46,) both during the paroxysm and in the interval. Dr. BROWN-SÉQUARD considers this method of treatment particularly valuable in cases partaking of a hysterical character.

Cinchona is rarely successful in true epilepsy, but of great benefit in the epileptiform paroxysms of intermittent fever.

Conium has been found by Dr. HARLEY to cause rapid and decided improvement in epilepsy arising from sexual abuse, or from the irritation of dentition, but in that arising from peripheral disorder of sensation, from menstrual irregularity, or from emotion, it fails to exercise any beneficial influence.

Cupri Sulphas Ammoniatum produces positive benefit, according to AUGUSTE VOISIN.

Curare has been recommended by C. F. KUNZE, as follows:

55. ℞. Curaræ, gr. vijss.
Aquæ destil., ♏lxxv.
Acid. hydrochlor., ♏vij.
For hypodermic injection, eight drops every five or six days.

Ergota is used by Dr. SPITZKA. (See p. 45.)

Hydrargyri Iodidum Rubrum has been recommended by Dr. FULLER (*Medical Times*, February 14th, 1857,) in cases where there is reason to suppose thickening of the dura mater.

Hyoscyamus in occasional full doses (f.ʒiv–viij of the succus, or f.ʒiv–viij of the tincture,) has been found by Dr. HARLEY very serviceable in epilepsy arising from emotional disturbances, but in other varieties of this disease it has proved useless in his hands.

Moschus is sometimes useful. Dr. A. T. THOMSON says that it diminishes the violence of the paroxysms of idiopathic epilepsy, and greatly lengthens the intervals, when administered as follows:

56. ℞. Moschi, ʒj.
In a bolus for one dose, every eight hours.

Nitrite of Amyl by inhalation, has been found eminently useful by Dr. S. WEIR MITCHELL and others. (P. 46.)

Nux Vomica. In epilepsy following the disappearance of the menstrual discharge, COPLAND recommends nux vomica combined as follows:

57. ℞. Extracti nucis vomicæ. gr. x.
Pilulæ aloes cum myrrha, ʒij. M.
For thirty-six pills. From one to two, night and morning. Its employment demands caution.

Opium is now rarely employed, since the discovery of the value of bromide of potassium, in this affection.

Oxygen Inhalations are recommended by Dr. RAMSKILL. (*Medical Times*, July 4th, 1863.) On the accession of giddiness, or other uncomfortable symptoms, they should be stopped.

Phosphoruus is regarded by Dr. ANSTIE as well worthy of further trial in this disease, as it improves the patient's general health and relieves the sense of languor and depression.

***Potassii Bromidum* is the remedy *par excellence* in epilepsy. See opinions already given of Drs. BROWN-SÉQUARD, CLOUSTON, HAMMOND, etc. It cures in very many cases, and rarely fails to diminish the number of attacks.

Quiniæ Sulphas is sometimes prescribed. Prof. LUDWIG MEYER, of the Berlin Charité Hospital, has long recommended a full dose of quinine, gr. xx–xxiv, at the first symptoms of the aura. In some instances, he has succeeded in obtaining a permanent cure by continuing this treatment. Dr. NOTHNAGEL has witnessed the same favorable result from a large dose of common salt. (*Allgemeine Medicinische Central Zeitung*, November 19th, 1876.)

Santonin is of service when the epilepsy is due to the presence of worms in the alimentary canal.

Sinapis is a useful emetic in epilepsy for over-distention of the stomach.

Sodii Chloridum. See under *Quiniæ sulphas.*

Stanni Chloridum has been employed in doses of gr. $\frac{1}{6}$ to $\frac{1}{4}$ thrice daily, in pill, or dissolved in hydrochloric ether.

Strychnia is strongly recommended by WALTER TYRRELL, and in the threatenings of epilepsy, by MARSHALL HALL.

Tabacum is supposed to have a curative influence in epilepsy produced by onanism, as the use of tobacco allays sexual lust.

Terebinthinæ Oleum, though little used in epilepsy, is strongly recommended by Sir THOMAS WATSON, who states that if he were called upon to name any single drug from which, in ordinary cases, he should hope for relief, he should mention turpentine; and by Dr. HEADLAND, who prescribes it as follows:

58. ℞. Olei terebinthinæ, f. ʒss.
Thrice daily in capsule or emulsion.

59. ℞. Olei terebinthinæ,
Olei ricini, āā f. ʒiij. M.
For one dose at occasional intervals.

Valeriana is highly praised as a remedy for epilepsy, by BRISBANE, FOTHERGILL, HALLER, WILLIS, and others, but regarded as of little value by CULLEN, HEBERDEN, and HOME.

Veratrum Viride has been found by Dr. E. F. MORDOUGH, of New York, to diminish the severity and frequency of the convulsions. His prescription is:

60. ℞. Morph. sulph., gr. iss.
Tinct. verat. virid.,
Aquæ, āā f. ℥ss. M.
Twenty minims hypodermically during or before a convulsion.
(*New York Medical Record*, September, 1878.)

Zinci Lactas was first recommended in epilepsy by Dr. HERPIN, (*Bull. Gén. de Thérap.*, November, 1876,) who regards it as of equal medicinal value with the oxide, and superior to it in taste and tolerance. He gives it, at first, in 2-grain doses, in pill, thrice daily, and gradually increases the quantity until 10 grains are taken during the day.

**Zinci Oxidum* is regarded by Dr. RUSSELL REYNOLDS as superior to the sulphate of zinc, in epilepsy. He gives it in doses of grs. iii–v, thrice daily. Dr. WARING CURRAN strongly urges it as an adjunct to bromide of potassium. (See further, p. 45.)

Zinci Sulphas is a long-used remedy in epilepsy, of occasional value.

Zinci Valerianas is considered by many as the best salt of zinc in epilepsy. It is specially valuable in cases of a hysterical character. The dose should be small at first, one grain, gradually increased as the stomach will bear it. Dr. DA COSTA sometimes prescribes it with belladonna and digitalis. (F. 48.)

Emetics, given when an atack is imminent, will often, according to Dr. MARSHALL HALL, ward it off.

Stimulants. A draught of wine or of some diffusible stimulant may put off an attack.

EXTERNAL REMEDIES.

Cold Shower Baths are useful in epilepsy when the patient is not too timid nor too much excited by them. Methodical hydropathic treatment often benefits, but, according to NOTHNAGEL, is never sufficient alone to effect a cure.

Turkish Baths are sometimes employed, but great caution is required in the use of so powerful an agent.

**Blisters.* A narrow circular blister applied above or at the starting point of the aura will sometimes prevent or modify a paroxysm.

Dry Cupping, sometimes, according to Dr. GRAVES, averts a paroxysm of epilepsy where previous headache or other premonitory symptoms advertise its approach.

Electricity has given unsatisfactory results in epilepsy. Dr. COPLAND says that "the safest method of employing electricity is to place the patient on the insulating stool and subject him to the electric bath, and to draw sparks from different parts, when thus insulated and placed in connection with the prime conductor."

Forcible Extension of the muscles where the aura is seated, or the application of pressure between the starting point of the aura and the trunk, may avert an attack. BROWN-SÉQUARD has stated that forcible extension of the *great toe* will arrest an attack, as he has verified in many cases.

Hypodermic Injections. Atropia, subcutaneously, in this disease, was proposed by BROWN-SÉQUARD, combined with morphia. (F. 36.) Prof. BARTHOLOW has also employed this combination. **Morphia* alone, or in combination with atropia, has been found, when injected hypodermically, not only to relieve quickly the paroxysms in violent cases, but to afford permanent benefit by diminishing the number, frequency and severity of succeeding attacks, and, therefore, to dispute with the bromide of potassium for the foremost position among the remedies against epilepsy. As one may succeed when the other fails, Prof. BARTHOLOW points out that bromide of potassium is most effective in cases of *grand mal,* in which the paroxysms occur frequently, with great violence, and during the daytime, and less effective in those which occur chiefly at night; while the hypodermic injection of morphia is preferable in epilepsy, the paroxysms of which occur at night, in the *petit mal,* and in convulsive tic, but not proper, as a general rule, in cases of epileptoid character dependent upon cerebral lesion. Prof. B. advises, when the paroxysms succeed each other rapidly, and are violent, that the injection be made during an attack, and without loss of time, but states that ordinarily two or three times a week will suffice, (dose, gr. $\frac{1}{4}$,) the onset of an expected attack being anticipated whenever practicable.

The Actual Cautery. This is a most valuable resource in epilepsy. BROWN-SÉQUARD'S rules are as follows: 1. The instrument has to be heated to whiteness. 2. It must be shaped like an olive, (blunt end.) 3. It must not be allowed to burn the skin, but is passed rapidly along the space to be acted upon, so that after the operation is over nothing is seen but a *white line,* very much resembling a scratch with a finger nail. So applied, it is never painful. It can be repeated every other day, as there are no scars and no irritation left. The necessity for observing these rules is obvious, as the object of the opera-

tion is to act on the terminations of nerve-fibres in the skin, but not to destroy them; hence it is clear that the method of first applying ether-spray on the spot to be cauterized, so as to deaden the pain of the cautery, mars the good effects of the application of the instrument, because the ether-spray is itself *more painful* than the actual cautery, when the latter is used after the manner above stated; and, moreover, it anæsthetizes the nerve-ends upon which it is desired to effect, so that the cauterization becomes useless.

The Seton. Dr. THOMAS J. GRIFFITHS has strongly urged the employment of the seton in epilepsy. (*Report of the Supervising Surgeon, U. S. Marine Hospital Service*, 1876.) He introduces a large seton, fifteen or twenty strands of silk or flax thread, and allows it to remain for months, if necessary, removing only when the patient seems to be permanently improved or has recovered, unless too great irritation be produced by its presence, when it is removed temporarily, to allow the irritation to subside. The place of election for its introduction is the back of the neck. Of five cases of epilepsy, four were cured or greatly benefited. No other treatment was used except tonics. The disturbance of the mental faculties, which is the common attendant in such cases, rapidly improves after the insertion of the seton.

Trephining. In an examination of 145 cases of epilepsy, due to injury or disease of the skull, Dr. M. G. ECHEVERRIA found 93 cured and 18 benefited after trephining. (*Arch. Gen. de Med.*, December, 1878.) Such results should restore this operation to the position of a proper one in these cases.

HEADACHES.

Headache as a symptom is found associated with many varying conditions, as periostitis of the cranium, diseases of the teeth, ear and eye, astigmatism, cerebral affections, neuralgia and rheumatism of the scalp, quininism, uræmia, alcholic poisoning, etc. Beyond these cases, where the treatment is strictly etiological, there is a variety of idiopathic forms which require special treatment.

BILIOUS OR DYSPEPTIC HEADACHE.

Dr. THOMAS HAWKES TANNER recommends in this form:

61. ℞. Quiniæ sulphatis, gr. xxiv.
Pulveris rhei, gr. xxxvj.
Glycerinæ, q. s. M.

Divide into twelve pills, and order one to be taken at night.

Often of service in curing *bilious headaches;* the patient should take daily exercise in the open air, and avoid too much sleep.

Dr. HENRY G. WRIGHT states that when in this variety, the pain

comes on directly after a meal, and when it can be traced to indigestible articles of food, and the patient is tolerably strong, an emetic is useful.

62. ℞. Pulveris ipecacuanhæ, gr. xxv.
Ammonii carbonatis, gr. v.
Aquæ menthæ viridis, f.℥iss. M.
Take at one dose, and follow by some warm fluid.

Where the pain ensues some hours after taking food, a warm draught, with the following formula, is generally beneficial:

63. ℞. Pulveris rhei, ℈ijss.
Magnesii carbonatis, ℈ij.
Spiritûs ammoniæ aromatici, f.℥ij.
Syrupi zingiberis, f.℥ss.
Aquam menthæ piperitæ, ad f.℥ii. M.
A tablespoonful in water.

Such a headache may often be warded off by the following:

64. ℞. Pulveris rhei, gr. xviij.
Pulveris capsici, gr. v.
Sodii carbonatis exsiccatæ,
Pulveris aloes,
Saponis castilliensis, āā gr. xij. M.
Divide into twelve pills, one to be taken before the meal, as a dinner pill.

65. ℞. Pilulæ hydrargyri,
Pilulæ rhei compositæ, āā gr. iv.
Extracti hyoscyami, gr. ij. M.
Divide into two pills. To be taken at night, in cases of headache depending upon *dyspepsia*.

Or:

66. ℞. Pulveris ipecacuanhæ, gr. j.
Pilulæ colocynthidis compositæ, gr. vij.
Extracti gentianæ, gr. ij.
Olei carui, ♏½. M.
Divide into two pills. To be taken at bedtime.

When the system is debilitated, it is often more advisable to employ the following, in place of the night pills:

67. ℞. Infusi sennæ,
Infusi rhei, āā f.℥v.
Tincturæ cardamomi compositæ, f.℥j.
Syrupi, f.℥ss. M.
To be given as a draught in the morning.

Great benefit is generally derived from the combination of a bitter with an alkali, as in:

68. ℞. Sodii carbonatis, ℥ ij.
Spiritûs ammoniæ aromatici, f. ℥ vj.
Tincturæ aurantii,
Syrupi aurantii, corticis, āā f. ℥ iij.
Tincturæ gentianæ compositæ, f. ℥ iss. M.
A dessertspoonful twice a day.

If the stomach be very irritable, with excessive flatulence, the following mixture is more suitable:

69. ℞. Bismuthi subnitratis,
Sacchari,
Pulveris acaciæ, āā ℥ j.
Tincturæ cardamomi compositæ,
Tincturæ zingiberis, āā f. ℥ ss.
Aquæ anethi, f. ℥ iijss. M.
A tablespoonful taken twice a day.

The same medicine may be combined with soda and capsicum, thus:

70. ℞. Bismuthi subnitratis,
Sodii carbonatis exsiccatæ, āā ℈ ijss.
Pulveris capsici, gr. viij. M.
For eight powders. One to be taken twice a day, in dyspepsia with much acidity, with loss of appetite and general want of tone.

71. ℞. Argenti oxidi, gr. xij.
Pulveris capsici, gr. iv.
Extracti gentianæ, gr. xxiv. M.
Divide into eight pils. One to be taken twice a day.

In atonic dyspepsia, when the tongue is pale at the tips and edges, and the system weakly, few recipes prove so invariably successful as the above.

CONGESTIVE OR PLETHORIC HEADACHE.

In this form, Dr. WRIGHT states that the employment of medicines should, as far as possible, be dispensed with. They should only be resorted to when the necessities of business prevent, or the solicitations of indolence interfere with, a strict control over the diet and regimen. In these cases, a saline diuretic should be ordered, such as:

72. ℞. Potassii acetatis, ℥ ij.
Potassii nitratis, ℥ j.
Spiritûs juniperi compositi, f. ℥ xj.
Aquam menthæ piperitæ, ad f. ℥ iv. M.
A teaspoonful twice a day, together with an occasional aperient at night, viz.:

73. ℞. Pilulæ colocynthidis compositæ, gr. l.
Saponis castilliensis, gr. ix.
Olei anethi, ♏ ij. M.
Divide into twelve pills. Two to be taken at bedtime, and followed by a Seidlitz powder in the morning.

Persons subject to plethoric headaches should not partake of animal food more than once a day; should never indulge the appetite to satiety; should avoid beer, spirits, coffee, and all stimulating beverages; should bathe the head freely at night, and lie with it elevated on a hard pillow during sleep; should have an airy bed-room, and rise so soon as fairly awake, for otherwise, activity of the thoughts in a recumbent position will congest the head and cause it to ache.

When the patient has been exposed to cold, and the headache comes on at night, with the head hot and the skin harsh and dry, the following sudorific, taken at bed-time, is often of great service, the body being kept warm during its action:

74.	℞.	Antimonii et potassii tartratis,	gr. $\frac{1}{6}$.	
		Pulveris Jacobi veri,	gr. v.	
		Pulveris potassii nitratis,	gr. v.	M.

To be taken at night.

In the plethoric headache of pregnancy, relief is afforded by the use of saline medicines, as

75.	℞.	Magnesii sulphatis,		
		Sodii sulphatis,	āā	℥ j.
		Acidi sulphurici diluti,		f. ℥ ij.
		Tincturæ cardamomi compositæ,		f. ℥ iss.
		Syrupi aurantii corticis,		f. ℥ ss.
		Aquæ cinnamomi,		f. ℥ j. M.

A dessertspoonful twice a day.

Fluids should be avoided as far as possible. Sea air and sponging the body with tepid salt water generally prove beneficial.

In the treatment of *congestive headaches*, the aperients so frequently required should be cordial and saline, such as

76.	℞.	Extracti sennæ fluidi,	f. ℥ ijss.	
		Magnesii sulphatis,	℥ ij.	
		Acidi sulphurici aromatici,	f. ℥ ij.	
		Syrupi aurantii corticis,	f. ℥ j.	
		Infusi rhei,	f. ℥ ijss.	M.

Dose, a tablespoonful in the morning.

There are no medicines so invariably useful in cases of congestive headache, attended with debility, as the preparations of *iron*. If the patient be of stout phlegmatic habit, the tonic may be combined with a cordial and saline, according to the following formula:

77. ℞. Ferri sulphatis, gr. xxxij.
Magnesii sulphatis, ℥ x.
Acidi sulphurici diluti, f. ℥ ij.
Tincturæ cardamomi compositæ, f. ℥ ij.
Syrupi,
Aquæ pimentæ, āā f. ℥ i. M.
A dessertspoonful in water twice a day.

78. ℞. Tincturæ ferri chloridi, f. ℥ ij
Acidi muriatici diluti, f. ℥ ss.
Tincturæ cinnamomi, f. ℥ iss.
Syrupi,
Aquæ cinnamomi, āā f. ℥ vj. M.
A dessertspoonful in water, twice a day, about half an hour after food.

In the congestive headache of females past the middle period of life, especially when these headaches accompany alterations of the whole system at the great climacteric period, Prof. J. M. Da Costa finds the use of saline cathartics is of service. Also, a mustard foot bath every night. The application of a *hot salt bag* to the back of the neck often affords relief. This form of headache is frequently associated with cardiac enlargement.

GOUTY HEADACHE.

In *gouty* headaches, according to Dr. Wright, colchicum may be employed with greater freedom than in ordinary gout, care being taken that the bowels are freely open during its administration. An actual attack is best relieved by a brisk aperient followed by an effervescing mixture, containing an excess of potash, viz.:

79. ℞. Potassii carbonatis, ℈ iv.
Ammonii carbonatis, ℈ ij.
Tincturæ serpentariæ, f. ℥ ss.
Aquæ camphoræ, f. ℥ iijss. M.
Two tablespoonfuls to be added to a tablespoonful each of water and lemon juice, and to be taken effervescing twice or three times a day.

HYSTERICAL HEADACHE.

A pill of the following character is recommended by Dr. Thomas H. Tanner:

80. ℞. Zinci valerianatis, gr. xij–xxiv.
Extracti belladonnæ, gr. iij–vj.
Extracti gentianæ, gr. xxiv. M.
Divide into twelve pills. One to be taken three times a day.

Useful in *hysterical headache*, especially when there is habitual constipation.

81. ℞. Zinci phosphatis, ℈ j–ij.
Acidi phosphorici diluti, f. ʒ iss.
Tincturæ cinchonæ, f. ʒ vj.
Aquam menthæ piperitæ, ad f. ℥ iij. M.

Tablespoonful in half a wine glass of water three times a day, *in hysterical headache associated with general debility.*

In *clavus hystericus* and hysterical forms of migraine, Dr. ANSTIE found *muriate of ammonia*, grs. xx–xxx, repeated several times, of much benefit.

MIGRAINE, HEMICRANIA, PERIODICAL OR SICK HEADACHE.

This frequent and distressing form can best be met by *cannabis Indica*, as recommended by Dr. RICHARD GREENE, (*Practitioner*, p. 267, 1872,) and since by Dr. E. C. SEGUIN, of New York. (*Trans. N. Y. Academy of Medicine*, 1877.) The latter gives the details of his plan as follows:

First.—The *treatment of the patient* consists in removing all relievable exciting causes, and more especially in correcting acidity. For this purpose he gives nitro-muriatic acid and alkalies, greatly reducing the saccharine and amylaceous foods of the patient. In cases attended by debility, anæmia, and imperfect nutrition, it may be necessary to resort to tonics, including cod-liver oil.

Second.—*Treatment of the attack.* The first thing to be done is to place the patient under circumstances which secure quiet and semi-darkness. The attempt to "fight out" a sick-headache is nearly always vain, and may be injurious. It is better not to allow the patient any food, not even liquids, until toward the close of the attack, or even not till next day; by this, nothing is lost, and much wretchedness is avoided. Ice, or ice washed in brandy, is grateful.

If the patient have a warning (aura of migraine) before nausea or pain, much can be done to cut short the attack or diminish its severity by the use of guarana, caffeine or croton chloral hydrate, (grs. 15 or 20 every hour.) In his hands, guarana or the powder of the seeds of *paullinia sorbilis*, has proved very efficacious.

Third.—*Treatment of the disease.* The principle of the treatment is to keep the nervous system steadily under a slight influence of cannabis for a long period of time. He gives to adult females $\frac{1}{3}$ of a grain of the alcoholic extract of *cannabis Indica* before each meal, increasing the dose after a few weeks to $\frac{1}{2}$ grain. Males can generally begin with $\frac{1}{2}$ grain, and it is well to give them $\frac{3}{4}$ grain in two or three weeks.

These doses must be taken with the greatest regularity, just as faithfully and regularly as bromides in epilepsy. Indeed, when beginning such treatment, he usually obtains a promise from the patient that he will regularly take the pills for a period of three months.

As a rule, no appreciable immediate effect is produced by the above doses, though lightness of the head and slight confusion of mind may result from an initial dose of ½ grain three times a day.

Under this apparently and essentially simple plan of treatment, results are obtained; that is, the majority are greatly relieved, some entirely cured.

PROF. HARVEY L. BYRD, M. D., BALTIMORE.

In the treatment of *sick headache*, Prof. HARVEY L. BYRD, M. D., of Baltimore, recommends the use of an emetic of ipecacuanha, and after its action, the use of the following:

82. R. Chloralis, ℥j.
Aquæ, f.℥ij. M.

A tablespoonful every hour until sleep is induced.

DR. A. SEURE, OF PARIS,

Strongly recommends (*Bull. de Ther.*, April, 1879,) the administration of *chloral* in an *enema*, on the occurrence of the paroxysm of migraine, having found it almost infallible, and exempt from the disadvantages attendant on other modes of giving this substance, and far preferable to the employment of morphia, quinine, etc., for the same purpose. He gives, according to the sex or robustness of the patient, from 1½ to 3 grammes, in a glass of tepid water, the effect of the chloral being rendered still more prompt by the addition of a tablespoonful of brandy. If a sense of burning in the rectum is excited, this may be prevented by adding the yolk of an egg or substituting tepid milk for the water. When, as in some persons, there is difficulty in retaining the enema, the quantity of the liquid may be diminished, and a drop or two of laudanum added.

PROF. AUSTIN FLINT, NEW YORK.

Periodical headaches, as regards successful treatment, belong among the opprobria of medical art. If patients be not unpleasantly affected by opiates, an attack may sometimes be warded off, or its severity much lessened by a full dose of opium or one of its alkaloids. The carbonate of ammonium and a saline purgative are sometimes effective

at the commencement of an attack. Various palliative measures may be resorted to, such as *inhalation of chloroform, evaporating lotions to the head,* (alcohol, spirits, vinegar, ether,) etc. In some cases a towel or napkin wrung out in water as hot as can be borne, and wound around the head, is more efficient than cold applications. *Warm stimulating pediluvia,* strong *coffee* or *tea,* and the application of the *galvanic* or the *electro-galvanic current,* are useful in some cases. During the intervals the remedies which are sometimes of service by way of prophylaxis are *nux vomica* or *strychnia,* in small doses, *arsenic,* small doses of *quinia, belladonna,* and the preparations of *zinc,* more especially the valerianate. They may be tried in succession. Hygienic measures are important, and the avoidance of everything which experience shows, in individual cases, to act as exciting causes.

GEORGE KENYON, M. D., HARROWGATE, ENGLAND.

83. ℞. Carbonis bisulphidi, f.℥ ij.

As a local application in periodical and hysterical headache, and even in many cases of dyspeptic cephalalgia.

About 2 drachms of the bisulphide of carbon is poured upon cotton wool, with which a small glass-stoppered bottle is half filled. The mouth of the bottle is applied *closely* to the temple or behind the ear, or as near as possible to the seat of pain, and so held from three to five or six minutes. In a minute or two, a sensation as of several leeches biting the part is felt, and in three or four minutes more, the smarting and pain become rather severe, but subside almost immediately after the removal of the bottle. (*Medical Times and Gazette,* July, 1868.) It is very seldom any redness of the skin is produced. The effect of the application is generally immediate; it may be repeated, if necessary, three or four times a day. The sedative vapor of the bisulphide is probably absorbed through the skin, and acts upon the superficial nerves of the part to which it is applied.

DR. LETENNEUR, FRANCE.

84. ℞. Potassii bromidi, ℥ j.
Aquæ destillatæ, f.℥ x. M.

A tablespoonful before the midday meal, and two tablespoonfuls at bedtime, in migraine with periodical returns. During the attack, the patient will take, three or four times a day, small doses of morphia.

DR. J. E. LOCKRIDGE, OF INDIANAPOLIS.

This writer (*American Practitioner,* March, 1877,) gives a formula

which he has found of great service in every variety of headache, almost. It is:

85. ℞. Potassii bromidi, ℥ ij.
Tinct. radicis aconit., f. ʒ j.
Aquæ destillatæ,
Syrupi simplicis, āā f. ℥ ij. M.
Take a dessertspoonful in some water every hour until relieved.

This is a large dose of the principal ingredients, but it rarely has to be repeated, and he believes a less dose is not to be depended upon.

Dr. Wm. H. Day states that in dyspeptic, bilious, or sick headache, one drop of tincture of nux vomica or of tincture of aconite, given in a teaspoonful of water, will often, after a very few doses, give entire relief, especially where the extremities are cold and the pulse small.

NERVOUS HEADACHE.

PROF. R. J. GRAVES, M. D., DUBLIN.

86. ℞. Olei terebinthinæ, f. ʒ j-ij.
For one dose, to be given in cold water.

Our author places much reliance on this medicine in the hysterical and nervous headaches of young women. Some will bear and derive benefit from two or three of these doses in the day, experiencing from its use a diminution of headache, the removal of flatulence, together with a moderate action on the bowels and kidneys. The turpentine may also be given in the form of an enema. Occasionally it causes dysuria, and cannot be persevered in.

Dry cupping at the nape of the neck, between the shoulders, and below the clavicles, is often of great service in hysterical headaches. Six cups should be applied and allowed to remain on for ten or fifteen minutes.

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK.

87. ℞. Zinci oxidi, ℈ ij-v.
Confectionis rosæ, q. s. M.
Divide into twenty pills. One to be taken three times a day, after meals.

This formula is of great value. The minimum dose (gr. ij) should be commenced with, gradually increasing to the maximum (gr. v), if necessary.

88. ℞. Extracti nucis vomicæ, gr. v.
Ferri redacti, ℈ j.
Quiniæ sulphatis, gr. x.
Syrupi, q. s. M.
Divide into twenty pills. One to be taken three times a day, after meals.

Nux vomica is preferable to strychnia.

89. ℞. Bismuthi subcarbonatis, ℈ ij.
Confectionis rosæ, q. s. M.
Divide into twenty pills. One after each meal.

These pills will often take the place of those of oxide of zinc. They are particularly useful when there is gastric disturbance.

Bromide of potassium is serviceable when the nervous system has been irritated; when exhausted, it does harm.

Bromide of ammonium is similar to the bromide of potassium in its action, but the dose need not be so large. Our author often uses both combined.

Opium and its preparations are rarely of value in this disorder. If used, the hypodermic method is the best.

Narcein has, Dr. HAMMOND still thinks, a decided hypnotic effect when given in large doses.

Nitrite of amyl has been used by Dr. R. A. DOUGLAS LITHGOW, with much success. He places two drops on the palm of the patient's hand, and quickly diffusing these with his finger, over the palmar surface, tells her to cover her mouth and nose with her hand, and to inspire deeply and quietly. No time should be lost, after the nitrite is dropped on the hand, as it evaporates rapidly. The patient should be seated while inhaling, as the peculiar effects of the nitrite are produced almost instantaneously, and may occasionally alarm a very nervous or hysterical female. Fortunately, these symptoms last a very short time—generally less than two or three minutes—and with their cessation, the pain almost invariably ceases. Two drops may be given as a draught in water, instead of by inhalation, but the latter mode is much more satisfactory.

Phosphorus is beneficial in all the forms of nervous headache. It is, however, difficult of administration, and leaves an unpleasant odor about the person. The best results are obtained from the following method of administration:

90. ℞. Acidi phosphorici diluti, f. ℥ vj.
Syrupi phosphatum compositi, f ℥ iij.
A dessertspoonful, in water, three times a day.

Arsenic, as a nerve tonic, stands next in value to zinc. Granules of arsenious acid (gr. $^1/_{40}$) are preferable to FOWLER'S solution.

Galvanism is highly praised by some, and severely condemned by others, in this affection. The brain cannot be acted upon to any considerable extent by the induced current or by the reflex action. Our author advises, always, the *constant current;* being careful to avoid too great intensity, lest amaurosis be produced. (*Half-yearly Compendium of Medical Science*, July, 1868.)

THOMAS H. TANNER, M. D.

91. ℞. Acidi nitro-muriatici diluti, f. ʒ ij.
Strychniæ, gr. ¼–½.
Spiritûs chloroformi, f. ʒ vj.
Tincturæ zingiberis, f. ʒ iij.
Aquam, ad f. ʒ iij. M.

A teaspoonful in water, three times a day, *in nervous headache.*

Holding the arms high above the head produces a marked effect upon the cerebral circulation, and will frequently relieve the severity of that peculiar morning headache with which some persons constantly awake.

Compression of the temporal arteries with a couple of pads and a bandage, may sometimes be of service.

Cold lotions, eau de cologne, etc., to the head, dry cupping or blisters, or setons to the nape of the neck; the removal of decayed teeth or stumps from the mouth, and change of air, are occasionally indicated.

Dr. WRIGHT states that in nervous headache, the combinations of hyoscyamus with camphor, with chloroform, or with a diffusible stimulant, generally afford great relief. The following formula may be used:

92. ℞. Extracti hyoscyami,
Pulveris camphoræ, āā ℈ ijss. M.

Divide into twenty pills. Two to be taken when the pain is severe.

93. ℞. Chloroformi, f. ʒ iss.
Tincturæ hyoscyami,
Tincturæ cardamomi compositæ, āā f. ʒ ss.
Olei limonum, ♏xvj.
Sacchari,
Pulveris acaciæ, āā ʒ ss.
Aquæ camphoræ, f. ʒ iij.

Dose, a tablespoonful.

94. ℞. Tincturæ hyoscyami,
Spiritûs ammoniæ aromatici, āā f. ʒ ss.
Syrupi aurantii corticis, f. ʒ i.
Aquæ menthæ piperitæ. f. ʒ ij. M.

Dose, a tablespoonful.

95. ℞. Pulveris camphoræ,
Quinæ sulphatis, āā gr. x.
Extracti aloes, gr. xij.
Extracti hyoscyami, ʒss.
Mucilaginis acaciæ, q. s. M.

Divide into eighteen pills. Two to be taken twice a day, in case of nervous headache when there is great debility and sluggishness of the system.

NEURALGIC HEADACHE.

True neuralgic headache is recognized by its complete intermittence, by its plainly superficial character, and by its following the course of recognizable nerve branches, which often present one or more painful spots in their course. The *stimulant narcotics* are the most efficient drugs to combat it, especially the preparations of opium. Dr. WRIGHT gives:

96. ℞. Morphiæ muriatis, gr. j.
Pulveris camphoræ, gr. xxiv.
Mucilaginis acaciæ, q. s. M.

Divide into six pills. One pill to be taken when the headache is very intense. Five hours are to be allowed to elapse before repeating the dose.

WILLIAM HENRY DAY, M. D., LONDON.

This author, in his work on *Headaches, their Nature, Causes and Origin*, states that the subjects of neuralgic headache are usually anæmic and require nutritious diet and rest. Frequently taints of gout, syphilis or mercury are present in very obstinate cases, and must receive proper treatment before a cure can be affected. Locally, we may use a chloroform and aconite liniment, or ointment of belladonna or veratria. The following is useful:

97. ℞. Sodii hypophosphitis, ʒss.
Infusum columbæ, ad f.ʒvi. M.

Two tablespoonfuls thrice daily.

Arsenic is a remedy of the greatest value; it must not be abandoned as soon as constitutional symptoms appear, but only suspended for a day or two and recommenced.

98. ℞. Tinct. cinchonæ, ♏ xx.
Liq. potass. arsenitis, ♏ v.
Mist. camphoræ, f.ʒj. M.

This amount thrice daily.

In this form of headache as well as in some others,

DR. JOHN KENT SPENDER

Speaks well of the local use of *chloroform* or of *bisulphide of carbon*, applied as follows: A small quantity of either is poured upon cotton wool, with which a small, wide-mouthed, glass-stoppered bottle is filled. The mouth of the bottle is then applied as near as possible to the seat of pain and held there for five minutes. It produces a smarting and burning sensation on the skin, which is promptly followed by relief of the pain.

Another neat and efficient plan to relieve this and similar forms of headache is to steep a piece of blotting paper in *liquor atropiæ*, (gr. j to f. ℥ j,) and apply it to the brow or painful part.

Heat and *cold* are valuable aids in the relief of the pain. A cloth wrung out in water as hot as the hands can bear it and laid on the brow, or a bladder of ice—whichever the patient seems to prefer—will often effect a speedy dispersion of the pain for the time being.

RHEUMATIC HEADACHE.

DR. HENRY G. WRIGHT, LONDON.

99. ℞. Linimenti chloroformi,
Linimenti belladonnæ, āā f. ℥ iss.
Tincturæ opii, f. ℥ j. M.
For external application, *in rheumatic headaches*.

Mustard plasters applied to the neck are also exceedingly useful as a means of counter-irritation. In such cases (rheumatic headache) the following aperient is of advantage, viz.:

100. ℞. Pilulæ colocynthidis compositæ, gr. xv.
Extracti colchici acetici, gr. iij.
Olei carui, ♏ j. M.
Divide into four pills. Two to be taken at bedtime, and one on consecutive nights. These pills should be followed, in persons of a costive habit, by a morning purgative, as follows:

101. ℞. Magnesiæ, ℈ iv.
Liquoris potassæ, ♏ xlv.
Extracti sennæ fluidi, f. ℥ ij.
Syrupi zingiberis,
Tincturæ aurantii, āā f. ℥ ss.
Aquæ, f. ℥ j. M.
Dose, a tablespoonful.

The administration of an alkaline medicine containing potash, if continued with regularity, will generally be followed by rapid amelioration of the pain and tenderness. The following may be used:

102. ℞. Potassii bicarbonatis, ℈ iv.
Potassii chloratis, ʒ iss.
Tincturæ cinnamomi,
Tincturæ aurantii, āā f. ʒ vj.
Syrupi aurantii corticis, f. ʒ iss. M.
A dessertspoonful to be taken twice or three times a day.

If imprudent exposure to cold has produced an aggravation of the headache, and particularly if the patient be subject to catarrh, it is advisable to administer a sudorific at bedtime, such as

103. ℞. Pulveris ipecacuanhæ compositi, gr. xij.
Pulveris camphoræ,
Pulveris guaiaci, āā gr. iv. M.
For one powder. To be taken about bedtime.

RÉSUMÉ OF REMEDIES.

BILIOUS AND DYSPEPTIC HEADACHES.

Ammonii Acetatis Liquor is recommended by Prof. STILLÉ, who considers few remedies so successful in sick headaches as a teaspoonful or two of this solution.

Ammonii Carbonas will sometimes offer almost instantaneous relief.

**Ammonii Chloridum* is useful in bilious, as well as hysterical headaches. According to Dr. ANSTIE, gr. x–xx, if given early enough, seldom fails to cut short and greatly mitigate the attack. It is given with great benefit when the pain is most intense, in any form of headache.

Argenti Nitras is recommended by Dr. J. JOHNSON (in combination with minute doses of compound colocynth pills), in the habitual stomach headache to which delicate and literary men are so subject.

Bismuthi Subnitras is frequently advised, variously combined, in dyspeptic headache, by Dr. WRIGHT. (F. 69, 70.)

Carbonis Bisulphidum is recommended by Dr. KENNION, in sick headache, applied locally. (P. 60, 65.)

Hydrargyri Chloridum Mite, or other mercurial, is of service in headaches arising from biliary derangement, or a torpid state of the bowels. It should be followed, at a short interval, by a saline or other purgative.

Magnesia, in cases accompanied with constipation, affords great relief.

Magnesii Citratis Liquor. A dose of the effervescing citrate is often very effectual in dyspeptic headache.

Podophyllum is prescribed with benefit in many forms of bilious headache.

Potassii Bromidum has been recommended for the prompt relief of the paroxysm.

CONGESTIVE OR PLETHORIC HEADACHE.

Asarum Europæum, gr. ij–ii of the powdered root, snuffed into the nostrils, has proved useful in cases of severe chronic headache originating in inflammation of the frontal sinuses.

Aloetic purgatives are beneficial in congestive headaches.

**Leeches* may be applied with advantage to the inner nostril, temples, to the crown of the head, or to the verge of the anus.

Saline aperients are recommended by Drs. DA COSTA and WRIGHT.

Sinapisms, to which have been added powdered capsicum or oil of turpentine, are often applied with benefit to the soles of the feet and the inner parts of the calves and thighs.

**Water*, locally applied, *hot*, is often more effectual than the cold lotions usually employed. Diligently steeping the temples, forehead, occiput, and nape of the neck with water, as hot as can be borne, in many cases will be found a useful remedy. The hot foot-bath is often of signal service.

GOUTY HEADACHE.

Colchicum may be employed with greater freedom in gouty headache than in ordinary gout, according to Dr. WRIGHT.

HYSTERICAL AND NERVOUS HEADACHES.

Ammonii Chloridum is advised by Dr. ANSTIE, to be administered in the same manner as for bilious headache (which see above.)

Ammonii Bromidum is recommended by Prof. HAMMOND, alone or combined with the bromide of potassium.

Argenti Nitras is highly prized by Dr. GRAVES, administered in considerable doses, *i. e.*, gr. ½ five or even six times daily, for five or six days at a time, when the paroxysm has abated. If there be constipation, the nitrate should be combined with minute doses of compound colocynth pill.

Bismuthi Subcarbonas is often prescribed by Dr. HAMMOND, particularly when there is gastric disturbance.

Cajuputi Oleum is used both externally and internally, in nervous, rheumatic, and neuralgic headaches.

Camphora is useful, combined with hyoscyamus.

**Chloroformi Spiritûs*, in the dose ℥xv–xxx, often affords prompt relief in nervous and hysterical headaches.

Cimicifuga is useful in the headaches attendant on uterine derangement.

Guarana is particularly efficacious in the relief of sick headache, in doses of half a drachm to a drachm.

Hyoscyamus is strongly recommended by Dr. WRIGHT, in nervous headache. It may be combined with camphor, with chloroform, or with a diffusible stimulant.

Lavandula. The compound tincture, administered according to the following formula, makes an agreeable stimulant:

104. ℞. Tincturæ lavandulæ compositæ,
Spiritûs chloroformi,
Spiritûs ætheris compositi, āā f.℥j.
Aquæ camphoræ, f.℥iij. M.

Dose, two tablespoonfuls in water. Opium may be added if indicated. This is a very effectual recipe for the headache of hysteria.

Narcein is recommended as a hypnotic by Prof. HAMMOND. (P. 62.)

Nitro-muriaticum Acidum is recommended by Dr. TANNER. (F. 91.)

Phosphorus is recommended by Prof. HAMMOND in all forms of nervous headache.

Quiniæ Sulphas is beneficial in hysterical headaches associated with anæmia.

Rosmarinus. The infusion is a mild stimulant, sometimes of service.

Stramonium has been prescribed with benefit by Dr. COPLAND.

Strychnia. Prof. HAMMOND considers nux vomica as preferable to strychnia in nervous headaches.

Terebinthinæ Oleum is recommended by Dr. GRAVES in hysterical headache.

* *Valeriana* is of especial benefit in hysterical headache. Dr. ASHWELL recommends the following formula:

105. ℞. Tincturæ valerianæ,
Spiritûs ætheris compositi,
Spiritûs lavandulæ compositi, āā ♏xxx.
Tincturæ hyoscyami, ♏xx.
Aquæ camphoræ, f.℥ x. M.

For one dose.

Dr. CONNOLLY recommends the following:

106. ℞. Tincturæ valerianæ ammoniatæ,
Spiritûs ætheris compositi, āā ♏xxx.
Aquæ camphoræ, f.℥ iss. M.

Or,

107. ℞. Tincturæ valerianæ ammoniatæ, f℥ j.
Acidi sulphurici diluti, ♏xv.
Aquæ camphoræ, f.℥ iss.

Make a draught to be given twice or thrice a day.

Zinci Oxidum is regarded as of great value in nervous headache by Prof. HAMMOND.

Zinci Phosphas is recommended by Dr. TANNER, in hysterical headache, associated with debility.

Zinci Valerianas is also recommended by Dr. TANNER, combined with belladonna.

EXTERNAL REMEDIES.

Æther to the forehead, on a very thin compress, to avoid irritation of the skin, by thus favoring its free evaporation, is an excellent application.

Camphora, locally applied, is a valuable remedy in nervous headaches. The following formula may be employed:

108. ℞. Camphoræ, ℥j.
Aceti, Oj.
Aquæ, Oj–ij. M.

Another excellent local application is what is known in France as "L'Eau Sedative de Raspail," which is made as follows:

109. ℞. Aquæ ammoniæ, 100 parts.
Camphoræ, 2 "
Sodii chloridi, 20 "
Aquæ, 900 "
Olei rosæ, q. s. M.

Dry Cupping is recommended by Dr. GRAVES.

Oleum Cajuputi. A few drops rubbed upon the painful part are often effectual.

Oleum Menthæ applied to the forehead and the base of the occiput often gives immediate relief. It is best dissolved in alcohol.

Shower Baths are often of great advantage in hysterical headache.

NEURALGIC HEADACHE.

Ammonii Chloridum, given when the pain is most intense, in the dose of gr. x–xx, sometimes affords prompt relief.

Cajuputi Oleum is used, both externally and internally, by Dr. COPLAND and others.

Camphora, in the form of "Raspail's sedative water," (F. 109,) is sometimes very useful.

Caffein. The citrate has been recommended in doses of gr. j, every hour, for some time before the expected attack. Coffee is much used by Belgian physicians. The juice of a lemon makes a valuable addition to a cup of strong coffee in these cases. Caffein may also be employed hypodermically.

Nitrite of Amyl, by inhalation, has been successfully employed in neuralgic headache, associated with a diminished supply of blood in the brain.

PERIODIC HEADACHE.

Arsenici Iodidum has been found, by Dr. WALSHE, to give relief in the most violent cases of periodic headache. It should be given in doses of gr. $\frac{1}{15}$–$\frac{1}{12}$, twice a day, two hours after eating, and continued for a month or two.

Ammonii Carbonas and a saline purgative, at the commencement of an attack, are recommended by Prof. FLINT. (P. 59.)

Belladonna is sometimes of service as a prophylactic.

Caffea is a popular and efficient remedy.

Cannabis Indica. (See above p. 58.)

Nectandra is a useful remedy in periodical headaches.

Potassii Bromidum often rapidly relieves headache of a paroxysmal character, with heat of the head and flushing of the face.

Quiniæ Sulphas, in small doses, is recommended, by way of prophylaxis, by Prof. FLINT.

Sulphate of Nickel was used successfully by Sir JAMES Y. SIMPSON. (*Medical Press and Circular*, December, 1868.)

Zincum. The various preparations of this metal, more especially the valerianate, may be employed with advantage in the intervals of the attacks.

RHEUMATIC HEADACHE.

Aconitum in small doses, either alone or in combination with other remedies, is often of service. Aconitia ointment is serviceable, especially in brow ague.

**Sulphur* internally is often of great benefit in rheumatic headaches and those which occur in women about the period of the cessation of the menses.

Alkaline treatment, if continued with regularity, will generally be followed by satisfactory results.

HYPOCHONDRIASIS, OR MELANCHOLIA.

A. O. KELLOGG, M. D., U. S.

In the treatment of the early stages of this form of mental alienation, this writer (*Am. Jour. of Med. Sciences*, Jan., 1878,) says that the digestion and sleep, especially the latter, are to be improved. For this purpose, he has found the following drugs to be most useful in the order given: *Hydrate of chloral*, gr. x–lx; *tincture of hyoscyamus*, f. ʒ j–iij; *liq. morphiæ sulphatis*, f. ʒ j–f. ʒ iij; or two or more may be combined, especially the two first mentioned. Opium often aggravates the insomnia. Traveling, so often recommended, is worse than useless. In the majority of cases, overwork or exhaustion from innutrition, lactation, etc., has led to the condition, and *rest* is imperatively demanded. The patient must be carefully nourished and sustained by a full, generous diet. From fear of biliousness or indigestion, he has probably fasted, abstained from food, at least, and perhaps from drink; but as to the last, it is not improbable that he may have indulged excessively in stimulating beverages. These, in moderation, however, are not without their use, for in all such cases, there is generally deficiency of nerve and brain force, which, next to good, nutritious food, is supplied by wine, eggs, milk, malt liquors, iron, quinine, strychnine, arsenic, etc., as, in the judgment of the physician, may seem indicated.

W. W. GULL, M. D., LONDON.

The *constitutional treatment* is to be directed towards improving the general nutrition. The administration of *iron* is doubtless of great use to some anæmic patients, and *sea-bathing* frequently appears to exercise a very beneficial influence; but the first of these remedies is generally the most efficacious when taken in the form of the chalybeate waters of some foreign spa, and there is good reason to doubt whether both mineral waters and sea-bathing do not owe most of their apparent power to the moral influences of travel and change of scene and mode of life. The more specific nervous tonics, such as strychnia, quinia, or phosphorus, seem to exercise but a doubtful and exceptional influence.

While it is desirable to avoid concentrating the patient's attention on parts which are the apparent seat of morbid sensations, it is import-

ant to relieve him of the distress caused by real (though mere functional) disorders of the digestive system. Decided acidity of the stomach should be counteracted by the use of antidotes, of which none is more efficacious than *magnesia* in 10-grain doses thrice daily, with gentian or cascarilla. The excessive or too prolonged use of alkalies is, of course, to be avoided. The distressing flatulence which is often one of the earliest, and also one of the most annoying symptoms, is greatly relieved by *creasote* (one drop in a pill two or three times daily) or the *infusion of valerian*. Alcoholic tinctures should be cautiously employed, if at all, for there is real danger of the patient getting to appreciate the comforting sensations given by the spirit, so highly that he gradually takes to drink; this is particularly apt to occur in hypochondriacal women, and in patients exhausted by masturbation, or other venereal indulgence. The constipation, frequently so obstinate and troublesome, should be remedied, if possible, without drugs, so as to avoid stimulating the patient's love for self-doctoring in the direction of the habitual use of purgatives. Fruit, green vegetables, etc., and active bodily exercise, are desirable means of accomplishing this object.

Physical exercise should be amusing, and never produce severe fatigue. A short continuance of the malpractice of carrying exercise to the fatigue point, will usually suffice to produce a profound deterioration of the vigor of the nervous system, and an aggravation of the hypochondriacal fancies.

DR. HOMOLLE, FRANCE.

110. R. Extracti aloës,
Quiniæ sulphatis, āā ℥ss.
Extracti valerianæ, q. s.

Divide into forty pills. One to four a day, in hypochondria. Exercise in the open air, amusements, and appropriate regimen.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

The only way to cure a hypochondriac, is to rid him of his morbid sensations; but it is useless to dispute with him and try to convince him of the error of his ideas. In the first place, any existing derangement of the system which would cause a feeling of illness in a sane person, should be corrected. The benefit derived from various *natural mineral springs* is no doubt due to their happy effect upon the gastric disorders which so frequently give rise to this disease. Preparations of *iron*, *sea-bathing*, and *cold foot-baths*, are frequently appropriate.

Drastic *cathartics* must be used with caution, though they cannot be altogether dispensed with, and generally afford temporary relief. Patients should be warned against over-dosing. This also applies to the use of carminatives, for which they nearly always beg.

The *psychical* treatment should have in view the diversion of the attention from the sensory to the motor and intellectual spheres. This object will not be attained in educated patients by ordering long walks, wood-sawing, gymnastics, and mechanical pursuits, because the attention is not diverted by such action out of the sphere of sensation. A hypochondriac merchant sawing wood is always busy with the thought that he is doing so because he is sick. General rules are of little value, as the directions must always be in accordance with the capacity, education and means of the patient.

RÉSUMÉ OF REMEDIES.

Assafœtida, in combination with bitter tonics and mild aperients, may often be given with advantage in hypochondriasis attended with dyspepsia.

Cimicifuga is alleged by PHILLIPS (*Materia Medica*, 1879,) to exercise special powers in nervous and sexual hypochondriasis.

Creasotum, one drop, in pill, two or three times daily, will greatly relieve the distressing flatulence of hypochondriasis.

Fel Bovinum Purificatum is advised by Dr. COPLAND in hypochondriasis attended with torpor of the intestines:

111. ℞. Fellis bovini purificati,
Pilulæ assafœtidæ compositæ, āā gr. xxx.
Extracti aloes, gr. xx.
Saponis, gr. x.
Pulveris ipecacuanhæ compositi, gr. viij. M.
For 30 pills. One or two to be taken before dinner.

Hyoscyamus has been found of service by Dr. HARLEY, in occasional full doses, (f.ʒ iv–viij) of the succus.

Moschus, in the dose of one grain every two hours, often proves successful in the sleeplessness of hypochondriasis.

Narcotics. (See above p. 71.)

Potassii Bromidum is an uncertain remedy in this disease, affording great relief in some cases, and proving inert in others.

Sumbul Radix. The resinous extract of this root, in doses of gr. j–ij, thrice daily, has proved beneficial in the hands of Russian physicians.

INSOMNIA, SLEEPLESSNESS, OR WAKEFULNESS.

According to

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK,

The principles which should prevail in the treatment of wakefulness may be arranged into two classes.

1st. Those which, by their tendency to soothe the nervous system, or to distract the attention, diminish the action of the heart and blood vessels, or correct irregularities in their function, and thus lessen the amount of blood in the brain.

2d. Those which directly, either mechanically or through a specific effect upon the circulatory organs, produce a similar effect.

In slight cases, the measures belonging to the first class often prove effectual. Among them are music, monotonous sounds, gentle frictions of the surface of the body, soft undulatory movements, the repetition by the insomnolent of a series of words till the attention is diverted from the existing emotion which engages it, and many others of similar character. In persistent insomnia, however, these are nugatory.

Chief among the means embraced under the second head are those which tend to improve the general health of the patient.

In regard to food, while it is an error to suppose, as is generally done, that a moderately full meal, eaten shortly before bedtime, is necessarily productive of wakefulness, there is no doubt that this condition is induced by an excessive quantity of irritating or indigestible food. A hearty supper of plainly cooked and nutritious food rather predisposes to sleep. This is due to the fact that the process of digestion requires an increased amount of blood in the organs which perform it, and consequently the brain receives a less quantity. This hypnotic effect is neutralized, however, when the food is immoderate in amount or irritative in quality, as it then, either by the pressure upon the abdominal vessels or through a reflex action on the heart, augments instead of diminishes the quantity of blood circulating in the brain. Attention should, therefore, be paid to the diet of the insomnolent. As a rule, people are under-fed. This is especially true of women. The tone of the system is thus lowered, and local congestions of different parts of the body are produced. If the brain be one of these, wakefulness results.

Most of the cases of insomnia in women are of the passive variety, and require not only nutritious food, but *stimulants*. Whisky is generally to be preferred to brandy and many kinds of wine. Nothing can be better, as a good stimulant, and at the same time tonic, than *Tarragona wine*, drank at dinner, to the extent of a glass or two. Next must be ranked good *lager beer*.

There are cases in which *coffee* induces sleep. Our author mentions several in which passive wakefulness was entirely and speedily cured by a cup of strong coffee, taken for three or four nights in succession, at bedtime. In females of languid circulation and a consequent tendency to internal congestions, it is particularly useful.

The employment of stimulants is only of service in the asthenic or passive form of insomnia; in the sthenic or active form they would, of course, increase the difficulty.

Physical exercise in the open air, extended to the point of inducing a slight feeling of fatigue, is productive of good effects.

The *warm bath* calms nervous irritability and determines blood from the head. Putting the feet in water of the temperature of 100° F. will often induce sleep, particularly in children, after other means have failed.

Cold water (32° F.) applied directly to the scalp, has a good influence in those cases in which the individual is strong, the heart beating with force and frequency, and the mental excitement great. It is not admissible in the asthenic form of wakefulness.

In insomnia dependent upon severe and long-continued mental exertion, all means will fail if the individual will not consent to use his brain in a rational manner. Proper intervals of relaxation must be insisted upon, and in some cases mental rest. Travel is always of the greatest advantage in such cases.

Among the purely medicinal agents, *bromide of potassium* holds the first rank. It diminishes the amount of blood in the brain, and allays any excitement which may be present in the sthenic form of insomnia. The flushed face, the throbbing of the carotids and temporals, the suffusion of the eyes, the feeling of fullness in the head, all disappear as if by magic under its use.

C. HANDFIELD JONES, M. D., OF LONDON,

Recommends, when sleeplessness depends upon hyperæsthesia, to give not only a *stimulant*, but also some *digestible nourishment*, about the

time of going to rest, or even in the course of the night, when debility to a serious extent exists. A *mustard poultice* to the epigastrium is also an excellent hypnotic in some cases, probably owing to its stimulating a languid solar plexus. Among the various soporifics, it is doubtful whether any are more potent, especially for the weakly and hyperæsthetic, than prolonged exposure to the *cold open air*. This should be so managed as not to cause great fatigue, and be followed by a sufficient meal. The effects of a *monotonous voice* in inducing sleep are well known, particularly when the speaker or reader is dictating some matter not without a considerable tinge of dullness. The old monk's prescription for sleeplessness, viz., to tell your beads, was sound advice. *Hyoscyamus* frequently proves itself a really valuable remedy. It is well given in enema, in a dose not exceeding that for the mouth.

DR. WILLEMIN, OF FRANCE,

In the *Archives Générales de Médecine*, June, 1877, finds most cases of insomnia to be produced either by (1) anæmia, or by (2) irritation. Hygienic measures should never be neglected, and are often sufficient. Of hypnotics the opium alkaloids are best in insomnia from pain. Of these, *codeia* leaves the least *malaise*. *Bromide of potassium* is excellent where there is excitement, but is contra-indicated in anæmia. *Hydrate of chloral* is very efficacious, but must be given with great caution where there is dyspnœa, heart disease, or great debility. *Quinine* relieves cerebral congestion with good effect. In aged and debilitated persons, tonics, stimulants and hydropathy are better than anodynes.

RESUME OF REMEDIES.

Aconitum. Dr. ANSTIE says, "I have often seen insomnia accompanied by a harsh, dry skin yield to the administration of aconite in repeated small doses." One drop of the tincture in a teaspoonful of water every fifteen minutes.

Alcohol. Dr. JAMES SAWYER observes (*Lancet*, June, 1878,) "To many people a 'nightcap' of toddy is a superfluous and hurtful luxury. But it can give, perhaps, better than anything else, rest and sleep to the exsanguine and worried brain."

Atropia. This alkaloid is combined by Dr. ROBERTS BARTHOLOW with morphia to procure sleep, care being taken that there is no excess of atropia, or an amount of atropia sufficient to antagonize the cerebral effects of the morphia. They should be used in the proportions of gr. $\frac{1}{120}$ – $\frac{1}{60}$ of atropia to gr. $\frac{1}{4}$ – $\frac{1}{2}$ of morphia. As the susceptibility to atropia varies immensely, the precise quantity to be employed in any case must be regulated accordingly.

Cannabis Indica is often prescribed in sleeplessness, alone or combined with hyoscy-

amus. Dr. FULLER gives it in chronic rheumatism, to induce sleep, and Dr. OXLEY, (*Liverpool Medical and Surgical Reporter*, 1868,) in chorea, in doses of ♏x of the tincture, for a child of seven, and so on. Dr. TILT gives one-grain doses.

**Chloral* is a valuable remedy for sleeplessness in exhaustion of the brain through severe mental application or excitement of feeling, in convalescence from acute febrile diseases, and in insanity. It should only be used as a temporary remedy, when it is necessary that we should at once secure a fair amount of sleep. The patient ought never to be allowed to swallow this dangerous but valuable drug whenever he feels disposed; he ought only to take it upon the special prescription of his doctor.

Hyoscyamus is very variously esteemed by different writers. It is an uncertain drug, most useful where the insomnia is purely psychic. It acts better combined with quinia. (TILT.)

Ignatia, in small doses, is highly praised by H. G. PIFFARD, in insomnia from nervous erethism. In such doses, he says it is "*par excellence*, the controller of functional phenomena of the cerebro-spinal axis." (Note to PHILLIPS' *Mat. Med.*, 1879.)

Lupulin is often convenient in the insomnia of the aged.

Moschus has proved eminently successful in the hands of Dr. GRAVES, in persons of irritable and nervous disposition. He administers it in one-grain doses every two hours during the day, either alone or with assafœtida, in order to procure sleep at night.

Opium and its alkaloids must be used cautiously in simple wakefulness. Morphia is the most hypnotic. Next, narceia and codeia.

**Potassii Bromidum* is a powerful hypnotic, especially in cases of overtaxed mental energy or emotion, and in the sleeplessness of convalescence from fever, at the termination of acute diseases, or after surgical operations. In the well-nourished, it is, says Dr. JAMES SAWYER, by far the best hypnotic. It soothes the irritated and irritable cerebral cells; it is a direct and absolutely safe brain sedative, and it is marvelously powerful in producing nervous calm. But it must be given in full doses, 30 to 60 grains at bedtime. It is well to conjoin with it some drug which will favor the contraction of weakened cerebral vessels; for this purpose we may give tincture of ergot or tincture of digitalis, one or both. In many cases of chronic wakefulness, arising from mental strain, the patient is distinctly anæmic. Unless the anæmia be remedied the insomnia cannot be cured. (*Lancet*, June, 1878.)

Sumbul, gr. xx, may be tried, but this drug seems to have disappointed expectations.

EXTERNAL REMEDIES.

Cold and Warm Baths, etc. Sleep may often be induced by the temporary application of cold to the general surface of the body. A person who has been lying awake will often fall asleep at once after getting out of bed and sousing his head, neck, and hands in cold water, or after standing at the bedside until he feels chilly, and turning over, shaking up, and cooling his pillows and the bed-clothes. So also warm sponging and warm foot-baths, before retiring, will often induce sleep. Dr. ANSTIE makes the important

observation that the action of all narcotics is greatly aided by heat to the extremities, and a hot mustard foot-bath, on going to bed, will enable the patient to sleep with one-third of his ordinary hypnotic dose.

Electricity. When sleeplessness results from an overworked brain and consequent paresis of the vaso-motor nerves, the stimulus of electricity has been resorted to. ALTHAUS recommends this treatment. Two large pads are used with a Weiss' constant battery of from ten to fifteen cells. One pad is placed over the nape of the neck, the other, which can be conveniently made of an old reflector, and covered with chamois leather, is placed over the stomach. The anode is applied to the back, the cathode to the stomach, for about half an hour at a time.

NEURALGIA.

FRANCIS E. ANSTIE, M. D., LONDON.

This skillful practitioner, in his classic work, *Neuralgia and its Counterfeits*, emphasizes strongly the importance of an abundant and nutritive diet, defective nutrition being nearly always present. His general plan of treatment is as follows:

1. CONSTITUTIONAL TREATMENT.—(*a*) *Nutritive remedies:* fat, cod-liver oil, butter, etc. (*b*) *Preparations of iron* are useful (the carbonate, especially,) only where there is actual anæmia. (*c*) The *nerve tonics* (quinine, arsenic, and zinc,) are beneficial in some cases, and not so in others. Sulphate of quinine is useful in malarial neuralgia, and also, in small doses, in some cases of non-malarial neuralgia, especially in ophthalmic branches of the fifth pair. Arsenic is useful, and more widely so than quinine, in both the above classes of neuralgia. Valerianate of zinc has also been employed with benefit. (*d*) *Constitutional remedies* directed against a real or presumed depravation of the blood by some special poison; as, iodide of potassium and corrosive sublimate against syphilitic neuralgia; colchicum against gouty neuralgia; and iodide of potassium against rheumatic neuralgia.

2. NARCOTIC STIMULANT REMEDIES FOR NEURALGIA.—At the head stands *opium*, represented by *morphia*. Next, *belladonna*, or more exactly, *atropia*. The *subcutaneous injections* of these substances are of considerable benefit. Best medium, hypodermic dose of morphia gr. $\frac{1}{6}$; of atropia gr. $^1/_{20}$–$^1/_{30}$. Belladonna (gr. $\frac{1}{6}$–$\frac{1}{2}$ of the extract) given by the mouth, has a special influence on painful affections of the pelvic organs. *Indian hemp*, internally, (in pills of gr. $\frac{1}{4}$–$\frac{1}{2}$, one

every night,) is very effective in certain forms of neuralgia, especially migraine and clavus. *Chloride of ammonium* (doses of gr. 10–20) is useful in migraine, clavus, intercostal, and hepatic neuralgias. *Sulphuric ether* is supremely useful in certain visceral neuralgias, as gastralgia, uterine, or ovarian neuralgia. *Turpentine* pearls are beneficial in sciatica. *Aconitia* is, ordinarily, too depressing. *Alcohol* is most useful taken at meals, or especially for the relief of pain.

3. EXTERNAL REMEDIES.—Flying *blisters*, of extreme and general use; *mustard plasters*, liniments, and ointments, (best is chloroform, diluted with seven parts of oil liniment;) and *electricity* (continuous low tension current from BUNSEN'S or DANIELL'S battery), are recommended.

PROF. C. E. BROWN-SÉQUARD, M. D., OF PARIS.

124. ℞.	Extracti belladonnæ,	gr. $\frac{1}{6}$.
	Extracti stramonii,	gr. $\frac{1}{5}$.
	Extracti cannabis indicæ,	gr. $\frac{1}{4}$.
	Extracti aconiti,	gr. $\frac{1}{3}$.
	Extracti opii,	gr. $\frac{1}{2}$.
	Extracti hyoscyami,	gr. $\frac{2}{3}$.
	Extracti conii,	gr. j.
	Pulveris glycyrrhizæ,	q. s.

For one pill.

According to circumstances, BROWN-SÉQUARD gives, without producing any great constitutional disturbance, three, four, and even five pills in a day, and sometimes in about eight or ten hours, for the relief of neuralgic or other pains. There must be, therefore, some influence exerted by some of these substances upon the others, diminishing their bad and not their good effects. He recommends the following *hypodermic injection:*

125. ℞.	Morphiæ sulphatis,	gr. $\frac{1}{2}$–$\frac{2}{3}$.
	Atropiæ sulphatis,	gr. $\frac{1}{25}$.

For one injection, in gtt. xx of distilled water.

The doses BROWN-SÉQUARD at first employed were gr. $\frac{1}{2}$ of the sulphate of morphia to gr. $1/60$ of the sulphate of atropia. He now employs those given above, the antagonistic effects of morphia and atropia on the brain rendering it possible, while securing the good effects against pain of the two remedies, to use safely, or at least without great or lasting cerebral or cardiac disturbance, large doses of these narcotics.

In this connection, we may give the doses employed by other authorities in administering morphia and atropia subcutaneously in neuralgia.

Dr. CHARLES HUNTER, of London, says, as a rule, never to use, in the first injection, in any case, more than one-half the stomachic dose of these alkaloids for males, and not more than a third for females.

DR. RUPANER, of New York, places the minimum dose of morphia at gr. $\frac{1}{8}$; the maximum, gr. $\frac{3}{4}$; the minimum dose of sulphate of atropia, gr. $1/60$; the maximum, gr. $1/30$.

Dr. TILT, of London, states that the initial hypodermic dose of morphia (used alone) for a woman, should not exceed gr. $\frac{1}{6}$ (the acetate being the salt he prefers), and that of atropia should not exceed (used alone) gr. $1/10$. In combination, gr. $\frac{1}{6}$ of the sulphate of morphia with gr. $1/30$ of the sulphate of atropia.

DR. ROBERTS BARTHOLOW, CINCINNATI.

The *deep injection of chloroform* for the relief of neuralgia has been practiced by this physician and others with success. He gives the following directions regarding it.

1. *The Method.* The injection consists of 5 to 15 minims of chloroform, thrown into the part by a hypodermatic syringe. This amount is sufficient to produce the best results. The needle is passed into the part deeply enough to reach the neighborhood of the affected nerve. The chloroform is then injected slowly, so that it may diffuse into the tissues immediately adjacent to the sheath of the nerve. The action is local, and not systemic. He has heard with amazement of the subcutaneous use of chloroform, as morphia is employed. Thrown into the subcutaneous connective tissues, not only is the pain great, but there is danger of producing abscess and sloughing.

2. *The Site of the Injection.* This method is applicable only to superficial neuralgia. It is essential to success that the chloroform reach the tissues about the trunk of the nerve. In the case of tic-douloureux, the chloroform must be deposited near the foramina at which the various divisions of the nerve emerge; in the case of sciatica, about the ischiatic notch. The same rule obtains in regard to other forms of neuralgia.

3. *Theory of its Mode of Action.* The local effect of chloroform is to produce anæsthesia and analgesia. It accomplishes this result in part by suspending the power of the nerve to transmit impressions, in part by the local swelling which acts mechanically on the nerve-trunk. For the production and perception of pain, it is necessary, first, that an irritation be made at the periphery; second, that end-organs exist

for the reception of the painful impression; third, that conducting fibres are in a position to transmit the pain to the centres of consciousness; fourth, that these same conducting fibres are in a condition to refer outwardly the painful impression to the point at which it originated. It follows that, when the nerve-trunk is rendered incapable of transmitting the painful impression, the pain ceases to exist, or, what is equivalent, ceases to reach the centres of conscious impressions.

The same writer extols a combination of anodyne and hypnotic remedies as follows:

126. R. Chloral hydratis,
Camphoræ pulv., āā ℥j.
Morphiæ sulphatis, gr. ij.
Chloroformi, ♏xl.

The morphia will dissolve more readily if aided by gentle heat. Atropia may be added to this solution, if desired. The proportion of atropia, as also of morphia, is determined by the uses to which the remedy is to be devoted. To the 160 minims of the above solution, $^1/_{12}$ of a grain of atropia may be added. Twenty minims of this solution will contain $7\frac{1}{2}$ (seven and a half) grains of chloral, the same quantity of camphor, $\frac{1}{4}$ of a grain of morphia, and $^1/_{96}$ (one ninety-sixth) of a grain of atropia.

This combination, Dr. B. extols as of wide application in all forms of neuralgic suffering. Locally, it may be painted on the surface, in superficial neuralgia, in *coccydynia*, in *acute rheumatism*, *cancer*, *ulcers*, etc.

Internally, it should be administered in capsules, or on a lump of sugar, not mixed with water. As an anodyne, the dose is gtt. x–xxx. Whenever pain or convulsive nervous action is to be allayed, Dr. B. believes no combination of remedies will be found equal to this one in general usefulness.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

127. R. Aconitiæ, gr. iv.
Veratriæ, gr. xv.
Glycerinæ, f. ℥ ij.
Cerati, ℥ vj. M.

To be rubbed over the painful parts, care to be taken to see that there is no abrasion of the skin.

(Prof. Gross sometimes employs veratria ointment in cases of neuralgia, of the strength of ℥ j to ℥ j.)

128. ℞. Potassii bromidi, ℥ ss.
Succi conii, f. ℥ x.
Aquam cinnamomi, ad f. ℥ iij. M.
A dessertspoonful to be taken three times a day.

Useful in epileptiform neuralgia.

129. ℞. Strychniæ sulphatis, gr. ss.
Quiniæ sulphatis, gr. xv.
Cinchoniæ sulphatis, ℥ j.
Pulveris rhei, ℥ ss.
Extracti gentianæ, q. s. M.
Divide into thirty pills; one to be taken four times a day, in intercostal neuralgia of malarial origin, associated with constipation.

DR. NATHAN S. DAVIS, OF CHICAGO,

States in his *Clinical Lectures on Important Diseases*, 1874, that in many severe and obstinate cases of neuralgia, sciatica, tiedouleureux, etc., careful examination will reveal traces of inherited or acquired syphilis. In such, the only hope of recovery must be founded on an effort to change the diathesis. The means best calculated to effect this are:

1. Regular and judicious exercise in the open air.

2. A plain nutritious diet, chiefly of milk, farinaceous articles and fruits, with absolute exclusion of all alcoholic drinks, tobacco, and *strong* tea and coffee.

3. To use of alteratives which will not depress the system.

To effect the last mentioned, small doses of the iodides and mercury are well to begin with, as

130. ℞. Sodii iodidi, ℥ iij.
Hydrarg. chloridi corrosivi, gr. j.
Extracti conii fluidi, f. ℥ j.
Syrupi simplicis,
Aquæ menthæ, āā f. ℥ j. M.
A teaspoonful before each meal and at bedtime.

As soon as this preparation has had a visible effect on the gums or the Schneiderian membrane, (if the latter has been involved,) it should be discontinued, and the following given in its place:

131. ℞. Potassii iodidi, ℥ iij.
Potassii bromidi, ℥ vj.
Extracti conii fluidi, ℥ j.
Aquæ menthæ, ℥ iij. M.
A teaspoonful three or four times a day.

If, under this treatment, which must be continued six or eight

weeks, the patient becomes debilitated, some direct tonic must be given. The best Dr. DAVIS has used in such cases is the *syrupus ferri pyrophosphatis* f. ʒ j half an hour before each meal; or, a pill as follows:

132. ℞. Ferri citratis, gr. ij.
Strychniæ, gr. $\frac{1}{30}$. M.
For one pill. One thrice daily before meals.

In many cases of uncomplicated neuralgia, Dr. DAVIS has derived great advantage from *belladonna*, in such combinations as the following:

133. ℞. Ætheris nitrici, f. ℥ ij.
Tincturæ belladonnæ, f. ʒ ij. M.
A teaspoonful in sweetened water every three or four hours.

134. ℞. Chloroformi,
Tincturæ belladonnæ, āā f. ℥ iij.
Syrupi aurantii corticis, f. ℥ iij. M.
A teaspoonful every two hours until the pupil becomes slightly dilated, when the interval between the doses should be doubled.

135. ℞. Tincturæ belladonnæ,
Tincturæ gelsemii, āā f. ℥ ss. M.
Twenty drops every two or three hours.

H. W. FULLER, M. D., LONDON.

This writer also recommends highly the external application of *aconitia* in neuralgia, and in intercostal rheumatism. When, from the situation or other circumstances, it is difficult to apply the ointment, he directs the following solution:

136. ℞. Aconitiæ, gr. iij–iv.
Spiritûs rectificati, f. ʒ vj.
Glycerinæ, f. ʒ ij. M.
To be applied by means of a camel-hair brush until the pain is relieved. It should only be applied in chronic cases, it proving ineffective so long as there is acute action. Even when the relief of pain is only temporary, this is an advantage of no inconsiderable importance.

Another local application recommended by Dr. FULLER, is the following:

137. ℞. Extracti belladonnæ, ℥ j.
Tincturæ opii, f. ℥ j.
Glycerinæ, f. ʒ iij. M.
A piece of lint wet with this mixture, and covered with oiled silk, often affords great relief when placed along the course of the nerve.

The following local application is also often useful:

138. ℞. Acidi hydrocyanici diluti, f.℥ ss.
Glycerinæ,
Aquæ rosæ, āā f.℥ ij. M.
To be painted over the seat of the pain with a camel-hair brush.

Or:

139. ℞. Tinctûræ opii,
Spiritûs ætheris compositi,
Glycerinæ, āā f.℥ iij.
Extracti belladonnæ, ℈ j. M.
Speedy relief often follows the application of a strip of flannel, soaked in this mixture, along the course of the nerve, and then covered with oiled silk, to prevent evaporation.

PROF. S. D. GROSS, M. D., PHILADELPHIA.

140. ℞. Quiniæ sulphatis, ℈ ij.
Morphiæ sulphatis, gr. j.
Strychniæ, gr. ¾.
Acidi arseniosi, gr. j.
Extracti aconiti, gr. x. M.
Divide into twenty pills. One to be taken three or four times a day. Add to the recipe, ferri sulphatis ℈ ij, if the system be anæmic.

This pill is useful in a great variety of cases of neuralgia. Its effects should, of course, be carefully watched.

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK.

141. ℞. Extracti belladonnæ, gr. v.
Divide into twenty pills. One thrice daily, the dose to be increased as necessary.

The use of belladonna is chiefly to change the habits of the system. This drug, although at one time much overlauded, is very efficient in the treatment of neuralgia. Our author has not used atropia often, as the dose is difficult to graduate.

Hypodermic injections of morphia may be used during the paroxysms of pain. In their use, avoid the face; a good point is the inside of the arm.

142. ℞. Tincturæ aconiti, f.℥ ss.
Rub with a rag upon the painful part, until a sense of pricking is felt.

This is next in value to the subcutaneous use of morphia. The action is often very powerful. Dr. H. once caused temporary paralysis of the arm, in a lady, by the too free application of the tincture.

Chloroform may be used externally, internally, or by inhalation, not carried to insensibility. Repetitions of the inhalation may break up the paroxysm.

Hypophosphites are useful; may be given in doses of from 10 to 20 grains. They act by setting free phosphorus in the stomach.

Galvanism.—The direct galvanic current may be successfully used both for the relief of the paroxysm and for breaking up the habit of the disease. For the first, apply the poles so that the position is near the seat of the greatest pain, and pass the current continuously for several minutes. To change the habit of the system, apply one pole to the nape of the neck, and the other over the course of each sympathetic nerve, moving it along the neck. DUCHENNE says that neuralgia can generally be relieved by faridization. Dr. H. has not been so uniformly successful, but often effects a cure by the application mentioned.

The use of tea generally aggravates neuralgia, while coffee, on the contrary, does not, but if strong, is often of service.

In *neuralgia of the fifth nerve,* various authorities have recently reported favorably of *croton-chloral.* Dr. E. P. HURD, of Massachusetts, has employed it in various cases of intractable neuralgia, in the following formula:

143. ℞.	Croton-chloralis,		ʒj.	
	Glycerinæ,			
	Syrupi aurantii,	āā	f.ʒj.	M.

A teaspoonful as required.

Dr. JULES WORMS, after several experiments made with a view of rendering this drug less repugnant to the taste, recommends the following formula:

144. ℞.	Croton-chloral,	1 gram.
	Glycerine,	60 grams.
	Water,	60 "
	Oil of peppermint,	3 drops.
	Simple syrup,	25 grams. M.

This amount at one dose.

Intercostal neuralgi aor pleurodynia, a complaint which is often a very painful and annoying one, may generally be relieved completely by applying two or three strips of plaster firmly round the side over the seat of pain. The emb. roborans is a good form of plaster for these cases. It is desirable that the practitioner should himself see that the application is properly made, and that it is not left to the patient, as the result entirely depends on its being accomplished in an effectual manner.

145. ℞. Extracti belladonnæ, ℥ ss.
Chloroformi, ♏ l.
Glycerinæ, f. ℥ ss. M.

Anoint with this liniment, several times a day, the affected parts in neuralgia of the anus, when there exists neither fistula nor any lesion of the rectum.

GUY'S HOSPITAL, LONDON.

146. ℞. Liquoris plumbi subacetatis,
Tincturæ opii,
Mellis, āā f. ℥ ij.
Confectionis rosæ, ℥ j. M.

Make a liniment.

This is known in the pharmacopœia of the hospital as *linimentum plumbi opiatum*, and is much used.

LONDON HOSPITAL.

147. ℞. Tincturæ aconiti,
Linimenti saponis, āā f. ℥ j. M.

To be used as an anodyne liniment.

RÉSUMÉ OF REMEDIES.

**Acidum Arseniosum* is a remedy of a deservedly high reputation in neuralgia, having a wider range of application than quinine. In malarial cases it should be given in larger doses (♏x–xxx, thrice daily, of Fowler's solution,) than in non-malarial. In the latter, ♏v of Fowler, or gr. $\frac{1}{10}$ of the *arseniate of sodium*, in pill, with extract of lupulin, will prove effectual in the cases amenable to this remedy. It may also be given hypodermically and endermically.

***Aconitia.* (See F. 136.) Dr. E. C. Seguin states that Duquesnel's aconitia in doses of $\frac{1}{8\,4}$ to $\frac{1}{2\,0\,0}$ of a grain, three times daily, is a powerful agent for relieving and curing trigeminal neuralgia. Form for administration:

148. ℞. Aconitiæ, (Duquesnel's,) gr. $\frac{1}{10}$.
Glycerinæ, ℥ j.
Alcohol, ℥ j.
Aq. menth. pip., ad ℥ ij. M.

One teaspoonful (one hundred and fortieth of a grain) two or three times a day, on an empty stomach.

Prof. Gubler also obtained some brilliant successes with this substance. He said, indeed, he had never met a neuralgia of the fifth pair which resisted it. He used the *nitrate of aconitine*, in doses of gr. $\frac{1}{140}$, in solution, or Hottot's aconitine, dose, gr. $\frac{1}{2\,8\,0}$, pushing it up slowly to gr. $\frac{1}{12}$, if the disease did not yield. He disapproved of pills, as they may not be dissolved.

**Aconitum* is a remedy of great value in chronic cases of neuralgia, when the secretions are in order and the general health not much impaired. Its use should, therefore, be often preceded by purgatives and tonics. In acute

cases it is not indicated before all signs of active disease have been subdued by other means. Its external use should usually precede its internal administration, which need only be resorted to in case of failure of the former. The combination of quinine with aconite seems to increase its efficacy, and add permanency to the relief afforded by it. This combination is especially indicated in anæmic or debilitated patients, where there is no apparent nerve lesion or exciting cause.

Æsculus Hippocastanum. The alkaloid of horse chestnut, *esculin*, has been given in doses of gr. xv, twice daily, with success, by French physicians, in the treatment of periodic neuralgia.

Æther. In simple neuralgia, particularly of the nerves of the head, Prof. STILLÉ recommends combining the anodyne effect of ether with its revulsive effects, by applying it on small compresses covered with some solid substance, immediately over the points where the painful nerve emerges from its bony canal, or where it in any other way becomes superficial.

Alcohol. Dr. ANSTIE has several times observed, in acute neuralgia, that after large doses of various narcotics had been tried in vain, the first real and substantial relief was obtained by the use of a moderate dose of alcohol; the consequence of overdosing the remedy is, however, nearly always disastrous.

Ammonii Chloridum is often of signal benefit, in doses of 20 to 30 grains.

Anthemis. Chamomile, in substance, in doses of gr. lx, or in a very concentrated infusion, is administered with success in France, in neuralgia of the fifth nerve.

Apiol is said to be of service in intermittent neuralgia.

Beberiæ Sulphas has proved successful in some cases, after the failure of quinine. In doses of gr. x, night and morning, it is more effective than in smaller doses.

**Belladonna*, whether used externally or internally, ranks among the first of the sedatives and anodynes of service in neuralgia. (P. 77.) It occasionally fails of effect, however. BROWN-SÉQUARD combines it with six other narcotics, for the relief of neuralgic pains. (F. 124.) *Atropia* is preferred by some to the preparations of belladonna, but the dose is more difficult to graduate. The sulphate is the most soluble.

Caffea is much employed by Belgian physicians. Prof. HAMMOND finds that it is often of service, but that tea generally aggravates neuralgia.

Cannabis Indica is ranked as a neuralgic remedy next in value to opium and belladonna and their alkaloids.

Chloroformum always acts as a palliative in, but rarely cures, neuralgia.

Conium is inferior to opium and belladonna.

Croton Chloral Hydrate, in doses of gr. ij every hour, has been found promptly to mitigate paroxysms of neuralgic pain.

Cupri Sulphas Ammoniatum. The value of ammoniacal sulphate of copper in the treatment of this affection has been asserted by M. FERÉOL, in a communication, in April, 1879, to the Académie de Médecine. He states that in cases in which every treatment has failed, even the administration of gelsemium and of aconitia, a cure or remarkable relief may be obtained to

the most severe symptoms by this drug. The dose is gr. j three times daily, and may safely be increased to gr. v.

Digitalis has proved of service in the hands of Dr. FULLER, in cases in which the pain is intermittent. He gives ♏x–xx of the tincture three or four times a day.

Ergota is, according to PHILLIPS, (*Mat. Med.*, 1879,) most useful in visceral neuralgias, especially *gastralgia*.

Ferrum is useful in cases associated with anæmia; in others it fails.

Galbanum has been found of service in neuralgia dependent upon uterine derangement, given as follows:

149. ℞. Pilulæ galbani compositæ, gr. iij–vij.
Pilulæ hydrargyri, gr. iij. M.
One pill to be taken every other night.

Gelsemium is an important addition to the therapeutics of neuralgia, especially in non-congestive forms. According to Dr. E. HEROGUELLE, of Paris, (*Medical Examiner*, December, 1877,) it acts favorably in cases of dental neuralgia of the fifth pair, of the frontal, temporal, supra, and infra-orbital nerves, the brachial plexus, the intercostal and ilio-lumbar nerves. Sciatic neuralgia appears to resist, rather more than other neuralgias, the calming effects of the drug. Two to five drops of the fluid extract is the dose. According to Prof. MASSINI, the cases in which gelsemium produces most benefit are those of simple rheumatic neuralgia of the alveolar branches of the trigeminus; in those it rarely fails. It also sometimes relieves the pain remaining after the stopping of a carious tooth. Where there is any inflammatory affection of the bone or periosteum, no good can be expected from the remedy.

Glonoin (nitro-glycerine) in very small doses (one drop diluted with 100 of rectified spirit), has been recommended by HAMILTON.

Guaiacum is of service in forms of neuralgia of a rheumatic character. From ♏xx to ♏xl of the ammoniated tincture may be given every five hours, until relief is obtained.

Hyoscyamus is considered by Dr. HARLEY as more efficacious than belladonna, in neuralgic affections of the internal viscera.

Ipecacuanha. Dover's powder at night, often affords much comfort. An eighth or a quarter of a grain of morphia may be added when indicated.

**Morphia*, hypodermically injected, affords speedy and often permanent relief. Dr. ANSTIE has cured cases by three or four injections of gr. $\frac{1}{6}$, which would have been very tedious under the old plan of treatment. Many cases yield in a week or ten days, to hypodermic injections twice daily.

Oleum Cajuputi may be employed with advantage, either externally or internally in cases unconnected with inflammatory action.

Oleum Terebinthinæ is not unfrequently of benefit. It is equally appropriate to the inflammatory and non-inflammatory states of neuralgia, and it is said relapses are less frequent after it than after most other remedies.

Oleum Tiglii has been used with success in some cases, in which it has seemed to exercise a special influence apart from its purgative action.

Opium, both internally and externally used, is of great service in certain cases; but ordinarily, far inferior to morphia injected subcutaneously.

Physostigma has exerted local anodyne effects in several cases of neuralgia reported

**Plumbi Acetas* is said to be a safe and effective remedy in many cases of superficial neuralgia, and even in neuralgia of the abdominal viscera.

**Potassii Bromidum*, in full doses, often effectually relieves some forms of neuralgia.

Potassii Chloras, in doses of gr. xxx a day, has, in three weeks' time, it is reported, produced wonderful effects in facial neuralgia.

Potassii Iodidum is of service in neuralgic affections dependent upon an inflammatory state of the nerve coverings.

Pyrethrum, the root, chewed, will frequently relieve facial and dental neuralgia.

**Quiniæ Sulphas* is of great value in all neuralgias of malarial origin, and in a certain number of non-malarial cases. In the former, it should be given in full doses (gr. v–xx), shortly before the expected attack; in the latter, doses of gr. ij–iij thrice daily, are as large as are likely to benefit. Dr. ANSTIE says that he knows of no circumstances which indicate beforehand, that quinine will be useful in non-malarial cases, excepting that in neuralgia of the ophthalmic branches of the fifth, it is more effective than in other non-malarial neuralgias. Prof. GROSS frequently combines quinine with morphia, strychnia, arsenic, and aconite, in the treatment of neuralgia. Dr. TANNER combines it with belladonna and camphor, and with the chloride of arsenic.

150. R. Quiniæ sulphatis, ℈ j.
Liquoris arsenici chloridi, f. ℥ iij–iv.
Acidi sulphurici aromatici, f. ℥ ij.
Syrupum zingiberis, ad f. ℥ iij. M.

One teaspoonful in two tablespoonfuls of water, directly after breakfast, dinner, and tea, in severe neuralgia.

Salicin has lately been spoken of highly in this disease.

Sodii Arsenias is of service in neuralgia where other arsenical preparations are badly borne.

Sodii Carbonas often, in full doses, speedily arrests neuralgia connected with acidity of the stomach.

Sodii Hypophosphis, in drachm doses, given in beef tea, thrice daily, has proved successful.

Stramonium is only found of benefit by Dr. FULLER where the symptoms shift from limb to limb, but never when the disease is stationary.

Strychnia is of use in epileptiform neuralgia and locally.

Valeriana exerts a favorable influence in neuralgia associated with hysteria. The ammoniated tincture may then be given, combined with guaiacum.

Zinci Valerianas is a serviceable remedy in those cases in which the disease is purely nervous, and in those which accompany uterine derangement.

Zinci Phosphas. Dr. CAMILLE TROUBERT (*Gazette des Hôpitaux and Courier Médicale*, 1878,) mentions a number of cases in which this treatment, first proposed by ASHBURTON THOMSON, was successful when other means failed. Two or

three granules, of 4 milligrammes each, were given daily. It is important that the granules should be used, as other preparations are uncertain.

**Stimulants.* Dr. ANSTIE has found in some cases of acute neuralgia (particularly of the fifth nerve), that after the failure of various narcotics, a moderate dose of alcohol has at once given relief. He also states that, in certain chronic neuralgias of the aged, where the power of digesting ordinary food is almost suspended by reflex irritation, an almost exclusively alcoholic diet, continued for some time, occasionally works wonders.

EXTERNAL REMEDIES.

***Aconitum and Aconitia,* locally applied over the seat of pain, is a most powerful palliative in neuralgic affections. Dr. FULLER, having observed that it fails so long as signs of active disease exist, restricts its use to purely chronic cases. Dr. DA COSTA sometimes prescribes it with veratria, in ointment. (F. 127.)

Acupuncture is of use after inflammation has subsided, in those cases in which there is effusion within the sheath of the nerve. It then promises speedy and effectual relief, but is useless, and may be prejudicial, in all other cases.

Æther. The local application of atomized ether is now often resorted to.

Aqua Ammoniæ. The following method of applying strong water of ammonia in neuralgia, is recommended by Prof. STILLÉ: Take small disks of cloth, about a half or three quarters of an inch in diameter, and apply them, moistened with the ammonia, over such points in the course of the affected nerve as are tender upon pressure, or are the seat of spontaneous pain. Cover the pieces of cloth with coins, buttons, or other convenient bodies, to prevent evaporation. Cotton contained in a thimble and saturated with the caustic liquid, forms a still more convenient arrangement. As soon as slight vesication occurs, the pain is relieved, yet not so thoroughly as when the same effect has been obtained by means of cantharides. The addition of morphia to the vesicating liquid, renders its effect more prompt and certain.

Argenti Nitras, administered hypodermically, five or six drops of a strong solution, (1 to 4) has been used with prompt results by M. LUTON. (*La France Médical,* June, 1877.) Intense pain is caused at first.

Belladonna is much used externally. TROUSSEAU highly recommends the external application of belladonna when the neuralgia is superficial. In such cases, may also be employed a compress saturated with a solution of atropia. Dr. FLINT uses atropia in preference to belladonna, in liniments and ointments. These applications, however, are all inferior to the hypodermic injection of atropia. Dr. A. WALLER, of Geneva, recommends that this and similar extracts and alkaloids should be dissolved in chloroform for external use, as they are more easily absorbed.

**Cantharis.* Blisters should be tried in cases of any severity; if the hypodermic injection of morphia and atropia has failed, flying blisters should be employed. Dr. ANSTIE states that, in numerous early cases, one or two flying blisters, applied successively over the different points in the course of the painful nerve, have at once and permanently arrested the disease.

Chloroformum may be applied pure (especially serviceable when the pain is localized in a small space) or in liniments. (F. 145.) "Gelatinized chloroform," made by incorporating one part of chloroform and two parts of white of egg, is a useful form for application.

Electricity seems to be of service only in cases unconnected with irritation in distant parts of the body; then the continuous galvanic current is often of essential service. If employed before the pain has subsided, the interrupted current very generally aggravates the patient's sufferings. (See HAMMOND's remarks, p 84.)

Frigus. Ice applied to the spine, by means of his spinal bag, is recommended by Dr. CHAPMAN.

Hydrargyri Iodidum Viride. The following ointment has been strongly recommended:

151. ℞. Hydrargyri iodidi viridis, ℈ ij.
Adipis, ℥ j. M.

***Hypodermic Injections.* Dr. ANSTIE says that the discovery of the hypodermic method has instituted a new era in the treatment of severe neuralgias. Atropia, or morphia, or the two combined, may be used. The face should be avoided, in making the injection. Prof. BARTHOLOW says: "The neuralgias are best treated by the combined morphia and atropia solution. There are several reasons for this: much larger doses of morphia may in this way be injected without danger to the patient; and the larger the quantity, as BROWN-SÉQUARD has shown, the greater the curative power. Morphia and atropia combined are more effective than either singly. The systemic effects during the time of maximum narcosis, and also after the narcosis has disappeared, are much less unpleasant and depressing when the two agents are combined than when morphia is used alone. Sometimes atropia is better borne than morphia, and *vice versa:* in this case, the agent whose effects are least unpleasant, should be in excess." He recommends the following proportions: $\frac{1}{48}$ to $\frac{1}{120}$ of a grain of atropia, $\frac{1}{4}$ to $\frac{1}{2}$ of a grain of morphia. The physiological effects of atropia here predominate, but the toxic effects are guarded by the morphia. For the facial neuralgia of pregnancy, he uses morphia alone. This treatment promptly cures the affection, a fact first pointed out by Dr. H. R. STORER, of Boston. "These cases, as is well known, are extremely obstinate under the old methods of treatment, and those who have suffered from them on former occasions, are exceedingly grateful for the relief so promptly and permanently afforded by the hypodermic method."

Iodoform has been recommended for local use in neuralgias, in the form of saturated solution in chloroform or ether.

**Leeches* applied along the course of the nerve often afford immediate relief after the failure of anodynes and other local measures. They are particularly indicated when there is inflammatory action or much vascular excitement.

Mentha and Monarda. Oil of horsemint, in liniment, with camphor and laudanum, sometimes affords prompt relief. Oil of peppermint is at times very prompt and efficient. An alcoholic solution is used.

Menthol, or Peppermint Camphor, has been recently introduced for similar purposes. One or other of these substances is included in most popular "pain-killers."

Neuroteny, (nerve stretching,) *Neurotomy*, (division of the nerve,) and *Neurectomy*, (exsection of a piece of the nerve,) are surgical resources in very obstinate cases.

Rectal Suppositories of belladonna, hyoscyamus and opium are sometimes employed.

Stramonium is sometimes employed locally in the same manner as belladonna, to which, however, it is inferior.

Veratria, when there are no active or inflammatory symptoms present, is often beneficial, externally applied, the ointment being rubbed in diligently until it causes a sense of heat and tingling. It is inferior, however, to aconitia.

PARALYSIS.

The forms of paralysis are numerous, and treatment must always be guided by the character of the changes in the cord, or other pathology of the disease.

In *general paralysis* a plausible plan of treatment has been suggested (*Berliner Klinische Wochenschrift*, No. 21, 1877,) by

L. MEYER, M. D., BERLIN.

On the theory that it is a chronic encephalitis, he applies over the great fontanelle, on a space as large as a dollar, some antimonial ointment. He repeats this operation at the end of twenty-four hours, using an amount of ointment the size of a pea, and a little piece of linen. The second friction is managed with care, so as to save the skin. Generally these two frictions are sufficient; if not, a third; a small quantity of the ointment is applied without friction, and a piece of linen to which it is applied may be left on the surface.

In the course of three or four days the tumefaction of the scalp extends to the forehead and even to the face, more rarely to the occiput or the nucha. The pustular eruption is insignificant, the pustules are small, concrete and dry rapidly.

After the swelling has become intense it may be covered with warm poultices. In a few days the suppuration is so ample that it completely separates the integuments, which slough off spontaneously. Too resistant adherences are destroyed with caustics or the scissors. To reach this point usually fifteen days are required. From that

time the suppuration is treated for two or three months with basilicon ointment. The patient may take during the same time moderate doses of iodide of potassium, and should have a substantial diet. Furthermore, he should be in the open air as much as possible, employed in gardening, etc., only taking care to avoid exposure to extreme heat. Baths should be forbidden, as conducing to cerebral congestion.

During fifteen years this treatment has been employed by MEYER, in the cases of seventeen general paralytics, two of whom remain under treatment. Eight of the fifteen were cured, and their cases are given in his memoir. One of them, however, suffered a relapse after two years.

The periosteum may be affected and there may occur exfoliations, more or less considerable, of the bone. The author met with this accident a number of times, but attaches to it no special importance. The loss of hair is readily concealed.

STRYCHNIA AND ITS ADMINISTRATION.

Of the numerous drugs which have been used in paralysis, none equals *strychnia* in efficaciousness.

Dr. F. W. HEADLAND, of London, states that it is only successful in paralysis in cases where the injury to the nervous centre has healed up, and when the limb continues paralyzed merely because the motor nerves have lost the power of transmitting the necessary impulse, from having been so long unaccustomed to discharge this office. On the other hand, when the lesion of the nervous centre is of recent occurrence, or when it has been of so serious or extensive a nature as to admit of no repair in the course of time, the remedy will be ineffectual.

Sir THOMAS WATSON lays down the general rule that strychnia can be of benefit in these cases only when the cord is free from disease.

Prof. WILLIAM A. HAMMOND has employed it very successfully by a new and improved method, in treating *facial paralysis*. (*St. Louis Clinical Record*, May, 1878.) The improvement consists in the administration of strychnia in increasing doses to the point of rapidly—as rapidly, in fact, as is consistent with prudence—bringing the patient under its full physiological influence.

For this purpose he makes use of a solution of the sulphate of strychnia in the proportion of 1 grain to the ounce of water.

Every 10 minims of such a solution contain $^1/_{48}$ of a grain of the medicine. Generally, he begins with 10 minims of this solution three

times a day for the first day; the next day 11 minims are given three times; the next 12, and so on till the patient experiences a sensation of cramp or rigidity in the legs, or in muscles of the back of the jaw. Usually the cramp is first felt in the calves of the legs. The further administration is now stopped, and, if necessary, on the following day the solution is given as before, in doses of 10 minims, and the doses are again run up to the extent of producing the muscular cramp. Of course, with this, electricity, passive exercise, and support of the affected side of the face by a little hook placed in the angle of the mouth and attached to the ear by an elastic band, are advantageously combined.

ELECTRICITY IN PARALYSIS.

DR. G. VIVIAN POORE, OF LONDON,

Lays down the following rules as to its application to paralysis: 1. *If the paralysis to the will remain absolute, and if the contractility of the muscles be perfect, we do no good by persevering with electrical treatment.* This condition is often met with in hemiplegia. The patient is absolutely helpless on one side, although the muscles are in no degree wasted, and their irritability remains normal. 2. *If the paralysis to the will remain absolute, and if the irritability of the muscles be diminished, then electricity is useful, in so far as it helps to improve the nutrition of the muscles, and restore their normal degree of irritability.* The normal degree of irritability being restored, (the paralysis to the will remaining absolute,) then electrical treatment may be discontinued. The irritability of muscles may be diminished from mere want of use, and electricity may serve to restore this irritability. 3. We should bear in mind the advice of Sir THOMAS WATSON, that "our aim should be to preserve the muscular part of the locomotive apparatus in a state of health and readiness, until, peradventure, that portion of the brain from which volition proceeds having recovered its functions, or the road by which its messages travel having been repaired, the influence of the will shall again reach and re-animate the palsied limbs." 4. Whenever we meet with the *degenerative reactions*, we should employ that form of current to which the muscles most readily respond, which is invariably the galvanic. We must persevere doggedly, and we may find our perseverance rewarded by the gradual return of the normal muscular irritability. 5. If the irritability to both forms of current has completely disappeared, we are not justified in persevering

too long, nor in holding out delusive hopes to the patient. Nevertheless, treatment should not be abandoned without a patient trial. In treating paralysis with electricity, an exact diagnosis is, above all things, necessary, and we should be able to bring our knowledge to decide as to whether or not the paralyzing lesion is of a permanent nature, or one that, according to our pathological knowledge, is or is not removable or susceptible of improvement. If not, then our efforts to cure must of necessity be unavailing. It is in those cases where the paralyzing lesion has disappeared, or has improved, and we have only to combat with the effects produced by it, that our efforts are the most successful. *Hysterical paralysis* is especially susceptible to electrical treatment, and with it we occasionally work apparent miracles. When a patient, who has no will to move her muscles, sees that her muscles can be made to move in spite of her will, it is no wonder that such a discovery should exercise a wholesome moral influence over her mental condition.

Other authors state that it should never be resorted to in recent cases, if there be reason to suppose that effused blood or coagulum remains unabsorbed, nor so long as there are any febrile or inflammatory symptoms present. It is of no benefit in cases with organic lesion of the nervous system. Its greatest utility lies in cases of purely *local* paralysis. Great and terrifying shocks are rarely beneficial where small and repeated shocks have failed. Both faradization and galvanism have been employed with success. Electro-puncture has also its advocates.

RÉSUMÉ OF REMEDIES.

Ammonii Formias is recommended by Dr. RAMSKILL as a stimulant in cases of chronic paralysis accompanied by general torpor.

Argenti Nitras, in doses of gr. $\frac{2}{3}$–j daily, has been employed with success by BOUCHUT in paraplegia and progressive general paralysis, resulting from sexual or alcoholic excess.

Arseniosum Acidum in paralysis from cerebro-spinal sclerosis, is well spoken of by FLINT.

Cantharis. Sir THOMAS WATSON recommends tincture cantharides in paraplegia. Generally, when it does good, it acts as a diuretic.

Cocculus Indicus. According to PHILLIPS, this is a very valuable remedy in partial palsies accompanied by giddiness, as also in hysterical, choreic and epileptic hemiplegia. The dose of the tincture (℥j to ℥j) is gtt. ij–x; of *picrotoxin*, the active principle of the berry, gr. $\frac{1}{12}$–$\frac{1}{60}$.

Ergota is recommended in those forms of paralysis arising from spinal congestion, in paraplegia complicated with menstrual irregularity, (MEADOWS,) and in

the constipation of the paralytic, after the most powerful cathartics have failed. (WARING CURRAN.)

Ferri et Strychniæ Citras is serviceable in paralysis associated with anæmia.

Hydrargyrum. Dr. MAUDSLEY says: "To administer mercury systematically in general paralysis, as has been done, is as unaccountable in theory as it undoubtedly is pernicious in practice."

Oleum Tiglii has been very highly commended in some obscure cases—drops 1–2 every two hours until the bowels are acted upon, and then an opiate to relieve the griping. (J. W. DAVIS, *Nashville Jour. of Med. and Surg.*, May, 1878.)

Phosphorus has been successfully employed in some cases in the form of the oil, (made by gently warming two parts of phosphorus in 100 parts of almond oil, in a closed flask, for about twenty minutes, and decanting off, when cool, the oil from the undissolved phosphorus. Dose, gtt. iij–viij, in emulsion, or with cod-liver oil.)

Picrotoxin. See *Cocculus Indicus.*

Potassii Iodidum proves successful in syphilitic paralysis. It should be given in doses of ʒj and more, combined with sublimate, gr. $\frac{1}{20}$.

**Strychnia and Nux Vomica.* (See p. 92.)

Sulphur gives very good results, according to Dr. GRAVES, in paralysis of an asthenic or chronic character, when employed as a sequel to a course of strychnia. He uses it in the form of an electuary and in baths.

Toxicodendron is recommended by TROUSSEAU in paraplegia from concussion of the spinal marrow, administered as follows: gr. v the first day of treatment, increased daily in the same amount until gr. lx a day are reached. It is asserted that it strengthens rather than enfeebles digestion, and causes no inconvenience other than occasionally slight stranguary.

EXTERNAL REMEDIES.

Armoraciæ Radix. Poultices of fresh horseradish root form a ready counter-irritant in paralytical affections.

Cajuputi Oleum makes an excellent embrocation for paralytic limbs. Diligently rubbed in, it stimulates the parts and relieves pain when present.

Delphina is believed by Dr. TURNBULL to be more useful in paralysis than veratria, from its property of exciting the circulation in the affected part.

Mucuna. The setæ maintained on the affected limb by a bandage have been employed as a local stimulant in paralysis.

Myristica. The oil, diluted with soap liniment, forms a useful stimulating embrocation.

Sulphuricum Acidum. The following ointment, perseveringly employed, has resulted beneficially:

152. R. Acidi sulphurici, f.ʒj.
Adipis, ʒj. M.

It acts as a powerful irritant.

Veratria ointment, diligently used, has occasionally been followed by great improvement.

Cold Shower Baths, in cases of paralysis consequent on severe inflammatory attacks of the brain and spinal column, are often attended with benefit, but sometimes fail, and may even aggravate the symptoms.

Cantharis. Blisters to the spine are useful when there is reason to expect effusion within the theca.

Electricity. (See above p. 93.)

Issues and Setons are sometimes employed with advantage.

Leeches at the verge of the anus are beneficial where there is suppression of an habitual discharge, as from piles.

Metallotherapy. It has been positively shown in the Parisian hospitals that the application of metal rings and plaques to the paralyzed limbs restores sensation and motion, under certain circumstances, and this when the elements of both faith and fraud are carefully eliminated.

PROGRESSIVE LOCOMOTOR ATAXIA (POSTERIOR SPINAL SCLEROSIS.)

ALLEN M. HAMILTON, M. D., NEW YORK.

The treatment is entirely empirical.

In the early stages ergot and bromide of sodium control the pain.

153. ℞.	Fl. extr. ergotæ,	f.℥ij.	
	Sodii bromidi,	f.℥iss.	
	Aquam camphoræ,	ad f.℥iv.	M.

A teaspoonful every four hours.

A combination of belladonna and turpentine, as suggested by TROUSSEAU, not only relieves the pain, but helps the vesical trouble, if present.

154. ℞.	Extr. belladonnæ,	gr. iv.	
	Olei terebinth.,	f.℥ij.	
	Butyri cocoæ,	q. s.	M.

Make twelve capsules. One thrice daily.

No one remedy has had so much said in its favor as nitrate of silver. It is well to begin with a $\frac{1}{4}$-grain dose, and increase to gr. $\frac{1}{2}$ or j thrice daily. It may be combined.

155. ℞.	Argenti nitratis,	gr. vi–viij.	
	Extr. nucis vomicæ,	gr. xij.	M.

Make twenty-four pills. One after each meal.

Or:

156. R. Argenti nitratis,
Extr. belladonnæ, āā gr. vi–viij.
Extr. gentianæ, q. s.
Make twenty-four pills. One after each meal.

A salt foot-bath every night, is beneficial, and the sulphur-bath has worked wonders in cases of long standing, and deserves a faithful trial. A small lump of sulphide of potassium is to be thrown into the water in which the patient bathes, and he is to be well rubbed down afterwards.

PROF. TROUSSEAU, PARIS.

This author advises not to employ setons, moxas, etc., along the spine, as they cause great pain and irritation, and do no possible good. *Electricity* is the great remedy which he recommends, combined with *flagellations* prudently employed, with *belladonna* to abate pain, with *sulphurous baths*, which have been very successful. *Hydrotherapy* may be of great service in the constitutional treatment, as well as other appropriate remedies of a like action. Preparations of *mercury* and *iodide of potassium* are of great good where there exists a syphiltic taint. TROUSSEAU recommends his "compresseur" of the prostate in the spermatorrhœa which sometimes attends the outset of the disease. *Turpentine* is useful in the vesical manifestations of the malady. Hygienic rules are to be strictly observed.

RÉSUMÉ OF REMEDIES.

**Argenti Nitras*, according to Dr. ALTHAUS, is useful in a large proportion of cases. It should be given in doses of gr. $\frac{1}{16}$–$\frac{1}{2}$, two or three times daily. Its combination with hypophosphite of soda seems to add to its efficacy. After its use has been continued for four or six weeks consecutively, its administration should be interrupted for two or three weeks, and a slightly aperient mineral water given. The nitrate may then be resumed for a month or two. The gums should be carefully watched, and, on the appearance of the slightest blue coloration, the remedy should be discontinued. Nitrate of silver has been thus employed in ataxia with variable success.

Argenti Oxidum. In the *Med. and Surg. Reporter*, Dec. 18th, 1875, Dr. CHARLES CARTER, of Philadelphia, reports two cases in which the oxide of silver, gr. $\frac{1}{2}$, t. d., increased to gr. ij, t. d., controlled the neuralgia and apparently arrested the progress of the disease. This drug, also, does not discolor the skin.

Argenti Phosphas, gr. $\frac{1}{3}$, is preferred to the nitrate by Dr. A. M. HAMILTON.

Belladonna and *Cannabis Indica* are both said, by Dr. AITKIN, to give great relief to the pains.

Nitro-Muriaticum Acidum is an excellent tonic in these cases.

Phosphorus is recommended by Dr. AITKIN and Dr. A. FLINT. The administration of the phosphates of the metals and salts may be conjoined with the use of dilute phosphoric acid as a drink, in the daily allowance of water, and with phosphate of soda as an aperient.

157. ℞. Acidi phosphorici diluti, f. ℥ vj.
Syrupi, f. ℥ iij.

A teaspoonful in water, thrice daily, gradually increased to a dessert-spoonful, together with the application of electricity. (Dr. W. LAMBERT, *New York Medical Journal*, February, 1869.)

Physostigma has been used with advantage by Dr. SYDNEY RINGER, and also by Dr. EBEN WATSON. (*Practitioner*, September, 1869.)

Potassii Iodidum has been employed, but not very favorably reported upon. It is useful where there exists a syphilitic taint.

Strychnia. Dr. DRINKHARD, of Washington, has used this drug hypodermically, with success. (*Am. Jour. Med. Sci.*, July, 1873.) Other writers believe it is actually injurious. (FLINT.)

EXTERNAL REMEDIES.

**Electricity* has been employed with good results. Dr. AITKEN says it must be resorted to with great caution, and only during the pauses in the disease. Prof. TROUSSEAU highly recommended its use. Later experimenters seem to have concluded that treating the cord is of doubtful propriety, and that faradization of the extremities by means of the metallic brush, does the most good. (BEARD & ROCKWELL, 1878.)

SCIATICA.

This common and obstinate form of neuralgia often tasks the physician's resources to the utmost.

A report in the *Practitioner*, February, 1877, on the subject of its treatment by various practitioners, mentions several combinations of approved efficacy.

In rheumatic or gouty sciatica:

158. ℞. Potassii bicarbonatis,
Potassii iodidi, āā gr. x–xx. M.
This amount thrice daily.

159. ℞. Salicin, gr. xij.
This amount every six hours, in acute rheumatic sciatica.

160. ℞. Tinct. colchici, ♏x.
Pulv. opii. gr. j. M.

161. ℞. Tinct. aconit. rad., ♏x.
Potassii iodidi, gr. x. M.
Thrice daily in rheumatic and gouty forms.

162. ℞. Quiniæ sulphatis, gr. ij–v.
Tinct. nucis vomicæ, ♏v. M.

In pure neuralgic sciatica:

163. ℞. Tinct. acteæ racemosæ, f.ʒj–ij.
Potassii bromidi, ϑj. M.
This amount thrice daily.

DR. HENRY LAWSON, ENGLAND.

Out of some eighty cases of sciatica, lumbago, and brachialgia, treated by this physician, some of them excessively bad cases, in not more than three did the *subcutaneous injection of morphia* fail to give relief, in most cases complete. By means of this relief, the patient was enabled to eat and drink with comfort, and by help of perchloride of iron, and in some cases by cod-liver oil, he was enabled to put on flesh rapidly, and to repair the waste of tissue under which he had been laboring. The salt he uses is the muriate. Five grains are dissolved, by the aid of heat, in one drachm of distilled water; it must be injected warm, as the solution solidifies on cooling. The place of injection should be chosen as near as possible to the seat of pain, and

the point of the needle should not be more than half an inch long. Dr. LAWSON does not object to the puncture of a minute vein, as thereby the medicine is more rapidly absorbed, while the alarming symptoms which ensue are generally very transitory. The patient should have eaten a hearty meal about half an hour previous to the injection; this prevents, to some degree, the soporific effect of the drug, while it heightens its effect in allaying pain. (*Medical Times and Gazette*, January, 1877.)

C. G. COMEGYS, M. D., CINCINNATI.

Following MALGAIGNE, this physician has frequently succeeded in promptly curing refractory sciaticas by touching, with a red-hot wire, a certain spot on the ear, on the same side as the one affected, to wit, the anterior part of the helix, just at its entrance into the concha.

Another very efficient remedy is to inject 15 to 20 drops of common ether (in the ordinary superficial manner) behind the great trochanter. The pain is sharp, but not lasting, and the relief often astonishingly prompt. It should be repeated daily, if required. (*Cincinnati Lancet and Clinic*, August, 1878.)

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

164. ℞. Emplastri epispastici, 1½in.x5 in.

To be applied over the affected part. Let it draw for five or six hours, poultice it, and then remove the cuticle and dress with:

165. ℞. Morphiæ sulphatis, gr. ¼.
Pulveris marantæ, gr. ij. M.

For one powder. Also, 10 grains of Dover's powder, to be taken at night.

DR. LABORDE, FRANCE.

166. ℞. Olei terebinthinæ, f.℥viij.
Chloroformi,
Tincturæ opii, āā f.℥ij. M.

A useful liniment in sciatica. To be rubbed on by means of a piece of flannel, several times a day.

167. ℞. Aquæ ammoniæ, f.℥v.
Olei terebinthinæ,
Olei amygdalæ dulcis, āā f.℥j. M.

Rub on three times a day, in obstinate sciatica.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

168. ℞. Olei terebinthinæ, f.℥j.
Mellis, f℥j.

For an electuary. A tablespoonful twice daily.

ROMBERG also speaks very highly of this as a specific remedy in the treatment of sciatica.

THOMAS HAWKES TANNER, M. D., LONDON.

169. ℞. Sodii sulphatis, ℥ ij–iv.
Sodii carbonatis, ℥ j.
Sodii chloridi, gr. xv.
Cretæ preparatæ, gr. x.
Ferri carbonatis saccharatæ, gr. xv. M.
Make a powder, and direct it to be taken early in the morning, in half a pint of water.

In some cases in which Dr. T. could detect no cause for the sciatica, a cure has been effected by this treatment with the use of the hot-air bath twice a week.

EDWARD WAAKES, M. D., LONDON.

170. ℞. Extracti ergotæ fluidi, f. ʒ ij.
Aquæ cinnamomi, f. ʒ iij.
A dessertspoonful in water every four hours.

Tinctura ferri chloridi may be added if indicated. When ergot is likely to be useful, its good effects commence immediately.

PROF. M. ROSENTHAL, M. D., OF VIENNA.

This author advises wet cups or leeches in very painful, acute cases, followed by flying blisters to the painful points, and the inunction of opiated ointments. When turpentine can be given internally, without causing digestive troubles, it should be administered thus, but otherwise only by frictions. Electricity is of little value in sciatica of central origin, but when from peripheral irritation, the secondary current should be applied to the painful points for five to ten minutes, by means of dry electrodes, using weak currents at first and gradually increasing their intensity. A hydrotherapeutic plan, applicable to all cases, and often successful, is the use of moist packs, followed by cool affusions, or half baths at about 65° Fah., with friction to the limbs. Hot vapor baths, ice-bags, cold douches and sweats, advocated in many hydrotherapeutic establishments, should be confined to robust individuals, and to the peripheral forms of sciatica, in which their success is often gratifying.

RÉSUMÉ OF REMEDIES.

Aconitum is, in the opinion of Dr. FULLER, not only a valuable and efficient remedy in many obstinate forms of this disease, but is also safe and manageable, when properly administered and carefully watched.

Ammonii Chloridum is recommended by Dr. ANSTIE in the milder cases of sciatica occurring in the young.

**Atropia*, hypodermically, is a successful form of treatment now much employed.

**Belladonna* is one of the most valuable sedatives and anodynes we possess in this affection.

**Cannabis Indica* ranks next in value to belladonna and opium.

Conium is sometimes of service, and may be resorted to when belladonna and opium fail or are contra-indicated.

Creasotum has been employed internally by Dr. ELLIOTSON, with apparent benefit.

Digitalis is recommended by Dr. FULLER as a reliable remedy, when the pain is intermittent and of a purely neuralgic character. He gives either the powdered leaves (gr. j–iss,) or the tincture, (ɱx–xx) thrice daily.

**Morphia*, given hypodermically, affords speedy and often permanent relief. It may also be employed endermically. (F. 165.)

Nitro-muriaticum Acidum, in full doses (ɱvi–x,) is an effectual remedy in sciatica accompanied with malaria. Its action should be aided by an occasional brisk purgative, the cold shower bath, or a cold douche down the spine, followed by friction and change of air and scene.

Oleum Tiglii has been employed with success, internally.

Opium, although of great occasional service, is less used since the introduction of the more effective treatment by the hypodermic injection of morphia.

Potassii Iodidum is strongly advised by Dr. GRAVES, in doses of ʒj in the course of the day, dissolved in a decoction of sarsaparilla, in cases of a subacute or chronic character, and where the patient has to follow his out-door avocations.

Strychnia is inadmissible in acute or inflammatory cases, but in others, nux vomica has been used with occasional success.

**Terebinthinæ Oleum* is considered by Dr. ANSTIE as a remedy worthy at least a trial, in doses of ɱx thrice daily, in the more obstinate cases of sciatica. It is, however, usually very disagreeable to the patient. Dr. NIEMEYER also recommends it in electuary, and Dr. ROMBERG speaks of it almost as a specific. Dr. W. A. JAMIESON (*Edinburgh Med. Jour.*, March, 1877,) gives the following formula:

171. R. Olei terebinth., f.ʒij
Olei ricini, f.ʒiv.
Tinct. cardam. comp., f.ʒj.
Mucilaginis,
Aquam, āā q. s. ad f.ʒij.
Take at one dose.

He adds, the patients who derive most benefit from oil of turpentine in sciatica present the following appearances: Usually, middle-aged; they look older than they ought, and have hair, as ANSTIE so well phrases it, *prematurely and permanently gray*. The complexion may be pale or fresh, but it nearly always exhibits a peculiar *ashy gray* or *stone-colored* aspect.

EXTERNAL REMEDIES.

The Actual Cautery. Prof. MICHEL PETER, of Paris, (*Lancet*, 1878,) prefers the cautery to any other means. He recommended a number of superficial cauterizations by an olive-headed cautery along the course of the sciatic nerve and its divisions, from the trochanteric region to the outer malleolus. M. PETER considers this treatment preferable to blistering, because of being enabled by it to follow the whole course of the nerve, whilst it does not produce suppuration, or lead to any vesical trouble. It may also be repeated, if necessary, with impunity. (See, also, p. 100.)

Aconite and Aconitia, in liniment or ointment, are powerful local sedatives.

Acupuncture is limited to purely chronic cases, and to those in which there is effusion within the sheath of the nerve. In appropriate cases, it promises speedy and effectual relief.

Atropia has been strongly recommended by Dr. ROBERTS BARTHOLOW. He says: "The principal triumphs of atropia over neuralgia have been in cases of sciatica. It is now admitted that atropia is one of the best remedies for this disease." It must be injected at the seat of pain. In severe cases, gr. $\frac{1}{25}$ of sulphate of atropia may be used; but this quantity will excite very severe symptoms in susceptible subjects. Generally, gr. $\frac{1}{48}$ will produce decided atropinism. Cessation of the pain is not immediate upon the systemic effects; indeed, the pain is often at first increased; but improvement takes place after a variable interval, and is often more permanent than after the morphia injection. When atropia fails, *Morphia* may be tried, or both may be employed together.

Cantharis. Great and immediate relief sometimes results from applying a blister to the heel. Flying blisters along the nerve are approved by many.

Chloroformum is advised externally by Dr. FULLER, who says that a strip of flannel, soaked in chloroform, placed along the course of the nerve, and covered with oiled silk, to prevent evaporation, proves sometimes extremely serviceable.

Dry Cups along the nerve are frequently beneficial.

Electricity in the form of galvanization of the affected nerve, does great good in most cases.

Pix Burgundica. Enveloping the whole thigh in a Burgundy pitch plaster has, according to TROUSSEAU, cured sciatica after the failure of blisters and the endermic use of morphia.

Sulphur, externally, is highly praised by Dr. FULLER, who finds it very generally efficacious and worthy of a trial in every case, when all active symptoms have been subdued or are absent. He sprinkles a piece of new flannel, thickly, with precipitated sulphur, encases the whole limb in this, from the foot upward, and covers it with oiled silk or gutta-percha, which has the effect not only of increasing the warmth and confining the vapor of the sulphur, but of obviating the odor, annoying to the patient. It should be kept applied night and day. Absorption takes place rapidly, and the breath, urine, stools, and perspiration, unmistakably attest its presence in the system.

SPINAL IRRITATION.

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK.

This eminent neurologist believes that that important group of symptoms which, since the essay of Dr. C. BROWN, of Glasgow (1828), have been subsumed under the term "spinal irritation," are due to anæmia of the posterior column of the spinal cord. The principles of its treatment are four:

1. To remove any manifest cause of irritation.
2. To improve the general tone of the system.
3. To improve the special nutrition of the cord.
4. To set up counter-irritation in the vicinity of the disordered region of the cord.

In regard to improving the general system, Dr. HAMMOND recommends distilled liquors, the oxide of zinc, and cod-liver oil. The third indication is easily filled by strychnia, phosphorus, and opium. Thus:

172.	℞.	Strychniæ sulphatis,		gr. $\frac{1}{3}\frac{1}{2}$.	
		Acidi phosphorici diluti,		f. ʒ ss.	
		Syr. aurant. cort.,			
		Aquæ,	āā	f. ʒ ij.	M.

This amount several times a day.

Or a pill of the phosphide of zinc (gr. $1/10$) and nux vomica (gr. $\frac{1}{2}$.) Where there is contraction of the limbs, *opium* is very beneficial, as by hypodermic injections of morphia or in the form of suppositories, gr. $\frac{1}{2}$ of the aqueous extract with sufficient cacao butter. Water, as hot as it can be borne, applied to the spine by one of Chapman's bags, is an admirable adjuvant. But the most efficacious means to summon blood to the cord, is the direct *galvanic current*. Either pole may be placed above and the other below the seat of pain. The current should not be passed at a *séance* for more than fifteen minutes, and no one application should last longer than three or four minutes. For the relief of the spinal tenderness, one pole should be applied directly to the painful part, and the other to a point distant laterally from it for a few inches.

The fourth indication is very important. In slight cases, counter-irritation alone will effect a cure. Dr. HAMMOND prefers *blisters*, applied immediately over the painful part of the spine. *Tartar emetic*

ointment is useful, but painful. *Dry cups* almost always do good. Leeches and blood-letting are always prejudicial. When patients feel more comfortable lying down, they should be permitted to do so, but, at the same time, they should be encouraged to take regular gentle exercise daily.

Special attention should be given to the stomach when there is persistent vomiting, and everything is rejected. The diet must then be of the simplest possible character, and only very small quantities taken at a time. The smallest quantity that can be kept down, is better than a larger quantity thrown up. Warm liquids are often more apt to be retained than cold ones. Among medicines, the best is *valerianate of caffeine*, in doses of from 3 to 5 grains, as often as it may be required. Its only objection is its great cost. Cerium is inefficacious in the vomiting of spinal irritation.

DR. NATHAN S. DAVIS, OF CHICAGO.

Regarding spinal irritation as simple chronic inflammation, involving the roots of the nerves of sensation or motion, or both, What is the appropriate treatment? Dr. DAVIS answers, that internally, an alterative plan like the following:

173.	℞.	Tincturæ cimicifugæ,	f. ℥ ij.	
		Tincturæ stramonii,	f. ℥ ss.	
		Potassii iodidi,	℥ ijss.	
		Syrupi simplicis,	f. ℥ jss.	M.

A teaspoonful three or four times a day.

174.	℞.	Hydrargyri chloridi mitis,	gr. j.	
		Potassii nitratis,		
		Pulv. ipecac. et opii,	āā gr. viij.	

This amount, in a powder, three times a day until the mercurial is perceptible in the breath or gums, when it should be discontinued.

Externally, dry cupping along the spine, (for which purpose common tumblers are well adapted,) followed by belladonna plasters, or hypodermic injections of atropine are required. These means, with rest in the horizontal position, will be likely to remove the disease in from four to six weeks.

ALLAN M. HAMILTON, M. D., NEW YORK.

In three-quarters of the female cases of this disease, it depends upon some ovarian or uterine derangement, which must be sought out and treated, or the physician's efforts are fruitless. When there is general anæmia, one of the best tonics is:

175. R. Ferri et ammon. citratis, ℥ iij.
Tinct. gentianæ, f. ℥ iv.
A teaspoonful in water after eating.

Dr. THOMPSON's solution of phosphorus does excellent service. It is:

176. R. Phosphori, gr. ss–iss.
Alcohol. absolut., q. s. to dissolve.
Ess. menth. pip., q. s.
Glycerinam, ad f. ℥ iv. M.
A teaspoonful after eating.

Nutritious food and stimulants are required. Strychnia often does harm, while opium in small doses is generally of great and immediate value. Galvanization of the cervical sympathetic is an important auxiliary; so also are Chapman's spinal bags, filled alternately with ice and hot water.

RÉSUMÉ OF REMEDIES.

Conium. According to Dr. BROWN-SÉQUARD, as an agent affecting the circulation in the brain and spinal cord, and as a paralyzant of voluntary muscles by its effect upon the afferent spinal nerves, conium has not yet attained the high place in general practice which it deserves. It must be given in full doses of the fluid extract, and so administered is very efficient in spinal irritation.

Counter-irritants are, according to Dr. MCCALL ANDERSON, (*Clinical Lectures*, 1878,) the most efficient means of cure, and rarely fail. Blisters and leeches should be applied directly to the spot of spinal tenderness.

Digitalis is often of service.

Electricity in short sittings, every other day, will relieve uncomplicated cases.

Leeches, said by Dr. HAMMOND to be hurtful, have been employed by others with advantage. Dr. MCCALL ANDERSON orders half a dozen over the painful spot, repeats them if called for, and follows with a blister. (*Glasgow Medical Journal*, August, 1870.) Dr. ARMAINGAUD, of Paris, also recommends this treatment when there is pain or pressure over one or more of the vertebral spinal processes. (*Chicago Journal of Mental and Nervous Disease*, January, 1874.)

Opium in small doses is favored by HAMILTON.

Phosphorus is often of value. (F. 176.)

Picrotoxine, in doses of $\frac{1}{30}$ to $\frac{1}{100}$ of a grain, has been given with advantage by Prof. HAMMOND.

Sinapis, applied steadily to the spine, is lauded very highly in this disease by Dr. ARTHUR GAMGEE. (*Practitioner*, February, 1877.)

Strychnia is rather a dangerous drug in these cases.

Zinc in the following combination forms an admirable revulsive. The formula is of Dr. A. ROTHROCK, of Pennsylvania:

177. R. Zinci chloridi, ʒj.
Zinci cyanureti, ʒij.
Cerati simplicis, ʒj.
For a plaster. Apply for an hour or two daily.

SPASMODIC DISEASES.

DR. W. H. ERB, OF HEIDELBERG.

This contributor to Ziemssen's *Cyclopædia* considers spasmodic diseases among the most unsatisfactory objects of medical treatment. Whatever treatment there is, is purely empirical. Tonic and dietetic measures form an important part of it. Bathing, massage, travel, and the movement cure have all their applications. *Electricity* occupies a prominent place in curative measures, but definite rules for its use cannot be given. Several methods must often be applied in succession before the most effective one is discovered. Narcotics and nervines are the most valuable classes of drugs, and all of these have been tried with varying success.

In *mimetic facial spasm* or *convulsive tic*, brilliant results have sometimes been obtained by neurotomy. Of other means, electricity is of greatest avail. The subcutaneous injection of morphia is important. But satisfactory results are rarely obtained.

PROF. WM. A. HAMMOND, M. D., OF NEW YORK.

The class of paralyses or spasms produced by the habitual use of a set of muscles for a long time, as in *writers' cramp* or *scriveners' palsy*, etc., has been called by Professor HAMMOND *anapeiratic paralysis*. He believes rest from the labor causing the disease is indispensable in the treatment and sometimes sufficient in itself. The constant galvanic current has proved the most effectual agent in his hands. In incipient stages, *bromide of zinc* is valuable for restoring tone to the nervous system. It should be used in gradually increasing doses. Phosphide of zinc and nux vomica (F. 8,) are also valuable.

DR. REUBEN A. VANCE, OF OHIO.

This physician has derived great advantage in *writers' cramp* from the hypodermic use of *atropia*, combined with rest to the part.

The best place in which to inject the remedy is beneath the skin in the loose cellular tissue over the pronator muscles of the forearm. Either extremity can be used, but when the treatment is to be continued for a length of time, it is better to inject in each arm alternately. The hypodermic syringe should be small, and armed with a gold-pointed needle. The solution of atropia should be concentrated, so that but a small amount of liquid need be injected at a time. The following is a convenient formula:

178. R. Atropiæ sulphat., gr. j.
Acid. sulph. dil., q. s.
Aquam, ad ℥j. M.
Dose, one minim.

The injections should be administered about three times a week, and when attention is paid to the cleanliness of the needle and the due concentration and freshness of the solution, no danger of producing abscesses need be feared, if the operation is performed with a reasonable degree of dexterity.

Dr. F. Runge has called attention to some causes of local irritation, which produce these cramps. In one case he found a chronic periostitis at the external condyle of the humerus. This node was extremely sensitive to pressure, and this pressure evoked spasmodic contractions of the extensor muscles, originating there, of precisely the same character as those suffered from when the patient persisted in writing. The actual cautery was applied over the inflamed spot, and this, with six weeks' entire rest, cured the patient, who was still well twelve months afterwards. In the second case, an ingrowing nail (of the right thumb of the patient) was the original cause of the cramps, for it compelled the patient to alter the mechanism—in other words, the position—of his hand in writing. When this was healed, and the matrix of the nail no longer tender, the cramps all ceased, and the patient was well. (*Berlin Klin. Wochenschrift*, No. 21, 1873.)

Nitrate of strychnia, hypodermically, deserves trial.

Dr. E. Hertzka reports a case of cure of *piano-players' cramp*, in the *Petersburger Medicinische-chirurgische Zeitung*, 1876, by the use of eight drops of *tinctura gelsemii* three times a day. The treatment lasted three weeks; hydrotherapeutic and electric methods of treatment had proved insufficient.

Dr. G. Vivian Poore, of London, has derived better results in *writers' cramp*, from *galvanism* than from any other means. (*Lancet*,

Jan., 1875.) His words are: "For genuine 'writers' cramp,' dependent upon chronic fatigue, I have found the refreshing effects of the galvanic current of the greatest possible service, and I have had four extreme cases of patients who had exhausted all the usual remedies, and had suffered for very lengthy periods, in whom rest and the use of the galvanic current, combined with a rhythmical exercise of the affected muscles, was productive of rapid and marked amelioration of the objective and subjective symptoms."

In *hiccough, singultus,* or *spasm of the diaphragm,* violent mental impressions will often check the nervous action. Hot fomentations, sinapisms, or the electric brush applied to the diaphragmatic region, have the same effect. Internally, a very effectual remedy is snow, pulverized ice, or a plate of ice cream. Either of these will relieve ordinary cases. Of drugs, the most effectual are the narcotics and anti-spasmodics. The following combination will often give immediate relief in obstinate cases:

179. ℞ Chloralis hydratis,
Potassii bromidi,
Potassii bicarbonatis, āā ʒj.
Liq. morph. sulphatis, f.ʒj.
Aquam menth., ad f.ʒ vj. M.
Two tablespoonfuls every three hours.

The internal use of mustard has been highly commended; one teaspoonful of flour of mustard is to be infused in half a pint of boiling water, the infusion filtered, and to be given the patient at one draught.

In chronic hiccough from no assignable cause, the following is useful:

180. ℞. Tinct. physostigmatis, ♏x.
Pot. carb., gr. x.
Mist. acaciæ, ʒj. M.
S. One dose, *ter die.*

No vegetables should enter into the diet. The food should be non-stimulant, making use of milk, eggs, etc. In some cases, tinct. of Calabar bean alone answers very well. Sometimes a hypodermic injection of morphia cures or relieves.

The following combination has been used with excellent effect by Dr. F. Peyre Porcher, of South Carolina, in troublesome hiccough:

181. R. Olei succini, f. ℥ j.
Spts. ætheris nitrosi, f. ℥ ss.
Olei menthæ piper., f. ℥ j.
Potassii bicarbonatis, ℥ ij.
Spts. ætheris compos., f. ℥ iij.
Mucilaginis, f. ℥ ij. M.
A tablespoonful every half hour.

The other remedies to which we must have recourse in obstinate cases, are: *Chloroform*, combined with small doses of morphia, (RINGER,) *morphia*, hypodermically, *camphor*, *chloral*, *ether*, *jaborandi*, *belladonna*, *quinine* in full doses, *musk*, (which has been extolled as a specific in this affection,) and *oil of amber*, (which is said to rank next to musk.) Dr. FAVIER reports a case of very obstinate hiccough that had lasted without interruption for fifty days, and was finally cured by firm *compression of the epigastrium* with a tourniquet; and firm pressure with the end of the finger in the sulcus, at the base of the nasal septum, is an always convenient and frequently effective means.

In the condition of tonic muscular contraction, known as *tetany*, which is closely akin to hysterical contractions, Dr. N. B. EMERSON has made successful use of *conium*, which is a powerful relaxant. (*New York Medical Journal*, July, 1876.)

Cramp of the muscles, especially of the gastrocnemius, is a common affection of obscure origin. Women with child are very often subject to it. Rubbing the part, or jumping from the bed and standing on the affected leg are the usual means employed. If these fail, a hypodermic injection of morphia will give the most prompt relief. When hereditary, these attacks are extremely obstinate.

Dr. FREDERICK JAMES BROWN has called attention to the importance, in all convulsive disorders, of placing the patient in the sinistro-lateral posture. (*Practitioner*, May, 1877.) He is certain that by attention to this, important results may often be attained. He gives the following example: "Recently, a man aged 56 years, in impaired health from chronic catarrh, was seized with unilateral (right) convulsions. His consciousness and power of speech were intact. He had been convulsed for ten minutes when I entered the house, and he was growing worse. I turned him over upon his left side, and the convulsion ceased in about ten or fifteen seconds."

TIC DOULEUREUX (FACIAL NEURALGIA.)

FRANCIS E. ANSTIE, M. D., LONDON.

In the treatment of this terrible kind of neuralgia, to which TROUSSEAU gave the name of *epileptiform*, Dr. A. recommends (*Half-Yearly Compendium of Medical Science*, July, 1869,) the following plan in the earlier stages of the malady:

1. *Counter-irritation*, applied, not to the branches of the fifth, but to those of the occipital nerve, at the nape of the neck. A blister in the former situation is often as useful; in the latter, it is sometimes strikingly effective in gaining a short respite.

2. *Nutritive Tonics.* The assiduous use of cod-liver oil, or of some fatty substitute for it, should be insisted on from the first, and is of the highest consequence.

3. *Subcutaneous Injection* of morphia, or of atropia, according to circumstances. Commence with the use of $\frac{1}{6}$ of a grain of morphia twice daily, increasing this, if necessary, to $\frac{1}{4}$ and $\frac{1}{2}$ a grain, and in rare cases to 1 grain. If this produces, along with the other measures, a notable remission of the pain, it should be cautiously and steadily decreased, as circumstances may admit. In cases where morphia fails, atropia may be tried in doses commencing at $\frac{1}{6}$ of a grain. The injection of a less quantity than this would probably be useless in severe tic.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

182. ℞. Liquoris potassii arsenitis, gtt. v.
Syrupi rhei aromatici, f.℥j. M.
For one dose, thrice daily, after meals.

At night apply a *hot salt-bag* to the back of the neck, and order the following pill:

183. ℞. Extracti belladonnæ, gr. ¼.
Extracti hyoscyami,
Extracti colocynthidis compositi,
Pulveris zingiberis, āā gr. j. M.

ASHLEY N. DENTON, SUTHERLAND SPRINGS, TEXAS.

184. ℞. Olei camphoræ, f.℥ ij.
Pulveris opii, ℈j.
Potassii nitratis, gr. xv.
Mix well in a mortar, and apply to a denuded surface. Useful in relieving the intense suffering from facial neuralgia.

Dr. D. also recommends (*St. Louis Medical Reporter*, June 15th, 1867,) chloroform, as advised by Dr. TANNER, as one of the most useful palliatives in his hands.

W. MUNRO, M. D., ENGLAND.

Believing that, in tic douleureux, the blood-vessels of the part affected are in a state of constriction, our author has used *Calabar bean*, in several cases, (*Medical and Surgical Reporter*, December 5th, 1874,) with exceedingly satisfactory results. He drops into the eye, two or three drops of a solution of extract of Calabar bean (1 in 40), or applies one of Streatfield's ophthalmic squares to the eye.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

185. ℞. Extracti hyoscyami,
Zinci oxidi, āā ℈ ij. M.

Divide into forty pills. Begin with one pill, morning and evening, and increase to twenty or thirty of them daily. These, known as Meglin's pills, have a good reputation in Germany.

THOMAS HAWKES TANNER, M. D., LONDON.

186. ℞. Extracti belladonnæ,
Extracti opii, āā ℥ iss.
Glycerinæ, f. ℥ iv.
Extracti papaveris, ℥ iss. M.

To be painted over the affected part. A fomentation, flannel, or hot linseed poultice, is to be applied, being separated from the extracts by a sheet of tissue paper.

187. ℞. Aconitiæ, gr. ij.
Alcoholis, gtt. vj.
Mix thoroughly, and add
Adipis, ℥ j. M.

A small portion to be cautiously smeared over the track of the painful nerve, once or twice a day; but it must not be used where there is the slightest abrasion.

EDWARD WAAKES, M. D., LONDON.

188. ℞. Potassii bicarbonatis, ℥ iss.
Extracti ergotæ fluidi, f. ℥ j.
Infusi ergotæ, f. ℥ vj. M.

Two tablespoonfuls every four hours.

B. M. WALKER, M. D., PLYMOUTH, NORTH CAROLINA.

Our author reports (*American Journal of the Medical Sciences*, April, 1874,) a case of tic douleureux treated by *ice*. The patient, a lady aged sixty, had been treated in various ways during five years, no remedy securing a longer period of relief than a few weeks. She was directed to use ice upon the part, which was over the fifth pair of

nerves, and to continue the application as long as she could bear it, at the same time holding brandy in the mouth. The pain, for a while, was more intolerable than ever before; then it began to subside, and perfect quiet was obtained. The pain did not return the next day, as was customary, nor was there any subsequent return nor necessity for treatment.

RÉSUMÉ OF REMEDIES.

Acidum Arseniosum is sometimes prescribed by Prof. DA COSTA. (F. 182.)

Aconitia is employed by Prof. GUBLER, as follows:

189. ℞. Aconitiæ crystal, gr. $\frac{1}{6}$.
Alcoholis, q. s.
Aquam, q. s., ad f. ℥ ij.

One teaspoonful every eight hours. He says he has never known a case to resist this heroic remedy.

Ammonii Chloridum, in doses of ℥ ss, four times daily, often succeeds. If the pain does not yield after five doses, no benefit need be expected from this remedy.

Aqua Ammoniæ has been found of benefit in some cases, in doses of ♏xx–xl in a cupful of thick gruel, at bedtime.

Argenti Nitras has been found, by ROMBERG, of great, but not permanent benefit, in doses of gr. j several times daily.

**Atropia*, hypodermically, is a valuable remedy, in this, as in other forms of neuralgia.

Belladonna ranks among the first of sedatives and anodynes, in this, as in other neuralgic affections.

Beberiæ Sulphas, (in doses of gr. x, night and morning,) has been recommended by Prof. J. Y. SIMPSON and others.

Cannabis Indica is a capricious remedy, but one which (♏xij–xx of the tincture) often allays pain after the failure of other sedatives.

Caffein. One-grain doses of the citrate every hour, for some time before the expected paroxysms, have been recommended.

Ergota has been found useful by D. E. WAAKES. (*British Medical Journal*, August 8th, 1868.)

Ferrum is of service in anæmic cases.

Hyoscyamus, combined with oxide of zinc, has an excellent reputation in Germany. (F. 185.)

**Morphia*, hypodermically injected, is a speedy and powerful remedy. The injections should not be made under the skin of the face.

Oleum Tiglii has been employed with benefit, internally.

Stramonium is said by PHILLIPS, often to give very decided relief when exhibited in large and steadily continued doses.

EXTERNAL REMEDIES.

**Aconitum*, locally, often subdues the disease, attention being paid, at the same time, to the state of the bowels, and to the general health.

Aqua Ammoniæ has been found, by a number of French physicians, to rapidly cure some obstinate cases, when applied, with a camel-hair brush, to the palate and gums, so as to cause a profuse discharge of tears and saliva.

Counter-Irritation at the nape of the neck is recommended by Dr. ANSTIE. Dr. DA COSTA sometimes orders a hot salt-bag to the back of the neck.

Delphinia, applied externally, is stated by Dr. TURNBULL to be very efficient. It may be employed in the form of a solution:

190. ℞. Delphiniæ, ℈ ij.
Alcoholis, f. ʒ xij. M.

Or, in ointment:

191. ℞. Delphiniæ, gr. xxx.
Olei olivæ, f. ʒ j.
Adipis, ʒ j. M.

Hydrargyri Iodidum Viride is recommended in ointment, of the strength of 40 grains to the ounce of lard.

Physostigma. A solution of the extract of Calabar bean (1 in 40) applied to the eye has been used successfully.

Veratria is of great service, applied in ointment.

Electro-puncture, employed during the intermission of pain, is often a valuable method of treatment.

Hypodermic Injections. Dr. ANSTIE employs injections of morphia or of atropia, according to circumstances. Dr. RUPPANER reports a number of cases treated with success by the injection of liquor opii compositus, ♏x. In general, in regard to the use of hypodermic injections, the same is true as in other forms of neuralgia.

Neurotomy. Prof. NIEMEYER quotes BRUNS in support of division of the nerve, or excision of part of it, in proper cases. He shows, after a careful examination of the cases where it had been done, that, after excluding those where its want of benefit depended on error of diagnosis or operation, and after excluding the cases where the recurrence of pain was to be regarded as a new attack, not as a relapse, there was a considerable number of cases where the neurotomy caused either a complete and permanent benefit, or at least a temporary one for a few months or years. The operation is indicated when the pain is very limited, when it is probable that its exciting cause is situated at a point beyond which the nerve is accessible to the knife, when other treatment has proved fruitless, and when the pain renders the patient unfit for business. There is also an indication to operate when we cannot hope to divide the nerve between the point of disease and the brain, but when the pain never occurs spontaneously, being always the result of some external irritation acting on the peripheral terminations of the nerve. In such cases, the operation may, to some extent, protect the patients from the exciting causes of their attacks of pain. The temporary *compression* of the affected nerve, and the artery supplying it, has also sometimes proved an excellent palliative, and deserves a trial in suitable cases.

VERTIGO.

PROF. AUSTIN FLINT, M. D., NEW YORK.

The first and most important measure in the treatment of vertigo consists in the removal of the cause or causes at work. All measures, such as blood-letting, counter-irritation and purgation, addressed to cerebral congestion, are hurtful. On the contrary, tonic remedies, nutritious diet and other hygienic means of invigorating the general health, are useful. The practitioner should bear in mind the importance of assuring the patient positively of the absence of all danger. *Quinia* is the most useful drug Dr. FLINT has tried; it must be given in full doses.

DR. J. M. DA COSTA.

In regard to gastric vertigo, this teacher states that it is very often necessary for the patient to make an entire change in his habits and surroundings—*e. g.*, to take a sea voyage or a trip of some duration. After due regulation of the diet, he thinks that the best treatment consists in the administration of *bitters* and *alkalies*, the bitters being given before meals, and alkaline waters, etc., after meals. Later on, when the way has been well paved by the regular administration of these, iron, combined with $^1/_{30}$ of a grain of *strychnia*, given three times a day, is to be preferred. Another plan consists in the administration of small doses of *corrosive sublimate*, while paying strict attention to the bowels and diet. This exerts a most happy influence upon the gastric and cerebral phenomena. Iron should not be given early in the case, when it may not be well digested, and may cause constipation.

DR. S. WEIR MITCHELL, OF PHILADELPHIA.

This able neurologist, at the close of an exhaustive study of the causes of vertigo, (*Medical and Surgical Reporter*, June, 1877,) states that there is no drug which holds to it the same relation that the bromides do to epilepsy. The nearest approach to specific medication lies in the use of vascular tonics like digitalis; moderate doses of ergot; and where pallor occurs, inhalations of nitrate of amyl as a means of relief for the immediate onsets. Cold douches are valuable; but, above all, the use, once in five days, of the *actual cautery* on the neck, is the most certain agent. Freeze the part, first, with a piece of ice

sprinkled with salt, then press on the insensible part the point of a gas cautery, until it is just felt and no more.

In *gastric vertigo*, when all other means fail, the thorough adoption of *milk diet* seldom disappoints.

Aural vertigos demand points of cautery behind and in front of the ear, alternately. Ocular vertigos require appropriate glasses. *Tobacco* is a common cause of vertigo, and in all cases, its use must be prohibited.

C. HANDFIELD JONES, M. D., LONDON,

191. ℞. Hydrargyri chloridi corrosivi, gr. j.
Glycerinæ, f. ℥ j.
Tincturæ cinchonæ compositæ, f. ℥ ij.
Olei menthæ piperitæ, ♏xxv. M.

A teaspoonful in a wineglassful of water three times a day, in the *vertigo of old persons*, which occurs sometimes paroxysmally, as a single symptom, unassociated with any special state that can account for it. Dr. THOMAS HAWKES TANNER also recommends this treatment for the attacks of temporary dizziness to which the aged are liable.

RÉSUMÉ OF REMEDIES.

Ammonii Bromidum has been found, by Dr. RAMSKILL, of great help, when given in an effervescing form, with cascarilla, in cases of vertigo from overwork in the well-fed, when there is usually restlessness, insomnia, and depression of spirits, with a sense of impending evil.

Cubeba, in doses of gr. l, three times a day, at meal time, is recommended by Dr DEBOUT, in vertigo occasioned by excessive mental emotion or intellectual labor, and associated with dyspeptic derangement.

**Ferri et Strychniæ Citras* is recommended by Dr. RAMSKILL in essential vertigo (*i. e.*, that unaccompanied with any other head symptoms.) The patient should be placed on a long course of it, given in an effervescing form, and alternating, month by month, with tincture of larch and small doses of digitalis.

**Hydrargyri Chloridum Corrosivum* is recommended in small doses, with bark, by Drs. C. HANDFIELD JONES and T. H. TANNER, in the temporary vertigo of old persons.

Nux Vomica and *Strychnia* are available in many cases.

Potassii Bicarbonas is very serviceable in dyspeptic vertigo.

**Potassii Bromidum* is, according to Dr. RUSSELL REYNOLDS, often of service in vertigo, especially in cases which occur paroxysmally, without the co-existence of obvious spasm or organic disease of the brain.

Tonic remedies are recommended by Prof. AUSTIN FLINT.

Valeriana is very serviceable in that form of vertigo, with cardiac palpitation, which is not an unfrequent accompaniment of the menopause, or of the first establishment of the menses, in which the blood seems to rush into the head and then suddenly back upon the heart.

Zinci Valerianas, in doses of gr. i–ij, thrice daily, associated with extract of valerian, is recommended by Dr. DELIOUX in the treatment of nervous vertigo.

II. DISEASES OF THE RESPIRATORY SYSTEM.*

Aphonia—Asthma—Bronchitis, Acute—Bronchitis, Chronic—Catarrh—Coryza and Post-Nasal Catarrh—Emphysema—Empyema—Hæmoptysis—Hay Fever, Hay Asthma, Rose Cold, and Autumnal Catarrh—Laryngitis—Phthisis—Pleurisy, Acute, Subacute and Chronic—Pneumonia.

APHONIA.

The forms of aphonia usually encountered are (1) the catarrhal, (2) the hysterical, nervous or spastic, and (3) paralytic aphonia.

In *catarrhal aphonia* and excessive hoarseness,

DR. J. M. DA COSTA, PHILADELPHIA,

states that the local application of the *sulphate of zinc* is often productive of permanent good.

193. ℞. Zinci sulphatis, gr. j–vi.
Aquæ, f.℥ i. M.
Use as an inhalation.

Muriate of ammonia is another efficient agent.

194. ℞. Ammonii chloridi, f.℥ ss.
Syrupi prun. virgin., f.℥ iij. M.
A teaspoonful thrice daily.

This can be advantageously supported by $^1/_{50}$ of a grain of strychnia thrice daily, to give tone to the relaxed laryngeal muscles.

Nitre and *benzoin* are efficient drugs in this variety.

N. GALLOIS, M. D., PARIS.

195. ℞. Immerse a piece of thick paper in a solution of nitrate of potassium, and dry it; then cover it over with the compound tincture of benzoin, cut it up into pieces 3½ by 1½ inches, and make into cigarettes.

*The subjects Stomatitis, Pharyngitis, Tonsillitis, Tonsillar Hypertrophy, Ozæna and Rhinitis are treated in Napheys' *Surgical Therapeutics*. Diphtheria, Croup, etc., will be found in this volume, under Diseases of Children.

These cigarettes are highly praised in aphonia.

PROF. O. REVEIL, M. D., PARIS.

196. ℞. Pulveris benzoini, ℥ ss.
Place a portion on some live coals, and inhale the vapor, by deep inspiration, in cases of aphonia and hoarseness.

Common salt is often beneficial.

197. ℞. Sodii chloridi, gr. v.
Aquæ destil., f. ℥ j. M.
Use with an atomizer.

M. ROZIERE, PARIS.

198. ℞. Balsami tolutani, f. ℥ v.
Æther. sulphuric., f. ℥ iss. M.
Put in a wide-mouthed bottle and inhale for a few minutes every half hour in aphonia and excessive hoarseness.

The German physicians use largely inhalations of *oil of turpentine*, 1 to 5 drops to the ounce of water. It is also highly spoken of by TROUSSEAU, COHEN and others.

In *hysterical or nervous aphonia* the inhalation of an anæsthetic sometimes gives prompt relief. Dr. RUSSELL REYNOLDS has found benefit in blistering the larynx. But undoubtedly the most effective treatment is the electrical. Both kinds of electric currents have given satisfactory results; and when local applications fail, Dr. JOH. SCHNITZLER, of Vienna, has obtained prompt cures from galvanization of the nerve centres. (*Medicinische Presse*, No. 22, 1875.)

Locally, one may employ

199. ℞. Ferri chloridi, gr. iij.
Aquæ, f. ℥ j. M.
For an inhalation.

200. ℞. Argenti nitratis, gr. j–ij.
Aquæ, ℥ j. M.
For an inhalation.

Air, exercise, diet, and the daily shower bath are important auxiliaries, and will often of themselves restore the voice. Subjecting the patient to complete anæsthesia will sometimes at once break up the neurosis.

Paralytic aphonia may also be treated by inhalation. Prof. JOSEPH PANCOAST has used, with success, *chlorine vapor*, evolved by dropping slowly dilute muriatic acid into a solution of chloride of lime.

Turpentine and *tannin*, in inhalation, may also be used.

But the correct treatment of this form is undoubtedly by *electrization*. Drs. BEARD and ROCKWELL remark that there are few local disorders that yield more uniformly to any mode of treatment than aphonia to electrization. The current may be applied externally; but the proper course is to use the faradic current, and make the application directly to the cords by means of laryngeal electrodes.

RÉSUMÉ OF REMEDIES.

Alumen. BENATI, formerly physician at l'Opéra Italien, Paris, ordered the following prescription to restore the natural tones of the voice:

201. ℞. Aluminis, ʒ j.
Decocti hordei, f. ℥ ijss. M.

To be used as a *gargle*, the strength to be gradually increased. The general health should be, at the same time, carefully looked after, and the exercise of the voice regulated. The internal administration of alum (gr. x a day, in divided doses, gradually increased to gr. xlv,) has been also found very beneficial. Alum lozenges are indicated to complete the cure, and are efficient alone, in milder cases.

**Ammonia.* The inhalation of ammoniacal vapor, disengaged from a mixture of a solution of chloride of ammonium and carbonate of potassium, has given excellent results in aphonia, in consequence of exposure to cold. The utility of inhalations of chloride of ammonium vapor, in these cases, has been tested by Dr. BEIGEL in a number of cases. (*Practitioner*, August, 1868.)

Benzoinum, in vapor, is recommended by French physicians. (F. 196.)

Chlorinium. Chlorine inhalations are serviceable in aphonia following an ordinary cold, without organic lesion.

Iodinium. Iodine inhalations, and the application of the tincture of iodine to the fore part of the neck, are worthy of trial in cases arising from chronic thickening, or from debility and relaxation.

Quiniæ Sulphas. In all cases where the aphonia is intermittent in character, malarial poisoning may be suspected, and the free administration of quinine will be appropriate.

Sodii Boras. According to Dr. J. W. CORSON, (*Medical Record*, January, 1873,) relief will often be given when the voice has been suddenly lost, by slowly dissolving in the mouth and partially swallowing a piece of borax, grs. iv–v.

Zinci Sulphas is of use, either locally applied, in solution, to the cords, or inhaled. (F. 193.)

Zingiber. A ginger gargle, or a piece of the root employed as a masticatory, is often useful in aphonia from relaxation of the parts.

ASTHMA.

Many drugs are more or less beneficial in asthma; but what succeeds admirably in one case, may fail completely in the next one, and the physician must resort to something else. Whenever possible, treatment should be directed to the cause; and in all instances, hygienic rules should be insisted upon.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

In the treatment of the paroxysms of asthma, all nauseants have a certain influence in relaxing the bronchial spasms. *Lobelia inflata* is particularly serviceable, because it acts both as a nauseant and expectorant.

202. ℞. Tincturæ lobeliæ,
Tincturæ hyoscyami,
Spiritûs ætheris compositi,
Syrupi tolutanti, āā f.℥j M

A teaspoonful in water every half hour, during the paroxysm, until some effect is produced on the breathing, and then every hour or two.

Or one of the following combinations:

203. ℞. Spiritûs ætheris compositi,
Extracti valerianæ fluidi, āā f℥j.
Tincturæ lobeliæ, f.℥ss.
Potassii chloratis, ℥iss.
Syrupi tolutanti, f.℥j. M.

A dessertspoonful in water three times a day.

Direct, also, the following stimulating liniment:

204. ℞. Chloroformi, f.℥ss.
Olei terebinthinæ, f.℥j.
Spiritûs rosmarini, f.℥iss. M.

To be rubbed on the chest several times a day.

205. ℞. Potassii iodidi, ℥ij.
Morphiæ sulphatis, gr. ¾.
Tincturæ scillæ,
Tincturæ lobeliæ,
Syrupi, āā f.℥j. M.

A teaspoonful thrice daily, in asthma with emphysema and chronic bronchitis.

In order to prevent the recurrence of the paroxysms, too great care cannot be taken to inquire into the state of all the functions. In perhaps one-half of the cases, asthma is not a disease of the lungs, but a reflected trouble. In cases of stomach origin:

206. ℞. Pilulæ hydrargyri, gr. ij.
At night, to be followed by ½ an ounce of Rochelle salts in the morning. Afterwards direct arsenic, combined with gentian or belladonna; as,

207. ℞. Liquoris potassii arsenitis, f.ʒj
Tincturæ gentianæ compositæ, f.ʒiij. M.
A dessertspoonful thrice daily.

Opium and *belladonna*, or their alkaloids, *morphia* and *atropia*, have been extensively used. Dr. J. G. Oliver, of London, combines them in subcutaneous injection.

208. ℞. Morphiæ acetatis, gr. ¼–⅓.
Atropiæ sulphatis, gr. $\frac{1}{100}$.
Aquæ, q. s. M.
For one hypodermic injection in spasmodic asthma.

The conclusions he reaches, are:

1. Morphia and atropia are superior to morphia alone; the good effect is more speedy and complete, and they produce no depressing gastric disturbance.

2. The very frequent use of the injections does not appear to injure the general health.

3. Speedy relief. The effect is generally declared in five minutes in the form of comfortable sleep and quiet breathing. The most intense attack has given way completely in from fifteen to twenty minutes. (*The Practitioner*, January, 1876.)

Dr. C. Handfield Jones, London, recommends:

209. ℞. Liquoris opii sedativi, (Battley,) ♏x.
For one subcutaneous injection into the left front of the chest.

210. ℞. Atropiæ sulphatis, gr. $\frac{1}{30}$.
Aquæ, ♏x. M.
For one hypodermic injection in the vicinity of the left vagus nerve.

211. ℞. Extracti cannabis indicæ, gr. v.
For ten pills.

This drug occasionally proves very useful, one pill immediately checking the spasm.

DR. LECLERC, FRANCE.

212. ℞. Extracti belladonnæ, gr. xv.
Myrrhæ pulveris,
Ipecacuanhæ pulveris, āā ʒss. M.
Divide into thirty-six pills. One thrice a day, in nervous asthma. Nitre paper to be burned in the chamber of the patient, and stramonium leaves to be smoked.

N. GALLOIS, M. D., PARIS.

213. ℞. Extracti opii, gr. ¾–iss.
Belladonnæ foliæ, ʒj.
Dissolve the extract in a small quantity of water, and then moisten the belladonna leaves with this solution; dry them and roll into cigarettes.

TROUSSEAU substitutes for the belladonna leaves, stramonium leaves. Such cigarettes are useful in nervous asthmas and dry coughs.

PROF. FELIX VON NIEMEYER, GERMANY.

Among medicaments especially in repute for the prevention of new paroxysms, and for the radical cure of asthma, *quinine* stands first. The shorter and more regular the intervals of the attack, so much the more is to be expected from this drug. It is unsuitable when the pauses between the seizures are very long or irregular in their occurrence. In such cases we must have recourse to other remedies from the list of the so-called nervines.

As a rule, the metallic nervines are to be preferred before tincture of valerian, assafœtida, castor or camphor. The following may be used:

214. ℞. Ferri carbonatis, ʒj.
Syrupi, q. s. M.
For twenty pills. One thrice daily.

215. ℞. Zinci oxidi, gr. xxv.
Syrupi, q. s. M.
For twenty pills. One thrice daily.

216. ℞. Argenti nitratis, gr. iij–iv.
Confectionis rosæ, q. s. M.
For twenty-four pills. One thrice daily.

The *iodide of potassium* was a favorite with

PROF. ARMAND TROUSSEAU, PARIS.

217. ℞. Potassii iodidi, ʒ ijss.
Spiritûs vini gallici, f. ʒ iss.
Decocti senegæ, f. ʒ iij.
Syrupi papaveris, f. ʒ j. M.
In essential asthma, give a tablespoonful twice a day, an hour before the meals, in a little sweetened water.

During the attack, the tincture of lobelia may be administered, in doses of from 20 to 30 drops, from half-hour to half-hour. The respiration of chloroform is also useful; also stramonium cigarettes.

PROF. SÉE, PARIS,

Has tried the *iodide of potassium* alone, which has been followed with the happiest results. He prescribes it not only during the attack, but enjoins the patient to continue it for weeks, months, or years, according to the severity or duration of the malady. In exceptional cases, he combines it with a little opium, to prevent iodism, and, when the breathing is greatly compressed, with chloral. During the paroxysm, however, M. SÉE employs the *iodide of ethyle*, a substance discovered in 1825, by GAY-LUSSAC, and composed of iodine and ether, the new compound possessing the respective properties of both these substances. He administers it by inhalation, and he has often found that a single dose of 5 or 6 drops has been sufficient to cut short a paroxysm. The breathing once relieved, he then trusts to the iodide of potassium to effect a cure. The above treatment has been found useful in all cases of asthma, whatever its origin.

THOMAS HAWKES TANNER, M. D., LONDON.

218. ℞. Potassii iodidi, ℈ ijss–iv.
Spiritûs ammoniæ aromatici, f. ℥ j.
Tincturæ belladonnæ, ♏ l–f. ℥ ijss.
Tincturæ cinchonæ compositæ, f. ℥ ij.
Aquæ menthæ piperitæ, f. ℥ j. M.

A dessertspoonful, in water, three times a day.

In some cases of asthma, the author has found remarkable benefit from this formula. It requires to be persevered with for some weeks, the patient being watched, lest it impoverish the blood and produce purpura or boils, or even a carbuncle. If there be constipation, order

219. ℞. Pilulæ rhei compositæ,
Extracti conii, āā gr. v.

For two pills. To be taken at bedtime.

DR. WILLIAM M. WELSH, OF PHILADELPHIA.

Has found the following compound of great benefit in asthmatic cases:

220. ℞. Potassii nitratis, 2½ parts.
Belladonnæ fol. pulv., ½ part.
Stramonii fol. pulv., 5 parts.
Sacch. alb., ½ part.

Dissolve the nitre in just enough water to make a saturated solution, mix with the leaves, dry the mass into a coarse powder and add the sugar. A small quantity is to be placed on a tin plate and ignited, and the smoke inhaled.

J. S. MONELL, M. D., NEW YORK.

Our author recommends (*New York Medical Record*, August 15th, 1866,) *forced expiration and inspiration, for the relief of spasmodic* asthma.

He directs that all the air be expired that it is possible for the patient to do, and not to inspire until it is found absolutely necessary. Then carry inspiration to its fullest capacity, and retain, with great effort, for many seconds. This act of forced expiration, waiting, thorough inspiration, and again waiting, should be continued for some fifteen minutes, when it will be found that the spasm is relieved. It requires great exertion on the part of the patient to perform this act. The first attempt at retaining the inspired air, during the asthmic attack, will cause the patient to think he cannot continue it, but perseverance will soon delight him with relief from the spasm.

A general estimate of the value of the various remedies in asthma, is given in his classical treatise by

HYDE SALTER, M. D., LONDON.

Coffee relieves about two-thirds of the cases in which it is tried. The relief is very unequal, often merely temporary, sometimes very slight, sometimes complete and permanent. The following are valuable hints on its administration: 1. It cannot be given too strong. 2. It is best given without sugar and milk—pure *café noir*. 3. It should be given on an empty stomach. 4. It seems to act better if given hot—very hot.

Lobelia is given by Dr. S., in the form of the tincture, in repeated doses, every half hour, increasing the dose ♏v each time, till either the physiological effects (faintness, sickness,) are manifested, with or without relief, or that relief is obtained without such symptoms. In either case, the medicine is to be at once discontinued. Generally, no relief takes place until symptoms of lobelia poisoning show themselves. Any amount may be given, short of producing the effects, without any relief at all. The quantity required differs in each case—generally, ♏l–lx suffice; in others, f. ʒ iss fail to produce an effect. When once the necessary dose has been ascertained, in this way, the patient should start with it on the next occasion, which generally has the desired effect at once.

Iodide of potassium entirely fails in a great many cases. Sometimes, however, the most striking results attend its use. It often requires to

be continued for some time before it begins to manifest its effects. It should be used in every case in which it has not been tried, because of its occasional great value.

Quinine is the best of all tonics in asthma; next to it is *iron*. The two may be combined with a mineral acid and given with good results.

Stramonium is, in some cases, *the* remedy; in the majority of cases, as ordinarily used, it does some good; and in some few it is positively injurious. Its value in any case can only be ascertained by personal experience. When the leaves and stems fail, substituting the seeds may prove effectual. They appear to be more powerful in their action. The inhalation of the smoke, and swallowing the saliva, may be advantageously combined with the ordinary method of smoking. The earlier in a paroxysm it is had recourse to, the more likely will it be to relieve the spasm; over one that has been long established, it has but little power. As the great thing is to give it in time, an asthmatic should keep his pipe already filled, with the means of lighting it by his bedside, so that, on waking with dyspnœa, he may immediately use it. A good plan is to adopt the habit of smoking a pipe of it the last thing at night, whether a paroxysm is threatened or not. The *extract* (gr. $\frac{1}{4}$, gradually increased to gr. j,) sometimes produces excellent effects, or the tincture (℥x–xx every four hours) may be substituted.

Tobacco smoking affords, in some cases, remarkable ease. The habit of smoking has rendered powerless, in a large number of cases, what may, without any qualification, be called its most potent remedy.

Chloroform inhalations, *short of anæsthesia*, are often of benefit, and may be used in all cases.

RÉSUMÉ OF REMEDIES.

Acetum. As a preventive, bathing the chest every morning with vinegar and water has been advised.

Æther by inhalation is sometimes resorted to with benefit in asthma. The following formulas have been recommended:

221. ℞. Ætheris sulphurici, 30 parts.
Acidi benzoici, 15 "
Balsami peruviani, 8 " M.

Or the following:

222. ℞. Ætheris sulphurici, 2 parts.
Spiritûs terebinthinæ, 15 "
Acidi benzoici, 15 "
Balsami peruviani, 8 " M.

Place the mixture in a vessel having a large opening; the warmth of the hand is sufficient to volatilize the materials, and inhalations may be used four or more times a day, as occasion demands.

Ammonii Carbonas has proved (in doses of gr. x–xv) more successful than any other remedy, in the hands of Dr. J. HOPE, in cases of asthma arising from, or connected with, *disease of the heart*. In a very obstinate case, the following afforded much relief:

223.	℞.	Ammonii carbonatis,	gr. vij.	
		Antimonii et potassii tartratis,	gr. ¼.	
		Aquæ anisi,	f. ℥ iss.	M.

A draught to be taken every alternate hour.

Ammoniacum is of great service in both *spasmodic* and *hysterical* asthma. In the former case it should be combined with tincture of squill and a small portion of hyoscyamus or conium; in the latter, with equal parts of assafœtida. Plasters of ammoniacum applied to the chest often prove useful.

Aqua Ammoniæ (four parts to one of water) applied to the velum palati, has proved of service in simple idiopathic asthma. This application, which may prove dangerous, is only to be made, if at all, with great caution, so as not to touch the back part of the pharynx. The inhalation of the vapor of aqua ammoniæ is useful.

Argenti Chloridum. Dr. CURCI, of Venice, highly recommends in nervous asthma:

224.	℞.	Argenti chloridi,	part j.	
		Sodii hyposulphitis,	" iij.	
		Aquæ destillatæ,	" xxx.	M

It may be administered by the mouth or hypodermically, and is not irritating.

Arsenicum is recommended by Dr. HANDFIELD JONES and others, but is inadmissible in organic disease of the lungs and heart. Dr. MARTELLI, of Florence, claims excellent results from hypodermic injection of Fowler's solution, one part to two of water.

Assafœtida, in combination with other antispasmodics and with narcotics, is often very beneficial in spasmodic asthma.

225.	℞.	Tincturæ assafœtidæ,	f. ℥ ss.	
		Tincturæ opii,	♏xx.	
		Spiritûs ætheris compositi,	f. ℥ ss.	
		Aquæ camphoræ,	f. ℥ iss.	M.

For one draught.

**Belladonna* is a valuable remedy in spasmodic asthma, administered in the manner directed by Dr. HYDE SALTER, viz., in one full dose, sufficiently large to produce the full physiological effects of the drug, every night at bedtime. This plan he regards as infinitely superior to the system of divided doses during the day. As there is a marked difference in the tolerance of belladonna in individuals, the proper dose may be ascertained by commencing with small doses and gradually increasing them until the requisite full dose is ascertained.

Camphora is recommended by Dr. COPLAND as one of the most generally beneficial in any of the class of narcotics or antispasmodics. In *nervous* and *spasmodic* forms of asthma it should be given in large doses, (gr. iij–x,) and combined with musk, castor, assafœtida, etc., or with sedatives.

Cannabis Indica is said to occasionally prove very beneficial, but in the hands of Dr. HYDE SALTER it has been a complete failure in the few cases in which he employed it. Dr. EMIL KOLLER has, however, found it valuable in nocturnal asthma, in doses of gtt. v–vj of the tincture every three or four hours.

Castoreum, combined with ipecacuanha (equal parts of the tincture of castor and the wine of ipecac,) is recommended by Dr. GRAVES.

**Caffea* is an efficacious remedy. For its administration, see Dr. HYDE SALTER'S directions, (above p. 124.)

Chloroformum by inhalation is an excellent and prompt remedy for spasmodic asthma.

Datura Tatula is said to be of great efficacy smoked in cigarettes.

Digitalis has been employed, but is inferior in efficacy and safety to other remedies.

Dracontium sometimes succeeds (in doses of gr. xxx–l of the powdered root during the paroxysm) in obstinate cases of spasmodic asthma.

Grindelia Robusta. The plant and flowers of this native of the Pacific coast have been much lauded of late in spasmodic asthma. One drachm of the fluid extract may be taken when the paroxysm comes on, or half a drachm three times a day as a prophylactic.

Hyoscyamus is, according to Dr. HARLEY, the appropriate remedy in *cardiac* and *pulmonary* asthma. It is best administered subcutaneously.

Iodinium. In cases of dry asthma, of constitutional character, without obvious exciting cause, Dr. C. A. L. REED, of St. Louis, recommends, in the *Clinical Record*, 1879, the following prescription :

226. ℞. Liquor iodinii comp., f.℥j.
Mellis, f.℥ij. M.

Teaspoonful every three hours.

He finds that the use of this is promptly (after the third dose) followed by a restoration of the secretion, diminution in the frequency and severity of the paroxysms from the start, an improvement in the appetite, and an increase in the tone and vigor of the general system.

**Ipecacuanha*, in full emetic doses (not less than gr. xx) is often effectual in arresting a paroxysm of spasmodic asthma, if given at or near the outset of the attack. Proportionate doses to children may be given with safety and advantage. Small doses of the wine (♏v) repeated every ten to thirty minutes for two or three hours, unless relief comes much sooner, in which case the dose may be diminished and taken less frequently, is a method of treatment recommended by Dr. C. D. PHILLIPS, (*Practitioner*, Nov., 1869,) in *nocturnal spasmodic* asthma, when there is no organic disease of the heart or lungs.

**Lobelia.* Dr. HYDE SALTER reports favorably of the tincture. (P. 124.) Dr. RINGER, while regarding it as a remedy of great efficacy, considers that it should be given with caution where heart disease exists, as the pulse may become irregular and very weak. It should also be remembered that some

persons exhibit great intolerance of its action, poisonous effects following the smallest doses, and that different specimens differ considerably in strength.

Moschus, in doses regulated according to the severity of the attack, is often productive of benefit in *purely spasmodic* or *nervous* asthma. It has also been applied endermically (gr. vj–xv) with advantage.

Nitrite of Amyl. Cases have been reported in which the inhalation of five drops of this liquid has arrested very distressing attacks of spasmodic asthma.

Nitrogen. Dr. EDGAR A. HOLDEN recommends nitrogen inhalations. (*American Jour. of the Med. Sciences,* Oct., 1872.) The following is the method adopted with the protoxide: The gas, fresh and pure, is passed through a jar containing a fluid extract of conium, Calabar bean, or belladonna, according to the necessities of the case; and from this jar is inhaled by the patient once daily, before retiring, and for four or five consecutive days, the quantity varying according to the condition of the patient, but not exceeding five to eight gallons, never to anæsthesia, the sitting occupying at least ten minutes. Relief almost always follows the first inhalation, and produces an uninterrupted night's rest. Upon the disappearance of the nightly paroxysm and the subsidence of all oppression in breathing, the remedy must be discontinued, but must be instantly resorted to upon the first evidence of return.

Opium is of questionable value in asthma. Dr. HYDE SALTER says: "Prefer any other sedative to opium; and unless there is some special complication that indicates it, never give it at all."

Oxygen Inhalations have been tried with reported "wonderful" results in nervous asthma.

Potassii Bromidum, in full doses, at night, has been recommended in spasmodic asthma. In the *spasmodic asthma of childhood,* given in syrup, in doses of gr. vj every two hours, it has proved very successful after the failure of other remedies.

Potassii Iodidum is an uncertain remedy, which sometimes, however, proves strikingly successful.

Potassii Nitratis. The inhalation of the fumes of paper impregnated with nitre, is often of striking benefit. The following formula is given in the *Journal de Pharmacie et de Chemie:* Take four ounces of white paper, and allow it to macerate in warm water, until reduced to a uniform paste. Then press out the greater portion of water, and mix the residue in a mortar, with the following powder:

227.	℞.	Potassii nitratis,	℥ ij.
		Myrrhæ,	
		Olibani,	āā ℥ ijss.
		Belladonnæ,	
		Stramonii,	
		Digitalis,	āā gr. x.

When a uniform mass has been formed, roll into sheets a line or so thick, dry, and cut into strips. This paper is said to burn less quickly than the ordinary nitre paper, and to be more effective. On account of

the unpleasant odor of the burning paper, Dr. R. E. THOMPSON (*Practitioner*, April, 1879,) recommends the following formula as a basis for a *medical cigarette:*

228.	℞.	Swedish filtering paper, size,	4 in.x2½ in.
		Potassii nitratis,	gr. ¼.
		Tinct. tabaci,	♏x.
		Olei anisi,	♏½.

The tincture of tobacco is made with ℥ 2½ of the leaf to a pint of spirit. A solution of any drug which is to be experimented on, can then be prepared, and the paper, having been floated through the solution in a flat dish, when dry, can be cut into a certain size, and the dose thus accurately measured.

Quiniæ Sulphas is highly recommended by Drs. NIEMEYER and HYDE SALTER. (See above.) FLINT says that gr. xx–xxx at one dose, will often break up a paroxysm.

Sanguinaria has been prescribed with good effects. Dr. L. B. ANDERSON, of Virginia, gives it as in croup, until vomiting occurs. It rarely fails to give prompt and grateful relief. As a preventive, he continues it in doses of 20 drops of the tincture three times a day. (*Southern Medical Record*, February, 1876.)

Scilla. Benefit is sometimes derived from squill, combined with hemlock or henbane. The following formula is often useful:

229.	℞.	Tincturæ scillæ,	gtt. xv.	
		Extracti hyoscyami,	gr. iij.	
		Acidi nitrici diluti,	♏xxx.	
		Aquæ,	f. ℥ iss.	M.

For one dose.

Spiritus Ætheris Compositus. Hoffman's anodyne, though favorably spoken of by some writers, has proved entirely useless in the hands of Dr. HYDE SALTER, and in some cases, has seemed to increase the spasm.

**Stramonium.* (See above.)

Sulphur, in doses of about gr. viij daily, to be given while fasting, and persevered in for a long period, has been recommended by French physicians.

Tabacum. The palliative effects of tobacco fumes, in nervous asthma, are well known.

Veratrum Viride has been advised in nervous asthma. The following formula is said, by Dr. J. L. COOK, to give admirable results when other remedies fail:

230.	℞.	Tinct. veratri viridis	gtt. xxxvi.	
		Morphiæ sulphatis,	gr. j.	
		Syrupi ipecac.,	f. ℥ vj.	M.

A teaspoonful every three hours, if necessary. (*Louisville Medical News*, April, 1876.)

Zinci Oxidum is strongly recommended by Dr. SYMONDS, (*British Medical Journal*, June 13th, 1868,) who states that, whether for abating the morbid susceptibility of the respiratory nerves, which engenders the spasmodic paroxysms,

or for diminishing the liability to catarrhs, he knows nothing to surpass long courses of the oxide of zinc, with or without extract of conium for the one indication, and quinine for the other. It is also recommended by Dr. NIEMEYER.

Zinci Sulphas has been employed, with the result of diminishing the frequency and force of the attacks.

Zinci Valerianas is sometimes prescribed.

EXTERNAL MEASURES.

**Cold Bathing*, employed in the intervals of the attacks of spasmodic asthma, is stated to lessen the morbid sensibility to the impression of cold atmospherical changes, and to give tone and vigor to the system. Simply *sponging the body* is preferred by some to immersion; salt (℥j, ad aquam Oj) may be added, and a rough towel or flesh brush employed. The best time is immediately after getting out of bed in the morning. The *shower-bath* is preferred by Sir T. WATSON.

Electricity has been employed in some cases, but Dr. HYDE SALTER condemns, altogether, its use. Galvanization of the pneumogastric has been tried by BARTHOLOW with doubtful results.

ACUTE BRONCHITIS.

JOHN SYER BRISTOWE, M. D., LONDON.

The treatment is, (1) *Hygienic;* an equable temperature, about 65°; moist atmosphere; hot foot-baths; regulated diet. (2) *Local;* mustard plasters, or dry cupping to the upper chest; inhalations of steam, simple or medicated. (3) *Medicinal.* The expectorant or nauseating drugs, combined with the narcotics and sedatives. A combination of ipecac., squills, and small doses of opium, is very serviceable in earlier stages. Later, when the bronchial secretion becomes abundant and muco-purulent, this may be replaced with a more stimulating mixture. That recommended by Dr. STOKES is very efficacious, namely, carbonate of ammonia, senega, and opium. (F. 268.) The balsam and gum and resins are also valuable in this stage. In protracted cases and during convalescence, tonics are called for.

PROF. M. CHARTERIS, M. D., GLASGOW.

In his *Hand-book of the Practice of Medicine*, 1878, this writer states that during the early or catarrhal stage, bronchitis may be abated by a full dose of opium in wine whey. If the fever is too intense for

this, give a hot bath, followed by a weak saline mixture. As an expectorant:

231. ℞. Oxymel. scillæ, ℥ ss.
Spir. æth. nitrici dulc.,
Tinct. camph. comp., āā f.℥ j.
Mist. amygdal., f.℥ j. M.
This amount every six hours.

If a gouty dyscrasia is present, add colchicum to this. For local applications, sinapisms, hot water and turpentine stupes, and jacket poultices of linseed meal, are valuable. The following is useful in children:

232. ℞. Vini ipecac., f.℥ iss.
Syrupi simp., f.℥ ss.
Tinct. camph. comp., f.℥ iij.
Liq. ammon. citrat., f.℥ ss.
Aquam, ad f.℥ ij. M.
A teaspoonful every two hours, in the febrile stage.

The *wine whey*, above referred to, may be made as follows:

233. To half a pint of boiling milk add one or two wineglassfuls of Sherry or Madeira. Separate the curd by straining through a fine sieve or piece of muslin. Sweeten the whey with refined sugar.

The following is a useful and agreeable demulcent drink: -

234. ℞. Extracti sarsaparillæ fluidi,
Syrupi scillæ, āā f.℥ iss. M.
A teaspoonful in a teacupful of barley water, to be frequently taken during the day.

PROF. J. M. DA COSTA, M. D.

Combinations like the following may be employed:

235. ℞. Vini ipecacuanhæ, f.℥ ij.
Liquoris potassii citratis, f.℥ iv.
Tincturæ opii camphoratæ,
Syrupi acaciæ, āā f.℥ j. M.
A tablespoonful thrice daily, in the first stage of ordinary acute bronchitis.

236. ℞. Morphiæ acetatis, gr. j.
Potassii acetatis, ℥ iij.
Liquoris ammonii acetatis, f.℥ iij.
Syrupi tolutani, f.℥ j. M.
A dessertspoonful every third hour. A useful diaphoretic alkaline mixture.

237. ℞. Ammonii carbonatis, gr. xvj.
Spiritûs ætheris compositi, f.℥ iss.
Syrupi tolutani,
Aquæ, āā f.℥ j. M.
A teaspoonful every two hours; a stimulating expectorant for a child a year old, affected with bronchitis of two weeks' standing.

Counter-irritation to be applied to the chest by means of weak mustard plasters (one part of mustard to four of Indian meal.) Also, if the child be much debilitated, 15 gtt. of brandy every four hours. When the child is seen frequently, so that the effect may be watched, there is no better treatment than relieving the lung mechanically by emetics. Hoffman's anodyne, in the above recipe, acts as a diaphoretic and quieting agent, which latter influence would not be obtained from sweet spirits of nitre.

Where there is obvious bronchial catarrh:

238. ℞. Tr. verat. viridis, ʒ j.
Ammon. mur., ʒ ij.
Mist. glycyrrh. comp., ʒ iij.
Syr. pruni. virg., f. ʒ vij. M.

S. Teaspoonful four times a day, in water.

After taking this for a day or two, the dose ought to be reduced. Use, also, mustard to the chest.

PROF. GEORGE JOHNSON, M. D., LONDON.

Acute bronchitis is an exaggerated catarrh; the two diseases are essentially the same, and they require the same principle of treatment, only modified according to the character of the symptoms. (*British Medical Journal*, Oct. 23d, 1869.)

In the early stage of acute bronchitis, when the mucous membrane is dry and swollen, the hot-air bath or the wet packing may be employed once or oftener with advantage. Another very useful remedy in this stage is tartar emetic, in doses of $^1/_6$ of a grain, combined with liquor ammonii acetatis:

239. ℞. Antimonii et potassii tartratis, gr. j½.
Liquoris ammonii acetatis, f. ʒ ij.
Syrupi tolutani,
Aquæ, āā f. ʒ j. M.

A tablespoonful thrice daily. The inhalation of steam, repeated several times in the course of the day, is often very soothing and beneficial.

In the second stage, when free secretion has been established, antimony and acetate of ammonium are to be discontinued. At this period, a combination of carbonate of ammonium, with spirit of chloroform, is useful as a stimulating expectorant or antispasmodic.

240. ℞. Ammonii carbonatis, ʒ iss.
Spiritûs chloroformi, f. ʒ v.
Syrupi acaciæ, f. ʒ ij.
Aquam, ad f. ʒ iv M.

A dessertspoonful thrice daily.

Brandy or wine, in moderate quantities, may now also be required to sustain the strength. When, in the advanced stage, there is a profuse secretion, with copious perspiration, the ammonia mixture may be replaced by the following:

241. ℞. Quiniæ sulphatis, gr. xvj.
Zinci sulphatis, ʒj.
Acidi sulphurici aromatici, f.ʒv.
Aquæ menthæ piperitæ, f.ʒiijss. M.
A dessertspoonful thrice daily, in water.

This combination often checks, very rapidly, the excessive secretion from the bronchial mucous membrane. The *stimulating expectorants* are sometimes useful at this stage of the disease—senega, squill, ammoniac, and the compound tincture of benzoin. If, as sometimes happens, the stimulating expectorants suddenly check secretion, tighten the breath, and increase dyspnœa, their employment must at once be discontinued. When the secretions accumulate and threaten suffocation, the patient being blue, and cold, and drowsy, and the cough nearly or quite ceasing, an emetic of sulphate of zinc is often wonderfully efficacious in clearing the air passages.

Dr. JOHNSON gives an especial warning with regard to *opium*. Never order an opiate for a bronchitic patient who has the slightest blueness of the lips.

DR. ROSS C. RUSS, OF OHIO.

This writer says, in the *Cincinnati Lancet and Observer* (February, 1877,) that the medicinal treatment of acute bronchial inflammation should be commenced with *wine of ipecacuanha*, given with the view to unload the bronchi of the excessive secretion, and to allay the irritability of the vagus nerve, but should only be given in the first stage. After the subsidence of the acute stage, he has witnessed the best results from the following:

242. ℞. Quiniæ sulphatis, ʒiij.
Acid. phos. diluti, ʒss.
Syr. tolutani, ʒss.
Aquæ destillatæ, ʒiij. M.
A dessertspoonful every four hours.

The dose should be increased or diminished according to age of the patient. The object which is to be obtained, is to produce sedation over the turgid and relaxed capillaries of the mucous tissue of the bronchi, at the same time increasing the tonicity of the part.

When the disease assumes a still more grave form, solidification and ultimately softening of the lobules of the lung tissue are threatened. The following should be then given:

243. ℞. Spts. vini gallici, ℥ vj.
Glycerinæ, ℥ ij.
Tinct. hyoscyami, ℥ iij. M.
Teaspoonful every four or five hours. The dose to be regulated according to age of the patient.

These medicinal agents soothe the harassing cough, aid digestion, asssist assimilation, and prevent undue tissue change.

RÉSUME OF REMEDIES.

Ammonii Acetatis Liquor makes a useful diaphoretic alkaline vehicle for antimony, morphia, &c.

Ammonii Carbonas may be given with benefit, combined with ipecacuanha, squills when expectoration is scanty or difficult, or with tincture of lobelia if much spasm be present. Five grains given at bedtime, when the first symptoms of a common cold express themselves, often at once subdue the disease.

Ammonii Bromidum has been recommended.

Amyl-nitrite. Dr. D. H. KITCHEN recommends for the dyspnœa of acute bronchitis, the inhalation of gtt. v–xv of this substance. (*American Journal of Insanity*, October, 1873.)

**Ammonii et Potassii Tartras* is of service in small doses (gr. $\frac{1}{16}$–$\frac{1}{4}$), in the earliest stages of acute bronchitis in young plethoric subjects, and where much febrile action is present. When the phlegm accumulates in the bronchial tubes, an antimonial emetic will readily remove it. The nauseating and depressing effects of antimony should not, however, be long kept up in this disease, as they interfere with proper nutrition, which is of much importance in these cases.

Apomorphia.

244. ℞. Apomorphiæ hydrochloratis, gr. $\frac{1}{3}$.
Infusi senegæ, f. ℥ v.
Syrupi simplicis, f. ℥ v.
Aquæ destillatæ, f. ℥ iv. M.
A teaspoonful every half hour in severe cough in children.

Chloroformum by inhalation is said to palliate the cough and excitement, and directly favor the resolution of the extravasated fibrin, and prevent the deposit of more. A drachm of chloroform should be inhaled in the course of fifteen or twenty minutes, and the inhalation repeated from two to twelve times in the twenty-four hours.

Colchicum is recommended in acute stages of *gouty bronchitis* by Dr. GREENHOW, who gives the following with great success:

245. ℞. Potassii iodidi,
Ammonii carbonatis, āā gr. iv.
Vini colchici, ♏x.
Tincturæ scillæ,
Tincturæ hyoscyami, āā ♏xx.
Aquæ camphoræ, q. s.
Make a draught, to be taken thrice daily.

**Ipecacuanha* is a valuable expectorant and diaphoretic, and a useful adjunct to other remedies of the same class.

Monarda. The warm infusion of horsemint makes an excellent diaphoretic.

Oleum Ricini seems, more than any other medicine of its class, to mitigate the inflammation and promote resolution by expectoration.

Opium, or morphia, given in full doses at the very outset of a common cold, often averts the attack. But an opiate should never be given to a bronchitic patient with the slightest blueness of the lips.

Oxygen. In the dyspnœa of capillary bronchitis, the inhalation of oxygen affords relief, and has been the means of preserving life.

Phellandrium Aquaticum is considered by French physicians a specific sedative to the bronchial mucous membrane.

Potassii Nitras is frequently administered. Dr. GRAVES speaks highly of the following combination:

246. ℞. Potassii nitratis, ʒ ij.
Antimonii et potassii tartratis, gr. j.
Tincturæ opii camphoratæ, f. ʒ ss.
Misturæ amygdalæ, f. ʒ xij.
A tablespoonful every hour.

Senega in decoction is a valuable remedy in the treatment of acute bronchitis in the aged.

Veratrum Viride is often of service in the early stages.

Zinci Sulphas is used in the advanced stages, when there is profuse secretion.

Counter-irritants to the chest are often of service. For this purpose, dry-cupping, *hot turpentine stupes, or mild sinapisms may be employed. Turpentine embrocations are also serviceable.

Stimulants are often useful, and sometimes necessary, as in the *bronchitis of the aged*, attended with profuse secretion, threatened apnœa and a weak pulse. At the very outset of a common cold, a full supper, with a moderate alcoholic stimulant, will frequently abort the attack.

Water. The *vapor of hot water* is often of signal benefit. Wet packing is also of service in the early stages.

CHRONIC BRONCHITIS.

PROF. G. P. ANDREWS, M. D., DETROIT.

Dr. ANDREWS holds that this disease depends upon organic changes, and a cure cannot be looked for. Expectorants are useless, except during acute exacerbations. Asthmatic symptoms can be most speedily relieved by inhalations of *nitrite of amyl*. Sedatives may be called for when the cough is very harassing; but a certain amount of cough is desirable, to rid the lungs of mucus. Patients should be instructed to restrain the impulse to cough, as it is very much under the control of the will, or, at least, can be brought under by practice. When there is much emphysema and dyspnœa, the *inhalation of compressed air* has been very efficacious in giving prompt relief.

The patient should live out of doors as much as possible, in a dry, cool, equable climate, and give careful attention to hygiene. (*Detroit Review of Medicine*, September, 1878.)

PROF. WILLIAM AITKEN, M. D., EDINBURGH.

In chronic cases of bronchitis, especially in patients who have made considerable progress in the journey of life, remedies which tend to invigorate the general system are indicated. Besides the selection of a beneficial climate and the use of nutritious, easily digested food, stimulating embrocations are useful. The following liniment, employed at the Meath Hospital at Dublin, is highly recommended for this purpose:

247. ℞. Spiritûs terebinthinæ, f.℥ iij.
Acidi acetici, f.℥ ss.
Vitelli ovi, j.
Aquæ rosæ, f.℥ ijss.
Olei limonis, f℥j. M.

To be rubbed, morning and evening, not only over the chest, before and behind, but also along the sides of the neck. It generally reddens the skin and produces small pimples.

Of the fœtid gums, ammoniac in particular, is a useful remedy. From the following combination (formula of Prof. EASTON, of Glasgow) decided beneficial results are obtained:

248. ℞. Ammoniaci, ℥ ij.
Acidi nitrici diluti, f.℥ ij.
Aquæ, f.℥ xij.
Two tablespoonfuls in gruel, thrice daily.

It is often advantageous to administer astringent remedies, as:

249. ℞. Acidi tannici, ℈ j–℥ j.
For twenty pills. One thrice daily.

Or,

250. ℞. Olei cubebæ, gtt. x.
For one dose, three or four times a day, on a piece of sugar.

In the protracted bronchitic affections of the aged, diuretics are of great service. The following formulæ are recommended by our author, and by Drs. MACLACHLAN and STOKES, as well suited in a variety of cases of *senile chronic catarrh:*

251. ℞. Potassii nitratis, gr. xxxvj.
Tincturæ conii, f.℥ ss.
Spiritûs ætheris nitrosi,
Oxymellis scillæ, āā f.℥ vj.
Decoctum senegæ, ad f.℥ vj. M.
A tablespoonful thrice daily.

252. ℞. Potassii acetatis, ℥ ss.
Aceti scillæ,
Spiritûs ætheris nitrosi, āā f.℥ vj.
Tincturæ opii camphoratæ, f.℥ ss.
Liquoris ammonii acetatis, f.℥ iijss.
Syrupi aurantii corticis, f.℥ vj. M.
A tablespoonful thrice daily.

DR. BEIGEL, LONDON.

253. ℞. Pulveris aluminis, gr. ij.
Tincturæ opii, ♏ x.
Aquæ destillatæ, f.℥ j. M.
For inhalation by means of atomizer, night and morning, in obstinate cases of chronic bronchitis.

The following inhalation also affords relief in severe cases:

254. ℞. Acidi tannici, gr. iij.
Extracti hyoscyami, gr. ij.
Aquæ destillatæ, f.℥ j. M.
To be inhaled night and morning. On account of the taste, sulphate of iron (gr. iv to f.℥ j) may be substituted for the tannic acid.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

255. ℞. Ammonii chloridi, ℥ ij.
Misturæ glycyrrhizæ compositæ, f℥ iij. M.
A dessertspoonful three times a day.

Chloride of ammonium, in order to be effective, should be given in 10-grain doses. In the bronchitis of patients affected with phthisis, it may be combined as follows :

256. ℞. Ammonii chloridi, ℥ ss.
Morphiæ muriatis, gr. j.
Extracti pruni virginianæ fluidi, f. ℥ iij. M.
A teaspoonful three or four times a day.

257. ℞. Ammonii chloridi, ℥ ij.
Potassii chloratis, ℥ j.
Tincturæ hyoscyami, f. ℥ ss.
Extracti pruni virginianæ fluidi, f. ℥ ijss. M.
A dessertspoonful thrice daily, when there is a tenacious secretion.

Chlorate of potash thins the secretion and promotes expectoration ; it is useful in both acute and chronic bronchitis.

258. ℞. Potassii chloratis, ℥ ij.
Tincturæ scillæ, f. ℥ ss.
Misturæ glycyrrhizæ compositæ, f. ℥ ijss. M.
A dessertspoonful three or four times a day, when there are dry râles.

259. ℞. Vini picis liquidæ, f. ℥ iij.
A dessertspoonful thrice daily, in cases of bronchial catarrh, together with

260. ℞. Plumbi acetatis, ℈ ij.
Extracti glycyrrhizæ, q. s. M.
For twenty pills. One three times a day.

261. ℞. Potassii carbonatis, ℥ ss.
Vini ipecacuanhæ, f. ℥ ij.
Tincturæ opii camphoratæ,
Syrupi tolutani, āā f. ℥ jss. M.
A teaspoonful three times a day, as an alkaline expectorant mixture, to thin the secretion.

E. HEADLAM GREENHOW, M. D., LONDON.

262. ℞. Vini ipecacuanhæ,
Acidi nitro-muriatici diluti, āā ♏ x.
Tincturæ hyoscyami, ♏ xx.
Tincturæ gentianæ compositæ, f. ℥ ij.
Aquam, ad f. ℥ ij. M.
For one dose. To be taken in water three times a day, in chronic bronchitis.

In almost all cases of chronic bronchitis, a time arrives when expectorants cease to be useful. The expectoration has become of the nature of an habitual flow from the bronchial membrane. Treatment of a tonic character is then required. In these cases, Dr. GREENHOW has long been accustomed to prescribe, with great advantage, the *mineral acids*, especially the nitro-muriatic, in combination with a vegetable

bitter, as above. In chronic cases attended by very copious expectoration, he adds to each dose of the above mixture, twenty minims of the *tincture of larch*, which has the effect not only of lessening the expectoration, and with it the cough and dyspnœa, but also, apparently, of restoring the debilitated membrane to a more healthy tone, and of rendering patients less liable to catarrhal attacks at every change of the weather or season.

JOHN FORSYTH MEIGS, M. D., PHILADELPHIA.

263. ℞. Acidi carbolici fluidi, ♏x–xv.
Aquæ, Oss. M.

To be placed in an ordinary inhaling bottle, and used three or four times a day, in bronchial catarrh, offensive secretion from the bronchial tubes, etc.

L. PARISEL, PARIS.

264. ℞. Pulveris cinchonæ flavæ,
Sulphuris loti, āā ʒ ss.
Syrupi althæ, q. s. M.

This solution should be inhaled by means of an atomizer; useful both in the simple form of chronic bronchitis and in that which usually complicates the advanced stages of phthisis. It diminishes the secretion, and thereby lessens the waste of substance and the exhaustion occasioned by repeated and urgent coughing.

PROF. ALFRED STILLÉ, M. D., PHILADELPHIA.

265. ℞. Acidi carbolici fluidi, gtt. xv–xx.
Tincturæ conii, f. ʒ j–ij.
Aquæ destillatæ, Oij. M.

For inhalation.

PROF. WILLIAM STOKES, M. D., DUBLIN.

266. ℞. Potassii iodidi, ʒ iij.
Tincturæ opii camphoratæ, f. ʒ ss.
Decocti senegæ, f. ʒ iv.
Syrupi tolutani, f. ʒ iss. M.

Two teaspoonfuls a day, in chronic bronchitis.

267. ℞. Tincturæ opii camphoratæ, f. ʒ ss.
Ætheris,
Tincturæ tolutani, āā f. ʒ ij. M.

A teaspoonful in a small quantity of a warm drink, to quiet the cough, in bronchitis.

268. ℞. Tincturæ opii camphoratæ,
Tincturæ scillæ, āā f. ʒ iss.
Ammonii carbonatis, gr. xviij.
Decocti senegæ, f. ʒ iv.
Syrupi tolutani, f. ʒ ss. M.

Two or three teaspoonfuls a day, in chronic bronchitis, after the inflammatory symptoms have lost a little of their intensity.

269. ℞. Acidi benzoici,
Ammoniaci, āā ʒ ss.
Saponis, q. s.

Divide into twenty pills. From four to eight in the twenty-four hours, in chronic pulmonary catarrh. Repeated sinapisms to the chest.

JAMES TURNBULL, M. D., LIVERPOOL.

270. ℞. Ipecacuanhæ, ʒ ij.
Olei olivæ, f. ʒ ij.
Adipis, ℥ ss. M.

This pomade is to be spread upon the skin once or twice a day, when it is desired to produce an eruption or a rubefacient effect in bronchitis.

Or:

271. ℞. Emetinæ, gr. xv.
Adipis, ℥ ss. M.

The emetine is to be dissolved in a small quantity of alcohol, and the solution thus obtained is thoroughly mixed with the lard.

Rubbed on the skin for a few minutes, once or twice a day, this ointment produces a copious crop of small pustules, unattended with pain, which remain out for many days, and leave no scars. In this last point, it has an advantage over tartar emetic ointment, for which Dr. T. proposes it as a substitute.

SIR THOMAS WATSON, LONDON.

In cases of chronic bronchitis, which are especially remarkable on account of the great abundance of the bronchial secretion, our author has derived great advantage from the administration of the *sulphate of iron* in 2 or 3-grain doses, in the *compound infusion of rose*, thrice daily. When there is any fever present, these remedies are apt to augment it; but when the pulse is quiet and the skin cool, they are often of the greatest service.

Our author has also seen the excessive expectoration diminish, and the patient gain strength, under the use of the balsams, the *compound tincture of benzoin*, for example, a form of medicine much employed formerly, and too much neglected at present.

JOHN WILLIAMS, M. D., LONDON.

272. ℞. Ammoniaci,
Ammonii carbonatis, āā gr. xv.
Ipecacuanhæ, gr. iv.
Morphiæ muriatis, gr. iss.
Mucilaginis acaciæ, q. s. M.

Divide into ten pills, which coat with a solution of balsam of tolu in chloroform. One pill, morning and evening, in chronic bronchitis, especially when the secretion is thick and the expectoration difficult.

J. MILNER FOTHERGILL, M. D., LONDON.

273. ℞. Sp. chloroformi, ♏xx.
Hydrobromici acidi, ʒ ss.
Syr. scillæ, ʒ j.
Aquam, ad ℥ j.
For one dose, three times a day.

The dose, of course, is reduced for children. Any other acid in this mixture is very agreeable, but the hydrobromic acid, from the effect of bromine upon reflex mechanism, allays the cough often so troublesome. It possesses much the same action as opium, without the ill effects upon the digestive organs or on the bronchial secretion.

In a letter to the *Philadelphia Medical Times* of January 19th, 1877, Dr. FOTHERGILL dwells at some length on the great value of *strychnia* as an expectorant in bronchitis. By its action on the respiratory centre, it proves useful when increase of respiratory power is needed for the expulsion of mucus gathered in the air-tubes. He gives it either alone or in combination with the ordinary cough mixture. On other expectorants, Dr. F. gives these directions: As long as the skin is dry, and the bronchial lining membrane tumid, and secretion arrested, ipecacuanha with acetate of ammonia is indicated; or, a little antimony may be added with advantage. When the skin is once thrown into action, and the bronchial secretion also established, then acids with syrup of squills are suitable measures. But it is not a successful plan to administer squill with acids until the skin is moist. When there is a tendency to the free action of the skin, this latter combination, in full doses, is a useful plan of treatment. Neither is the union of carbonate of ammonia and senega, in severe cases, indicated until the secretions alike of the skin and bronchial lining membrane are thoroughly established.

BELLEVUE HOSPITAL, NEW YORK CITY.

274. ℞. Ammon. carb., gr. xxxij.
Ext. fl. senegæ,
Ext. fl. scillæ, āā f. ʒ j.
Tr. opii camph., f. ʒ vj.
Aquæ, f. ʒ ss.
Syrup. tolut., q. s. ad f. ℥ iv. M.
Teaspoonful at a dose.

RÉSUMÉ OF REMEDIES.

Acidum Carbolicum, by atomized inhalation, is of service when the bronchial secretions acquire a repulsive fœtor, and indeed quite generally.

Allium. After the febrile stage has passed, syrup of garlic, or the domestic onion syrup, is a very useful expectorant, particularly for children.

Alumen. Dr. F. L. ANDREWS, of London, recommends alum in acute as well as in chronic bronchitis, both in children and adults, when the expectoration is ropy. To children of three years, he gives 1 grain in solution, every five or six hours; to adults, 6 or 8 grains, at like intervals.

Ammonii Carbonas is an excellent stimulant expectorant, of benefit in the advanced stages of bronchitis, when there is no febrile action present. The following formula may be employed:

275. ℞. Ammonii carbonatis, gr. iv.
Spiritûs chloroformi, ♏xx.
Aquæ camphoræ, f.℥ x. M.
To be taken every three or four hours.

Infusion of senega may often replace, with advantage, the camphor water in this recipe. It is of especial benefit in the *asthenic bronchitis of old age.*

**Ammonii Chloridum* is a most valuable remedy in chronic bronchitis, but must be given in 10-grain doses in order to be effective. The following is a useful formula:

276. ℞. Ammonii chloridi, ℥ ij.
Spiritûs ætheris compositi, f.℥ ij.
Extracti glycyrrhizæ, ℥ j.
Decoctum senegæ, ad f.℥ vj.
Tablespoonful every two or three hours. Ipecacuanha or squill may be added, if indicated.

Angelica is useful in the chronic bronchial catarrh of aged and feeble persons, under circumstances when senega is usually prescribed.

Apomorphia. Dr. WERTNER, of Vienna, has used this substance internally as an expectorant with the most pleasing success. His prescription is:

277. ℞. Apomorphiæ, gr. $\frac{1}{3}$–$\frac{2}{3}$.
Aquæ destillatæ, f.℥ xij. M.
Tablespoonful every two hours for an adult. It is an excellent cough sedative, especially useful in bronchial catarrh in the exudation stage. (*Dobell's Reports*, 1876.)

Arsenicum is recommended by Dr. THOROWGOOD (*Lancet*, November 13th, 1869,) in chronic bronchitis where copious expectoration and much emaciation are present. At times, he finds it to act quite like a specific in improving the breathing. He gives ♏ij of Fowler's solution in alkaline infusion of columbo thrice daily.

Assafœtida is of service when the cough is spasmodic, and the expectoration difficult, on account of general debility. It is, therefore, often useful in the chronic bronchitis of old persons.

Balsamum Peruvianum. The balsams, both of Peru and of Tolu, are useful stimulant expectorants, and vehicles for squill and other remedies of the same kind, in chronic bronchitis. The vapor, obtained by placing them upon a piece of hot iron or hot coals, is also of benefit.

Benzoinum The compound tincture of benzoin is a useful stimulant expectorant;

the tincture of benzoin may often be employed with benefit, by means of a steam atomizer. Benzoin must be used only in cases not injuriously influenced by stimulation.

Calcis Phosphas, in doses of gr i–ij several times a day, is recommended by Dr. RINGER as of great value in checking profuse discharges in chronic bronchitis.

Cerii Oxalas. Dr. THOMAS CLARK (*Practitioner*, April, 1878,) considers this drug to be purely sedative, and therefore a great desideratum in treatment of lung diseases, inasmuch as it does not disturb the digestive tract—the only unpleasant subjective feature of its use being occasional dryness of the mouth. In gr. v doses he has found that it will relieve many harassing coughs, irrespective of the pathological conditions which cause them. Dyspnœa is usually relieved at the same time. He claims that relief for a period of twenty-four hours often follows a single dose taken before rising in the morning.

Cicutin. The *hydrobromate of cicutin* has been found an efficient sedative in cough by M. DELIOUX. (*Dobell's Reports*, 1877.)

Cimicifuga is especially useful in the chronic bronchitis and coughs of old age.

Cinchona. The acidulated cold infusion of bark is very useful when there is rapid wasting of the system, under the influence of profuse expectoration and night sweats.

Conium, in the form of the compound pill (gr. v–x), is frequently useful. Squill increases its efficacy. Vapor coniæ may be inhaled with benefit.

Copaiba often restrains and modifies the bronchial secretion in chronic bronchitis attended with profuse expectoration, when there is no fever and not much vascular irritability.

Creasotum is sometimes given by inhalation and by the stomach, in the bronchorrhœa of old persons.

Creta Præparata is recommended by Dr. COPLAND in chronic bronchitis in the advanced stages, particularly when colliquative sweats and diarrhœa are present. He employs the following mixture, which, even when the bowels are regular, is by no means productive of constipation:

278. ℞. Misturæ cretæ, f. ℥ vjss.
Vini ipecacuanhæ, f. ℥ iss.
Tincturæ opii camphoratæ, f. ℥ vj.
Syrupi tolutani, f. ℥ iij. M.
Tablespoonful three or four times daily

Cubeba, in small and often-repeated doses, is of service in the chronic bronchitis of old age, attended with profuse secretion and much debility of constitution.

Digitalis. The tincture is exceedingly useful in the bronchitis of elderly persons with deficient circulation and dyspnœa. It may be combined with ammonia.

Eryodiction Glutinosum, vulgó *Yerba Santa*, has been found to possess demulcent and expectorant properties of value, especially in subacute cases.

Ferri Mistura Aromatica is highly praised as calculated to improve the general health and check superabundant secretion, by Dr. GRAVES. He orders:

279. ℞. Misturæ ferri aromaticæ, f.℥ iss–iij.
Aquæ menthæ piperitæ, f.℥ vj. M.
Tablespoonful thrice daily.

Gelsemium is an efficient sedative when the cough is of the habitual nervous variety.

Ipecacuanha is a useful expectorant, usually given combined with other remedies. Dr. WILLIAM MURRELL, of London, uses ipecacuanha spray in winter cough. The spray has proved most successful in those cases of winter cough in which the dyspnœa is the prominent symptom. The ipecacuanha wine was used either pure or variously diluted, the most usual strength being one part of the wine to one or two of water. The use of undiluted wine occasionally produces dryness of the throat and nausea, the latter symptom most frequently occurring in those cases in which the patient is not careful to expectorate the mixture of saliva and condensed spray which accumulates in the mouth. The quantity of wine used at each inhalation varied from a half to two drachms.

Larix Europœa is recommended by Dr. GREENHOW, to check profuse passive expectoration in chronic bronchitis.

Lobelia is a serviceable sedative, allaying spasm and facilitating expectoration. It is usually given in combination with other remedies.

Marrubium. The expressed juice of the fresh plant, taken with milk, has been strongly recommended.

Myrrha, when there is no fever or irritability present, is a valuable medicine in long-standing chronic bronchitis, particularly after a course of expectorants.

Naphthaline, C_{10} H_8, reduced to powder and united with a little gum acacia, in gr. j–ij, or advantageously combined with a small quantity of codeia, not only slightly lessens expectoration, but alleviates cough without interfering with the other secretions.

Œnothera Biennis. Dr. F. H. DAVIS, of Chicago, (*Half-Yearly Compendium*, July, 1879,) considers this an exceedingly valuable drug in cases where much local catarrhal inflammation is present. His medication is:

280. ℞. Acid carbolic, cryst., gr. vj.
Glycerinæ, ℥ ss.
Ext. œnotheræ bi. fl., ʒ iss.
Aquæ, ʒ ij.
S. Teaspoonful before each meal.

In addition, the following:

281. ℞. Pil. hydrargyri, gr. x.
Pulv. aloes, gr. v.
Zinc. oxyidi, ʒ i.
S. One pill to be taken at bedtime, or after breakfast and at bedtime.

Opium, though often of much service in allaying bronchitic cough, may prove dangerous if there is much accumulation in the bronchi.

Penthorum Sedoides. This plant, *vulgó*, the Virginia stone-crop, has been highly praised in bronchial catarrh, by Dr. G. L. TINKER. (*Half-Yearly Compendium*, January, 1879.)

Pilocarpin. In chronic dry catarrh, as well as in acute bronchitis, Dr. O. KAHLER, of Prague, has witnessed much benefit from this alkaloid. (*Centralblatt Med. Wis.*, April, 1878.)

Pix Liquida is of some value in bronchial catarrh. The following formula was recommended by the late Prof. DUNGLINSON:

282. ℞. Picis liquidæ, f.℥j.
Aquæ destillatæ, Oij.

Digest for eight days, and decant. Dose, from 8 to 12 tablespoonfuls, daily, in milk.

Dr. SYDNEY SNYDER gives tar in 2-grain doses, every three or four hours, in winter cough.

**Plumbi Acetas* frequently proves useful when there is profuse mucous secretion. (F. 260.)

Potassii Chloras is recommended by Prof. DA COSTA in both acute and chronic bronchitis, to thin the secretion and promote expectoration. (F. 257, 258.) FLINT gives ℥ss of the saturated solution, two or three times a day.

**Potassæ Liquor*, ♏x–xv, added to an ordinary expectorant mixture, is often attended with good results when the sputa is scanty, thick, and viscid.

***Potassii Iodidum* acts beneficially in the advanced stages of chronic bronchitis, in restraining inflammatory action and promoting absorption. (F. 266.) FLINT says of it, that it exerts more curative influence over the disease than any other drug.

Scilla is of service after all active inflammation has subsided, in mild cases unattended with purulent expectoration. It is best combined with an alkali and a small quantity of opium. (F. 252.)

**Senega* is a highly serviceable remedy, particularly when combined with carbonate of ammonium. (F. 268.)

**Sodii Hypophosphis*, or potassii hypophosphis, is useful in very chronic cases, with thick, fœtid expectoration. Camphor water is a good vehicle.

Stramonium is recommended, combined with expectorants, by Dr. HEADLAND, in the form of the tincture (♏x), in the chronic bronchitis of the aged, where there is great dyspnœa, accompanied by a dry state of the tubes.

Strychnia, or nux vomica, in small doses, with iron, is advocated by Dr. THOROWGOOD, especially when there is constant dyspnœa with prolonged expiration. (*Lancet*, November 13th, 1869.)

Zinci Sulphas is recommended by Dr. BARLOW. He employs the following combination for moderating the cough and expectorations:

283. ℞. Zinci sulphatis, gr. j.
Extracti conii, gr. iv. M.

One pill thrice daily.

Emetics are recommended in chronic bronchitis, by Dr. GRAVES, when there is no fever, no remarkable dyspnœa, nor acceleration of the pulse, but when the secretion is very copious. In such cases, an emetic every night, for two or three nights, is productive of great advantage, freeing the stomach and

lungs from a large amount of mucus, rendering the expectoration easier, clearing the tongue, and improving the appetite.

Inhalations are frequently employed in the treatment of chronic bronchitis. The following are the principal drugs used: *Alum; Balsams of Peru and Tolu; Carbolic Acid; Chlorine; Chloroform*, a few whiffs, ♏vi–l, often of signal, but only temporary benefit; *Conium Vapor; Creasote; Iodine; Olibanum Fumigations*, the gum rosin placed on burning coals; *Tar Vapor*, generated by heating tar over a spirit lamp, with the addition of a small quantity of potash, to neutralize the irritant fumes; *Nitre Paper Fumes; Sulphurous Acid Spray or Fumigation; Tannic Acid; Turpentine; Hot-Water Vapor; Sulphate of Zinc.*

EXTERNAL REMEDIES.

Counter-Irritants. The following combination of *aqua ammoniæ*, applied to the chest, is an efficient counter-irritant:

284. ℞.	Aquæ ammoniæ,	f.℥ ss–j.
	Olei amygdalar.,	f.℥ ss.
	Olei rosmarini,	f.℥ j.
	Aquæ,	f.℥ ij.

Tartar-Emetic ointment is occasionally employed as an irritant to the chest, but other irritants are generally preferred. *Croton Oil* liniment is sometimes very useful. *Turpentine* liniments are highly serviceable. The following combination, supposed to be an imitatiom of that used by St. John Long, is recommended by Dr. Graves:

285. ℞.	Olei terebinthinæ,	f.℥ iij.
	Acidi acetici,	f.℥ ss.
	Ovi vitelli,	j.
	Olei limonis,	f.℥ j.
	Aquæ rosmariniæ,	f.℥ ijss.

To be well rubbed in over the chest, the nape of the neck, the epigastrium, and the course of the cervico-spinal and pneumogastric nerves generally. *Sinapisms* to the chest are sometimes of service.

Electricity. A fine primary induction current, of low intensity, passed through the chest from the back and neck, stimulating the sympathetic and spinal nerves, has been found productive of great benefit.

Nitro-muriatic Acid lotions sponged over the chest are recommended for checking profuse expectoration, and mitigating the severity of the symptoms.

Plasters. A *Burgundy pitch* plaster often proves of service as a protective against atmospheric changes, and as a rubefacient. An *opiate* plaster is sometimes of benefit.

**Poultices.* Large, light, soft linseed-meal poultices, made to cover the whole of the chest, often afford great relief in chronic bronchitis. If it be desirable to stimulate the skin, *Mustard* (1 part to 4) is applicable.

CATARRH, CORYZA, AND POST-NASAL CATARRH.

The inflammation of the outer air passages commonly called "a cold," is known as a *coryza*, or "cold in the head," when it begins in the mucous membrane of the nose, and a *catarrh* when it attacks first the membrane of the mouth, fauces and upper air passages.

THE ABORTIVE TREATMENT OF A COLD.

A successful method is that used by

DR. HORACE DOBELL, LONDON.

His plan is as follows:

1. Order:

286.	℞.	Ammonii carbonatis,	℈ j.	
		Morphiæ sulphatis,	gr. $\frac{1}{6}$.	
		Misturæ amygdalæ,	f. ℥ iv.	M.

Two tablespoonfuls every three hours.

2. At night give a tablespoonful of spirit of mindererus in a tumbler of cold water, after the patient has got into bed and been covered up with several extra blankets; cold water to be drank freely during the night should the patient be thirsty.

3. In the morning, the extra blankets should be removed, so as to allow the skin to cool down before getting up.

4. Let him get up as usual, and take his usual diet, but continue the ammonia and morphia mixture every five hours.

5. At bedtime, the second night, give a compound colocynth pill. No more than twelve doses of the mixture, from the first to last, need be taken, as a rule; but should the catarrh seem disposed to come back after leaving off the medicine for a day, another six doses may be taken and another pill. During the treatment the patient should live a little better than usual.

As everything depends upon the promptitude of the treatment, persons who are subject to catarrh, especially if it inclines to the influenza character, should be provided with a prescription for the medicine, and full instructions how to manage themselves when a cold sets in.

An addition to this plan is needed in persons whose colds seize at once upon the bronchial mucous membrane. Besides the manner of proceeding just described, they should use the following inhalation:

287. R. Extracti conii, gr. x.
Tincturæ benzoini, f. ʒj.
Spiritûs ammoniæ aromatici, f. ʒ ss.
Aquæ (170° F.), Oj. M.

Inhale the steam for fifteen minutes at bedtime each night; put a mustard plaster on the front of the chest one night, and between the shoulders the next; and, unless the weather is warm, wear a respirator out-doors until all signs of the cold have disappeared.

DR. C. J. B. WILLIAMS, LONDON,

Has found the "dry plan" eminently successful; and it does not oblige the patient to leave his business. His directions are:

1. Begin with a sharp aperient in the solid form of pills, swallowing them with as little water as possible.

2. The food should be rather less in quantity and more digestible than usual, and at first should be dry; later on, the moister forms of food are more easily swallowed and digested.

3. No fluid should be taken whatever.

4. As much exercise as possible should be taken, in warm clothing, so as to promote the action of the skin and bowels.

Twenty-four hours of this treatment will give immense relief; thirty-six to forty-eight hours will effect a cure; and rarely even a trace of bronchial irritation remains.

T. J. MACLAGAN, M. D., LONDON.

This writer (*Practitioner*, November, 1877,) prefers, as an abortant in commencing cold, a full dose of *quinine*, (gr. x,) or several doses of *salicin*, (gr. xv–xx, every one or two hours, until ʒ ii–iij are taken.)

As a prophylactic for those cases who are constantly "catching cold," a writer in the *Practitioner*, February, 1875, recommends filling the ears with *cotton-wool*. Not only does this prevent them, but both sore throats and colds are much benefited during their continuance by this simple device.

Dr. FERRIER advocates the use of this snuff:

288. R. Morph. sulphatis, gr. j.
Bismuth. subnitrat., ʒ iij.
Pulv. acaciæ, ʒj. M.

Use by insufflation at the commencement of a catarrh.

DR. J. S. PROUT, NEW YORK,

Advocates the use of the tincture of the *chloride of iron*, ♏ xx–xxx, taken directly after the cold is caught. The improvement should be decided in half an hour; if not, the dose ought to be repeated two or three times. A convenient vehicle for the iron is glycerine. (*Medical Record*, January, 1874.)

One full dose of *opium* or *morphia* will often succeed in promptly dissipating the symptoms. So also will twenty or thirty drops of *tincture of belladonna*.

The following powder is highly recommended by the editor of the *Archives of Neurology*, 1877:

289. ℞. Camphoræ, ʒ v.
Ætheris sulphurici, q. s.
Dissolve to the consistence of cream, and add:
Ammonii carbonatis, ʒ iv.
Opii pulveris, ʒ j. M.
Keep in a tightly-corked bottle.

The dose is regulated by the opium, and ranges from gr. iij–xv. This much may be taken in a little water just before retiring, or at any hour of the day when there is a suspicion of having caught cold; and the dose may be repeated if necessary. The taste is not disagreeable, and the effect is "singularly and inexplicably efficacious." It is well and safe to keep it on hand and take about as much as one can lay on the finger nail, whenever one becomes badly chilled.

DR. BRAND, VIENNA.

290. ℞. Acidi carbolici,
Liq. ammoniæ fortis, āā f. ʒ v.
Alcoholis, f. ʒ ij. M.
Keep in a stoppered dark-glass bottle.

When a catarrh is commencing, a few drops are placed on three or four layers of blotting-paper; the patient holding this in his hand, and closing his eyes, inhales deeply from it as long as any smell is perceptible. The remedy should be applied every two hours.

PROF. M. CHARTERIS, M. D., GLASGOW.

291. ℞. Liq. morphiæ (B. Ph.), ♏x.
Vin. antimon., ♏viij. M.
This much at a dose, given twice at an interval of three hours, will effectually stop a commencing cold.

In a note to PHILLIPS' *Materia Medica*, Dr. H. G. PIFFARD, of New York, says that ℥ij–v of the imported tincture of eye-bright, *Euphrasia officinalis*, repeated every two or three hours, will often abort acute nasal catarrh.

Dr. J. SOLIS COHEN has found that the inhalation of chloroform to the induction of anæsthesia, will often abort acute coryza attended by intense pain and tension in the frontal region, and obstruction to breathing.

GENERAL TREATMENT OF CATARRH.

PROF. FELIX VON NIEMEYER, M. D., TÜBINGEN.

In the treatment of *acute* nasal catarrh, the production of active diaphoresis is the only procedure worthy of confidence. A Russian bath should be advised where practicable. In most cases, all that is necessary is to direct the patient to confine himself to his room for a few days; to keep the head and feet warm; to swallow some hot drinks frequently during the day; to use linen pocket-handkerchiefs, not silken or cotton, and to change them frequently; and to smear the upper lip with salve, to protect it from the acrid secretion. In the latter stages, a long walk in the open air, or even an occasional pinch of snuff, hastens the cure. In infants at the breast, the nostrils should be cleared by syringing them with warm water, and they should be fed by the spoon or bottle so long as the obstacle to sucking continues.

In the treatment of *chronic* nasal catarrh, the cachexia, whatever it may be, should be attended to. Local remedies are also of the utmost importance. The most effective is penciling the swollen mucous membrane with the following solution:

292.	R.	Argenti nitratis,	gr. i–xxx.	
		Aquæ destillatæ,	f. ℥j.	M.

Or cauterizing with the lunar caustic in substance. The following, to be used as a snuff, is in great repute:

293.	R.	Hydrargyri chloridi mitis,			
		Hydrargyri oxidi rubri,	āā	gr. xij.	
		Sacchari,		ʒ ss.	M.

For one powder.

When the discharge is offensive, and the above treatment fails, the following may be tried:

294. ℞. Iodinii, gr. ij–iv.
Potassii iodidi, gr. iv.–viij.
Aquæ, f.℥ vj. M.
To be used as an injection into the nostrils.

To diminish the irritation of the mucous membrane, a variety of *snuffs* have been suggested. A simple one, and yet effective, is that recommended by Dr. BROWN-SÉQUARD. It is *pulverized white sugar*, used *ad libitum*.

Dr. E. C. MANN, New York, modifies this to:

295. ℞. Pulv. sacchari albi,
Pulv. camphoræ, āā q. s. M.
For a snuff.

Prof. TROUSSEAU recommends, in chronic coryza, a snuff of finely pulverized *tannin*. Prof. STILLÉ also recommends a snuff containing tannic acid and white sugar, reduced to a very fine powder and forcibly inspired twice a day or oftener, according to the exigencies of the case; or, a glycerine of tannin, applied with a brush, after the parts have been cleaned by the usual douche or otherwise.

A variety of *inhalations* are applicable:

L. WALDENBERG, M. D., BERLIN.

296. ℞. Ammonii chloridi, gr. iv.
Aquæ destillatæ, f.℥ j. M.

For inhalation by atomizer, in that form of coryza known as dry snuffles. When the mouth is closed and the proper inclination given to the head, the nebulized spray can readily be inspired into the nostrils. Solutions of common salt may also be employed in the same manner.

J. SOLIS COHEN, M. D., PHILADELPHIA.

297. ℞. Pulveris aluminis, gr. v–xxx.
Aquæ, f.℥ j. M.
The nebulized spray to be drawn into the nostrils three or four times a day, to diminish the profuse secretion of coryza and destroy fœtor when present.

DR. LOMBARD, GENEVA.

298. ℞. Pulveris opii,
Pulveris benzoini,
Sacchari, āā gr. ij. M.
For one powder. To be used in *catarrhal neuralgia complicating coryza*, in the following manner: Heat in the fire a thin plate of iron (a shovel) and throw upon it this powder, holding the head over it, so as to breathe the fumes through both nose and mouth. To be repeated two or three times a day, or oftener. It acts like a charm, frequently giving immediate relief.

Others advocate the inhalation of *iodine vapor*, in this affection, effected by placing a bottle of the tincture under the nose, the hand supplying warmth enough to vaporize the iodine. The inhalations, each lasting a minute, are to be repeated every three minutes during an hour.

POST-NASAL CATARRH.

DR. BEVERLY ROBINSON, NEW YORK.

According to this writer, (*New York Medical Journal*, November, 1875,) no method of treatment in post-nasal catarrh is curative in every case, and this results, in great part, from the fact that it is impossible to apply remedies to every portion of the diseased membrane. The results of his observation are to the effect that constitutional treatment proves a most important element in the case. If the patient is anæmic, *iron*, *quinine*, and *cod-liver oil* prove of decided advantage; and if there is malaria present, it has to be combated by a sufficient amount of quinine. Of the agents which have a local effect on the naso-pharyngeal and pharyngeal mucous membranes, he has experimented with balsam-copaiba, cubebs, guaiacum, ammoniacum, and sulphur, and is led to the conclusion that the three most important are *cubebs*, *sulphur*, and *copaiba*, and of these, he is in favor of *cubebs*. At first, he used the oleo-rosin of cubebs, but found that it did not possess the virtues of cubebs itself. A form that has proved satisfactory, is:

299. ℞. Cubebæ, ℥ ij.
Syr. aurantii, f. ℥ iij.
Aquæ menth. piper., f. ℥ viij. M.
Half a teaspoonful every three hours.

It is necessary to continue the cubebs for one or two months, and by its use the sensation of stuffness in the head and hawking mucous may be relieved.

Diarrhœa or an herpetic eruption may appear during the use of the cubebs, and, if so, it is judicious to interrupt its administration for a few days.

The *nasal douche* is frequently used in this affection, often, it is believed, to the detriment of the patient. The following simple douche is recommended by

DR. L. MARIEOSKY, OF RUSSIA.

A thin tube of India-rubber, about twenty-eight inches long, is connected on one end with the narrow part of a glass funnel, and the

other end with a wooden or bone nose-piece fitting into one of the nostrils; the solution is poured into the funnel held above the level of the patient, and thus conducted to the nostrils; the patient is told to open his mouth and slowly to inspire, when the fluid will flow out of the other nostril, and thus wash out all the parts within the nasal cavities. Dr. M. reports numerous successful cases of acute and chronic catarrhs by this means. He uses a continuous current of weak solutions of permanganate of potash, salicylic acid, or sulpho-carbolate of zinc. (*Dobell's Reports*, 1876.)

DR. J. W. BARD, OF OHIO.

This practitioner has had very good success in recurrent post-nasal catarrh from the following:

300. ℞. Pulv. cubebæ, ℥j.
Flor. anthemis nob., ℥ss. M.

Mix thoroughly. To be put into a common tobacco pipe and smoked, puffing the smoke through the nostrils. It should be discontinued if a fresh attack of nasal catarrh set in, and resumed as soon as the inflammatory symptoms commence to subside. (*Medical and Surgical Reporter*, April 6th, 1878.)

MR. LENNOX BROWNE, LONDON,

Mentions *iodoform* as a therapeutical agent, and recommends it as a local application in subacute and chronic inflammations of the naso-pharynx. He applies it in two ways; first, as an ethereal solution (1 to 10 or 12) with a brush, sponge or with cotton-wool, the throat being first treated, and then the remedy applied to the nasal passages. Only momentary discomfort is produced during the evaporation of the ether. After the application, which should be repeated twice or thrice a week, the mucous membrane appears paler and is covered with a thin film of iodoform. After about six repetitions, the swelling of the membrane will have been much diminished. The second method, consisting in the admixture of the remedy with unguentum petrolei:

301. ℞. Unguenti petrolei, ℥j.
Iodoformi, gr. v–viij.
Æth. sulph., q. s. M.

Dissolve the iodoform in the ether and add to the unguent. Apply night and morning with a brush.

RÉSUMÉ OF REMEDIES.

Acetum. Bathing the chest every morning with vinegar and water, often diminishes the liability to an attack in persons subject to repeated catarrhs.

Aconitum is highly recommended by Dr. RINGER, at the outset of febrile catarrh:

302. ℞. Tincturæ aconiti radicis, ♏viij–xvj.
Aquæ, f.℥ ij. M.

A teaspoonful every ten or fifteen minutes, for two hours, and afterwards repeated every hour. If there be much prostration, and the pulse be feeble and weak, the dose should be diminished. So soon as the sensation of "pins and needles" be produced, the aconite, which has then been pushed to its full extent, should be stopped.

Ammoniacum is a useful remedy in the chronic catarrh of old age.

303. ℞. Ammoniaci, ℥ ij.
Acidi nitrici diluti, f.℥ ij.
Misturæ acaciæ, f.℥ viij. M.

Two tablespoonfuls, in any bland fluid, every two hours.

Ammonii Carbonas is a very useful remedy in this affection. For Dr. DOBELL'S method of employing it to stop a cold, see above.

Arsenicum is of benefit, when the affection is of a local character, and when there is an absence of inflammatory action and febrile disturbance, which states contra-indicate its use.

Cannabis Indica is highly praised by Dr. WARING CURRAN (*Medical Press*, September 9th, 1868,) as a sedative and expectorant. He orders the following mixture:

304. ℞. Tincturæ cannabis indicæ, f.℥ ij.
Pulveris tragacanthæ compositi, ℥ j.
Ætheris chlorici, f.℥ iss.
Aquæ anisi, f.℥ vj. M.

Two tablespoonfuls every second hour.

Hydrargyrum ammoniatum. In chronic coryza with irritating secretions, Dr. GUERSANT, of Paris, recommends:

305. ℞. Hydrargyri ammoniati, ℈ iss.
Pulveris altheæ, ℥ j. M.

Use as a snuff.

Ipecacuanha. A full dose of Dover's powder (gr. x) taken at bedtime, and at the very outset of the attack, often arrests it.

**Opium.* A full opiate at bedtime, followed by a laxative in the morning, will, if given at the outset, frequently cut short a common attack of catarrh.

Potassii Chloras. Dr. L. SEDGWICK (*British Medical Journal*, 1873,) speaks of the value of potassium chlorate in catarrh. If taken early and frequently, it will stop many a cold. The best form is the lozenge, eight or ten or more of which may be taken in the twenty-four hours. These should be sucked very slowly, for its action is chiefly if not altogether local. It always quickly relieves the stuffing of the nose, the rawness of the throat, the thickness of the voice, and if begun soon enough, speedily cures the cold.

Sanguinaria. The regular employment of small doses of the tincture of this root often affords relief in protracted catarrhal affections, assuming the character of incipient phthisis. It should be persevered in for several weeks.

Scilla is useful after all active inflammation has subsided, before which time it should never be employed. It unloads the air passages and relieves congestion and dyspnœa. Dr. C. J. B. WILLIAMS states that squill is principally used in mild cases, unattended with purulent expectoration. He combines it with an alkali and a small portion of opium, to prevent its too rapid passage by the kidneys.

EXTERNAL REMEDIES.

Argenti Nitras. Penciling the swollen mucous membrane with a solution of nitrate of silver is recommended by Prof. NIEMEYER. (F. 292.)

Electricity. In the acute stage, a constant current from six to eight cups, applied by means of a nasal bath, produces good effects. In chronic coryza nearly all cases, it is asserted, may be cured by galvanic and Faradic stimulation.

Inhalations and Fumigations. Prof. TROUSSEAU highly recommends *benzoin* fumigations in chronic catarrh. The air of the patient's apartment should be impregnated with the vapor of benzoin, the drug being thrown upon burning coals; or it may be inhaled from a common inhaler, the balsam being placed in barley water. *Benzoin and Opium* fumes combined are of service in cases complicated with catarrhal neuralgia; *iodine vapor* is useful. (P. 151.) Inhaling the fumes of burning *turmeric* is a common East Indian remedy. A small piece of burning turmeric should be placed under a small funnel, and the vapor, as it passes through the small aperture, drawn up into the nostrils. *Oxygen* inhalations have been advised in catarrh, complicated with emphysema. *Sulphurous acid* fumigation (sprinkle from time to time, on a few red-hot cinders, a small portion of sulphur, so as to fill the room not inconveniently with the fumes,) or spray, is highly recommended.

The following drugs may be used in the form of spray. The dose mentioned is to be added to one ounce of water:

Acidum carbolicum,	1–2 grs.
Acidum sulphurosum,	2–8 fl. drs.
Acidum tannicum,	3–12 grs.
Alumen exsiccatum,	3–20 grs.
Argenti nitras,	1–3 grs.
Borax,	5–20 grs.
Extractum belladonnæ,	¼–1 gr.
Extractum conii,	5–10 grs.
Extractum opii,	¼–2 grs.
Ferri ammonio-sulphas,	3–6 grs.
Hydrargyri perchloridum,	$\frac{1}{16}$–⅛.
Liquor arsenicalis,	3–8 mins.
Oleum terebinthinæ,	1–5 mins.
Potassii chloras,	5–10 grs.
Potassii permanganas,	2–4 grs.
Potassii bromidum,	2–10 grs.
Potassii iodidum,	2–10 grs.
Sodii chloridum,	5–40 grs.
Tinctura ferri perchloridi,	5–30 mins.
Tinctura iodi,	1–15 mins.
Tinctura opii,	3–20 mins.
Zinci sulphas,	3–15 grs.

EMPHYSEMA.

DR. J. M. DA COSTA, PHILADELPHIA.

The treatment in cases of emphysema should be a double one; to modify the bronchial trouble which keeps up the affection, and to alleviate the difficulty of breathing, which may at times rise into paroxyms of attacks of asthma. In point of radical treatment, there are no means which will cause the distended air vessels to resume their natural size. As a matter of absolute experience, Dr. DA COSTA has thought that he has seen, in cases of pure emphysema, not associated with bronchial symptoms, a long course of *iodide of potassium* (three to five grains, thrice daily, for several months,) favorably influence the disease, the respiratory murmur becoming fuller and freer, and the prominence of the chest walls less visible. Good results are also obtained from persistent *counter-irritation*. Small flying blisters at various portions of the chest are serviceable. A number of cases are reported in which the constant employment of the continuous *galvanic current* has led to a diminution in the size of the chest.

Strychnia and nux vomica are useless. *Chlorate of potassium*, as well as iodide, is of service.

306. ℞. Potassii chloratis, ℥ iss.
Tincturæ belladonnæ, f.℥ iss.
Extracti pruni virginianæ fluidi,
Tincturæ cinchonæ compositæ, āā f.℥ ij. M.

A dessertspoonful four times a day, in emphysema with chronic bronchitis and loss of appetite. Also, dry cups applied to the chest morning and evening.

307. ℞. Potassii iodidi, ℥ ij.
Extracti senegæ fluidi, f.℥ j.
Syrupi pruni virginianæ, f.℥ ij. M.

A teaspoonful thrice daily.

Or:

308. ℞. Potassii iodidi, ℈ ij.
Syrupi ipecacuanhæ,
Tincturæ scillæ, āā f.℥ ss.
Syrupi, f.℥ ij. M.

A tablespoonful thrice daily.

Together with counter-irritation to the chest.

309. ℞. Chloroformi f.℥ ss.
Linimenti ammoniæ,
Linimenti saponis, āā f.℥ iss. M.

To be rubbed on morning and evening, and to be placed on flannel, and allowed to remain against the skin for fifteen minutes.

The iodide is also favored by

E. HEADLAM GREENHOW, M. D., LONDON.

310. ℞.	Potassii iodidi,		gr. xxxvj.	
	Ammonii carbonatis,		ʒj.	
	Tincturæ scillæ,			
	Tincturæ hyoscyami,	āā	f.ʒss.	
	Aquæ camphoræ,		f.ʒv.	M.

A tablespoonful thrice daily. Also direct the patient to smoke a stramonium cigarette, so soon as he feels the commencement of an asthmatic attack.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

The symptomatic indications in emphysema (our author considers we are totally unable to fulfill the indications of the disease itself, the nutritive alterations upon which it depends being irreparable,) are first, the proper treatment of bronchial catarrh, which almost always accompanies this affection, and greatly adds to the distress of the patient. Habitual wearing of flannel next the skin, stimulants to the chest, warm baths of water or vapor, and the alkaline muriatic mineral springs (especially the thermal springs of Ems), are of signal benefit.

The next symptomatic indication is to moderate the habitual shortness of breath and the attacks of severe dyspnœa. Sending the patient, during the summer, to the pine-wood region, and particularly to places where there is a heavy fall of dew, will allay the persistent oppression of the chest. The inhalation of compressed air, for the same reason, is an excellent palliative. To avert the asthmatic attacks, a strict diet, the avoidance of food likely to induce flatulence, light suppers, and the keeping of the bowels open, are required.

During the attacks of emphysematous asthma, the narcotics should be used with caution, unless called for by bronchial spasm. The more suitable remedies (beside the emetics, which are very appropriate,) are the stimulants, camphor, musk, benzine, and

311. ℞.	Vini portensis,		f.ʒj–iss.

Every three hours.

When these fail, use

312. ℞.	Olei terebinthinæ,		f.ʒj–iv.	
	Aquæ menthæ piperitæ,		f.ʒiv.	
	Sacchari,			
	Pulveris acaciæ,	āā	ʒj.	M.

A tablespoonful every three hours.

For the dropsy complicating the affection, vigorous diaphoresis will give excellent results whenever it depends upon a capillary bronchitis. Later in the disease, when it arises from failure of the heart to compensate for the circulatory derangement of the lungs, it may be relieved for a time, by

313. ℞. Pulveris digitalis, ℈ ss–j.
Aquæ, f.℥ vj. M.
For an infusion. A tablespoonful thrice daily.

Where digitalis fails, squills may be employed.

314. ℞. Aceti scillæ, f.℥ j.
Aquæ destillatæ, f.℥ vj.
Potassii carbonas, ad saturandum. M.
A tablespoonful every two hours.

MEREDITH CLYMER, M. D., NEW YORK.

For the relief of the asthmatic fits of emphysema, nothing is so sure as a full dose of *opium* with sulphuric or chloric ether.

315. ℞. Tincturæ opii, f.℥ j.
Ætheris, f.℥ ij. M.
Sixty drops every twenty minutes.

To each dose may be added:

Tincturæ lobeliæ æthereæ, gtt. xx.

Lobelia is also extolled by

THOMAS KING CHAMBERS, M. D., LONDON.

316. ℞. Tincturæ ferri chloridi, f.℥ ijss.
Tincturæ lobeliæ æthereæ, f.℥ ij.
Aquæ camphoræ, f.℥ iv. M.
A tablespoonful, in water, thrice daily.

The object of the iron is to try and restore its full vital powers to the creative arterial blood, so that it may renew the pulmonary membrane, that it may form healthy elastic tissue, instead of the imperfectly elastic degenerated tissue. The lobelia is ordered as a substitute for a more powerful medicinal agent, *tobacco*. Nothing calms the distressing asthma so well as a few whiffs of strong Virginia.

PNEUMATIC TREATMENT.

Several German writers have reported cures of emphysematous cases by expiration of rarefied air, and inspiration of condensed air rich in

oxygen. The object is to remove as much as possible of the "residual air" which remains in the superior parts of the lungs after each inspiration, and to introduce highly-oxygenized fresh air, without the alveoli enduring a higher pressure than the surface of the body. Dr. JOSEPHSON, of Hamburg; Dr. PIRCHER, of Meran, and others, have reported very considerable success by these methods, systematically carried out. (*Dobell's Reports*, 1877, pp. 375–6.)

RÉSUMÉ OF REMEDIES.

Æther Sulphuricus is a valuable anti-spasmodic. Dr. M. CHARTÉRIS recommends in the paroxysmal cough of emphysema:

317. ℞. Tinct. lobeliæ, f. ℥ ij.
Spts. æth. sulph., f. ℥ iij.
Tinct. conii, f. ℥ ij.
Mist. amygdal., ad f. ℥ vj. M.
A tablespoonful every three hours.

Oleum Terebinthinæ is advised by Prof. NIEMEYER for attacks of emphysematous asthma.

**Opium* is of decided value in asthmatic emphysema, especially combined with ether. (F. 315.)

Stramonium is undoubtedly useful in many cases.

Tabacum, according to Dr. CHAMBERS, smoked, relieves the bronchial spasm.

EXTERNAL REMEDIES.

Respirators. Various attempts have been made to devise means to facilitate expiration. A method suggested by Dr. BERKART to effect this purpose consists in adjusting an apparatus to the mouth and nose, from which a tube proceeds to a suction-pump, which is worked with each expiration, so as to rarefy the air.

Compression. Dr. GERHARDT has adopted, with some advantage, an old method, consisting in making pressure, during expiration, on the chest walls and on the abdomen. The results of this method are favorable in proportion to the youth of the patient and the flexibility of the cartilages of the ribs. It is very serviceable in cases in which some of the air-passages are blocked up by viscid secretion. While Dr. GERHARDT has found very advantageous results from this expedient, methodically applied, he has recognized two dangers in its application, neither of which has, however, had any untoward result. These are, firstly, hæmoptysis, which, no doubt, was the result of the increased pressure of the blood, brought about by the external compression; and, secondly, that muscular twitching which was observed to supervene during the process.

EMPYEMA.

DR. JOHN G. BLAKE, BOSTON.

This writer states that the treatment of empyema is now chiefly surgical. (*Medical and Surgical Reports of the Boston City Hospital.* Second Series. 1877.) His method of operating is to make an incision from one to two inches long, parallel with the ribs, between the seventh and eighth, a little inside the scapula, and toward the axillary line. This point possesses the advantage of being the most dependent, in the position easiest to the patient, and of allowing perfect drainage. Usually, a catheter or tube has to be maintained in the incision to keep it open. No general anæsthetic should be administered, as experience shows that patients requiring this operation bear even ether badly.

The after-treatment depends a good deal on the character of the pus. When it is free from odor, it is not desirable to begin syringing the cavity at once. Such a procedure cannot fail to be irritating, and sudden deaths have been attributed to it. It is time to begin washing out the cavity when the pus becomes offensive. It may then be done once or several times a day, with a solution of carbolic acid of appropriate strength, as:

318. ℞. Acidi carbolici, gr. j–iij.
Glycerinæ, f.℥j.
Aquæ, f.℥j. M.
For an injection.

Or salicylic acid may be used:

319. ℞. Acidi salicylici, ℥j.
Sodii phosphatis, ℥iij.
Aquæ, f.℥viij. M.
Dilute with an equal quantity of water, and use for a dressing and injection.

Or iodine may be employed, as:

320. ℞. Potassii iodidi, gr. xxx.
Iodinii, gr. x.
Aquæ, f.℥viij. M.

In reference to the class of cases in which the operation is indicated, Dr. BLAKE adopts the conclusions laid down by Dr. HENRY I. BOWDITCH, as follows:

First. Children with empyema are more likely to recover than adults; nearly all recover.

Second. Adults with recent trouble are in a more favorable condition than those in whom the disease has lasted many months. When the disease is recent, the lung expands rapidly, and improvement begins from the time of operation; when chronic, expansion is slower, may be only partial, or, possibly, may not occur at all.

A permanent opening may be made in two ways, either by a large trocar and canula, and the insertion of a drainage tube afterwards, or by making an incision one or two inches long between the ribs, and keeping it open. The latter is more painful, but it is the better operation.

Do not make a permanent opening in cases where there is well-marked phthisis.

If the pus is sweet, injections are not required. If there are signs of purulent absorption, use carbolic-acid solution (one or two grains to the ounce of warm water is generally sufficient), wash out the chest twice a day, or oftener, if necessary, *and be sure you have constant drainage.*

DR. BEVERLY ROBINSON, NEW YORK.

This writer has carefully examined the statistics of death after *aspiration* for fluids in the pleural cavity, and maintains, as the result of his researches, that one of the most positive advances of our day, in the therapeutics of pleurisy with effusion, is thoracentesis by means of the pneumatic aspirator. Inasmuch as it is proved that puncture of the chest walls, with a capillary needle attached to the improved aspirator, whenever performed with due precautions against the entrance of air into the pleura, is a perfectly simple and harmless operation, and, further, that any appreciable amount of liquid, irrespective of its nature, is, by its presence, pernicious, and may become dangerous: therefore, he holds that, *in all cases of pleuritis, in which fluid is present, we should, without hesitation, make use of the aspirator to withdraw the morbid effusion.*

To this law he only affixes *one* limitation and *one* exception.

The limitation is: Whenever very large or excessive quantities of fluid are present, it is wiser to puncture the chest on two successive occasions, so that all risk of acute œdema of the lung on the affected side shall be avoided.

The exception is: If the patient be very much enfeebled, and the effusion be small or moderate, we may, with advantage, delay the operation, during a brief period, until his forces have been somewhat re-established.

By proceeding after this manner, all danger of *fatal syncope* will be obviated. (*New York Medical Record*, Nos. 325, 326.)

Meanwhile, of course, if the effusion from small, or moderate, rapidly becomes large or excessive, the formal and imperative indication is to operate so soon as possible.

DR. HENRY W. FULLER, LONDON.

This experienced physician thinks there is a tendency to have recourse to tappings or incisions too early in pleuritic effusions. (*British Medical Journal*, January, 1872.) When called to a patient whose chest is full of fluid, we should use an aspirator, or small grooved needle, to ascertain the character of the fluid. If it is simply serum, other measures should precede tapping. Diuretics, diaphoretics, and mercury are generally of no value. In many instances, *blisters* prove very beneficial; so, also, the constant application of a weak solution of iodine.

321. ℞. Tinct. iodinii compos., f.℥j.
Glycerinæ, f.℥ij.
Aquæ, f.℥v. M.
For external use.

This weak solution has the advantage of possessing all the absorbent properties of iodine, without damaging the cuticle and thus destroying the absorbing surface. In addition to these, the *dry method* of treatment may be employed. This is denying the patient all fluid food; it is useful where the pleural membrane is not yet much diseased. If, after a month of treatment, marked improvement is not visible, tapping should be resorted to. The fear of bad results from the admission of air into the pleural sac, is unfounded.

DR. BALTHAZAR FOSTER, LONDON.

The respective indications for aspiration, tapping, and incision, in cases of pleuritic effusion, have recently been considered by this writer. Experience having shown that both the expectant and the active medicinal treatment are alike untrustworthy, the surgical is our only resource. Dr. FOSTER divides cases of pleuritic effusion into several classes: 1. *Acute cases.* In these, the use of the aspirator is forced

upon us by certain urgent symptoms, especially dyspnœa. Here, the operation is a means of saving life, not of treatment; for a chest full of fluid, dyspnœa being absent, is not an indication for aspiration. Certain adynamic cases, however, occur where the fluid soon becomes purulent; here, a preliminary opening should be made, and, if pus be present, aspiration is the most appropriate treatment. 2. *Cases of over three weeks' duration, where fever has abated.* Here, the operation should be performed to relieve the morbid condition and expedite recovery. In such cases, the lung becomes covered with a fibrinous deposit, and absorption of fluid is impeded. No dependence, therefore, can be placed upon the use of diuretics, blisters, and other general remedies. 3. *Chronic pleurisy, with exacerbations.* Here, if the chest be from one-half to two-thirds full of fluid, and the disease have lasted over two months, aspiration is decidedly indicated. 4. *Empyema.* Pus being present, the rule should be evacuation. Dr. FOSTER compares the various methods employed for emptying the pleural cavity. He recommends in children, repeated aspirations, with, in some cases, washing out the pleural cavity with carbolized fluid. In other cases, and especially in adults, he prefers two incisions through the chest-wall and the use of drainage tubes; and, if this is not sufficient, a free opening and a thorough washing out of the pleural cavity. Some cautions are necessary in aspirating. First, the operation must not be too rapidly performed; second, the quantity of fluid allowed to escape must be carefully watched, and must depend upon the condition of the lung and the state of the patient.

MOUNT SINAI HOSPITAL, NEW YORK CITY.

The method employed in a large number of cases in this hospital, with good success, is to make two openings in the chest, one anterior, and the other lateral and slightly posterior. The pus is entirely removed, and *warm water*, of a temperature of 100°, either plain or very slightly medicated with carbolic or salicylic acid, or iodine, is carried in at the upper opening and out at the lower one, until all trace of pus has disappeared from the discharge. Pieces of oil-silk are placed over the lower opening, and so fastened with collodion that the bed-clothes are not soiled. In order to secure a free circulation for the water, the catheter conducting it in should be inserted well into the anterior opening. In some cases, where a counter-opening may seem to be contra-indicated, it becomes necessary to carry a gum-elastic catheter

in for its full length, and even then, all trace of pus may not be removed. It has been found by experiment that, when a double canula is introduced for the entrance and exit of the fluid, a current is caused between the two openings of the canula, and only an ounce or two of pus is removed; and, as before suggested, the next best plan to that of counter-openings is to make use of a long catheter and allow discharge to take place at the opening made in the chest. (*New York Medical Journal*, August, 1876.)

RÉSUMÉ OF REMEDIES.

Acidum Carbolicum, when used as an injection, is said by Dr. DICKENSON to cause serious irritation. (*British Medical Journal*, July 8th, 1876.) But it is approved by Dr. BLAKE (F. 318) and Dr. WINIWARTER; the latter washes the pleural cavity with a one per cent. solution.

Acidum Salicylicum has been used. (F. 319.)

Iodinium is a favorite injection. Dr. DICKENSON recommends:

322. ℞. Liquoris iodinii, f.℥ ij.
Aquæ, Oj. M.

EXTERNAL MEASURES.

Aspiration is often a successful method of withdrawing the accumulation.

HÆMOPTYSIS.

DR. MARIUS CARRÉ, PARIS.

This writer (*Archives Gen. de Médécine*, January, March, 1877,) remarks on the treatment of the nervous variety of hæmoptysis. Blood-letting, useful in the congestive variety, is injurious here. Anti-spasmodics, narcotics and revulsives are of little value. The use of general baths is decidedly efficient. With these should be combined the constitutional use of arsenic and quinine:

323. ℞. Acidi arseniosi, gr. $\frac{1}{60}$–$\frac{1}{30}$.
Quiniæ sulphatis, gr. i–ij. M.
For one pill. Twice or thrice daily.

M. GUBLER has shown that quinine stimulates capillary contractility directly by contact, and indirectly by its action on the spinal cord.

Attacks of profuse hemorrhage call for the temporary use of astringents and acids.

DR. BARTLETT, NEW YORK.

This practitioner states that for ten years he has used the following formula in hæmoptysis, and knowns of no combination that at all approaches it in efficiency. (*Buffalo Medical Journal*, September, 1878):

324. ℞. Tr. digitalis, ℥ iss.
Ol. terebinth., ℥ iij.
Ol. menth. pip., gtt. x.
Acidi sulph. ar., ℥ iij.
Alcoholis, q. s. ad ℥ ij. M.

Dose, forty to sixty drops well mixed with sugar, to which one or more tablespoonfuls of water may be added, every two, three or four hours, according to urgency of the hemorrhage.

DR. J. M. DA COSTA, PHILADELPHIA.

The following are the agents generally employed by this practitioner:

325. ℞. Acid gallici, gr. xx.

For one powder. In acute hæmoptysis. To be repeated every ten minutes until hemorrhage ceases.

326. ℞. Cupri sulphatis, gr. ½.
Ferri sulphatis, gr. ij.
Extracti hyoscyami, gr. j. M.

For one pill, thrice daily.

In persistent slight pulmonary hemorrhage. Sulphate of copper in such cases seems to control the circulation within the lungs, and to arrest a tendency to bleeding. This action is not due to its nauseating effect, for, in this dose, it does not nauseate. The administration of cod-liver oil should be postponed until the hæmoptysis is gotten rid of.

327. ℞. Ferri chloridi, gr. ij–x.
Aquæ destillatæ, f. ℥ j. M.

For inhalation by atomizer.

328. ℞. Liquoris ferri subsulphatis, ♏ x–xl.
Aquæ destillatæ, f. ℥ j. M.

For inhalation by atomizer.

329. ℞. Acidi tannici, gr. x–xx.
Aquæ destillatæ, f. ℥ j. M.

For inhalation by atomizer.

330. ℞. Pulveris aluminis, gr. xxx.
Aquæ destillatæ, f. ℥ j. M.

For inhalation by atomizer.

HORACE DOBELL, M. D., LONDON.

331. ℞. Extracti ergotæ fluidi, f.℥ij.
Tincturæ digitalis, f.℥ij.
Acidi gallici, ℥j.
Magnesii sulphatis, ℥v.
Acidi sulphurici diluti, f.℥j.
Infusi rosæ compositi, f.℥vj. M.

Two tablespoonfuls every three hours until the hemorrhage is arrested.

In spite of the fashionable outcry against complicated prescriptions, Dr. DOBELL recommends the above as the most efficacious and the most rational combination of remedies for a case of profuse tubercular pulmonary hemorrhage. In any given case, either of the ingredients may be omitted, if the symptons indicate that it is not required, or that it has already done its duty. The object of the ergot is to contract the vessels; of the digitalis, to steady the heart; of the gallic acid, to clot the blood; of the epsom salts, to relieve the congestion; and of the dilute sulphuric acid, to assist the rest.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

332. ℞. Copaibæ,
Syrupi,
Aquæ menthæ piperitæ,
Alcoholis, āā f.℥j.
Spiritûs ætheris nitrosi, f.℥ss. M.

A dessertspoonful every two to four hours.

A formula much in use in very obstinate hæmoptysis:

333. ℞. Aluminii et potassii sulphatis, ℥j.
Morphiæ muriatis, gr.¾.
Sacchari, ℥j. M.

Divide into twelve powders. One every hour, in hæmoptysis. Cold compresses to the chest, absolute rest, and silence.

In the first place, the physician should seek to calm the spirits of the patient, which are always much excited; and, inasmuch as the attacks are almost always repeated several times, it is well to save him from further agitation, by straightway informing him that there is more blood to come, while, at the same time, we should absolutely deny the possibility of his bleeding to death. Indeed, we are certainly warranted here in deceiving the patient, by affecting to make light of the affair, and even to represent the hemorrhage as a salutary process. With a little tact, the physician may leave his patient in a state of comfort and peace of mind—a success of no slight importance. The

chamber must be kept cool, all hot drinks forbidden, and all food eaten cold. Conversation should be interdicted, and the patient urged to resist, stoutly, the provocation to cough. Coughing in hæmoptysis is quite as hurtful as is snuffing and wiping the nose in epistaxis.

RÉSUMÉ OF REMEDIES.

Aceticum Acidum Dilutum is employed both externally and internally, but is a remedy of minor importance.

Alumen is serviceable in purely atonic hæmoptysis. It may be given in solution, by inhalation, or be allowed to dissolve slowly in the mouth, in substance or in lozenge. In moderate but persistent tubercular hæmoptysis, Dr. SYMONDS recommends (*British Medical Journal*, June 13th, 1868,) the following:

334. ℞. Aluminis, ℈ ij.
Acidi sulphurici diluti, f. ʒ ijss–iv.
Magnesii sulphatis, ℈ iv.
Aquæ, f. ʒ iv. M.

A tablespoonful in water, every three hours, or oftener, as required.

Ammonii Chloridum is recommended by Dr. COPLAND, in combination with muriatic acid, in passive cases of hæmoptysis, when the vital powers are depressed. The following is his formula:

335. ℞. Ammonii chloridi, ʒ iss.
Acidi muriatici, f. ʒ ss.
Decocti hordei compositi, Oj. M.

A small wineglassful every two or three hours.

Argenti Oxidum, in doses of gr. ss–j, thrice daily, has been recommended, in atonic hæmoptysis.

Chloroformum. Several cases are reported by Dr. A. M. WEIR, of Edinburgh, (*Lancet*, January, 1877,) in which the hæmoptysis was promptly checked, after other remedies had failed, by applying a flannel pad soaked in chloroform, over the lung from which the blood flows. The pad should be covered with towels or oiled silk. Its effect is said to be immediate and lasting.

Copaiba is much employed by Prof. NIEMEYER.

Creasotum fails to give satisfactory results.

Cupri Sulphas is highly recommended, by Prof. DA COSTA, in cases of persistent slight hemorrhage.

**Digitalis* is advised by Dr. WALSHE when there is irritable heart and moderate hæmoptysis. By some, it is regarded as the best remedy for hemorrhage from cavities in the advanced stages of phthisis.

Ergota is strongly recommended by Dr. DOBELL, who, however, usually associates it with other medicines. (F. 331.) Dr. J. M. WILLIAMSON (*Lancet*, November, 1875,) gives it in ♏xl doses of the fluid extract every half hour. Prof. J. HIRSCHFELD, of Vienna, believes the very best remedy in hæmoptysis is hypodermic injections of *ergotin* in concentrated solution (1 part in 10 of glycerine.) (*Dobell's Reports*, 1877.)

Ferrum is particularly of service in hæmoptysis connected with amenorrhœa. The preparations most employed are the tincture of the chloride, the solution of the nitrate, (in large doses, ℥xxx–lx,) the sulphate, and the ammonio-sulphate.

***Gallicum Acidum* is highly recommended by Prof. Da Costa, Walshe, and others as one of the best remedies in hæmoptysis, but it must be given in large doses (F. 325), gr. x–xxx, repeated as necessary.

Hamamelis. Dr. Hugo Engel (*Med. and Surg. Rep.*, May, 1879,) states that this drug is far superior to any other in hæmoptysis. In violent cases, he gives two teaspoonfuls of the fluid extract of hamamelis right away, and repeats the dose every half hour till the severe bleeding stops, and continues it later, in the dose of one or half a teaspoonful three times daily, until all signs of the spitting of blood have disappeared.

Hydrocyanicum Acidum seems to possess some power in controlling hæmoptysis when the system is irritable and spasmodic symptoms are present.

**Ipecacuanha* is recommended by Prof. Graves and other practitioners, as a remedy of considerable value. From one to two grains are given every fifteen or thirty minutes, until nausea is felt, when the benefit is generally evident, and the medicine is discontinued. Many cases are reported, attesting the efficacy of this treatment in arresting the hemorrhage and restoring heat and life to patients who were in a state of collapse from excessive loss of blood. Although it is better to avoid vomiting, no ill effects, it is said, are produced by it. The hæmoptysis of the early stages of phthisis may often be readily arrested by this remedy.

Matico is sometimes employed. In slight cases, the infusion alone is often sufficient. It is advantageously combined with ergot.

Oleum Terebinthinæ is often efficient.

Phosphoricum Acidum Dilutum, in doses of gtt. x–xxx in mucilage, thrice daily, is reported upon favorably by M. Hoffman, (*The Practitioner*, August, 1868,) who considers it superior to other mineral acids in hæmoptysis.

Pyrogallicum Acidum. Dr. A Vesey has found this of the greatest service, in doses of gr. j every half hour. It may advantageously be combined with ergot. (*Dublin Jour. of Med. Science*, December, 1875.) It has the advantage of not disturbing the stomach.

**Plumbi Acetas*, in combination with morphia and acetic acid, or with opium, is a remedy much used. Dr. Pereira considers that the action of sugar of lead and opium in hæmoptysis is rendered more certain and speedy by being given with a draught containing nitric acid, nitrate of lead being thus formed in the stomach.

Potassii Nitras is useful where there is much excitement and fever, but is not to be relied upon alone. It may be given in doses of gr. viii–x, several times daily, largely diluted, or combined with tartar emetic or digitalis.

Sodii Chloridum is recommended by Prof. Walshe, in drachm doses, either in powder or dissolved in water. It is sometimes promptly successful, even when it produces emesis.

**Sulphuricum Acidum Dilutum* is a useful remedy, though less certain in its action than gallic acid, and is a valuable adjunct to other treatment.

Tannicum Acidum, in combination with opium and ipecacuanha, has been highly recommended.

EXTERNAL MEASURES.

Cold. Ice to the chest, to the spine, or over the heart, will sometimes instantaneously arrest the hemorrhage.

Dry Cups. In the *Allg. Wien. Med. Zeit.*, May, 1878, Dr. H. SCHNEIDER expresses the opinion that the best means for the relief of congestion, or a hyperæmic condition about the lungs, is an old remedy which has fallen into disuse of late years—the application of cups. The number of cups to be applied must depend on the amount of congestion, and the effect which it is desired should be produced. A considerable amount of blood can be withdrawn from the general circulation, and will be kept in the outer wall of the chest. In comparatively mild cases, dry cups are applied to the thorax on the side corresponding with the congested lung, while if the bleeding is severe, wet cups should be placed on the affected side.

Ligation of the limbs by a tourniquet, or the Esmarch bandage, so as to prevent the venous flow, is of service in severe cases. "Jounod's boots" have been used for the same purpose.

HAY FEVER—HAY ASTHMA—ROSE COLD—AUTUMNAL CATARRH.

DR. GEORGE M. BEARD, NEW YORK.

According to this writer, there is no specific for hay fever in general, but individuals may be able to find a specific for their own cases. Many measures afford great relief in all cases. A sea voyage rarely fails, as well as a residence in elevated regions, and in certain localities.

The medical treatment he divides into general and local. Of internal remedies he considers *quinine* the most efficient. When given to prevent the disease, gr. j–iij, two or three times a day, for several weeks before the time of the attack, is the proper dose. *Arsenic*, especially when combined with belladonna, is efficient.

336. ℞. Liq. potassæ arsenitis, f.℥j.
Tinct. belladonnæ, f.℥ij. M.
From five to ten drops after meals.

Phosphide of zine, gr. $1/10-1/4$, acts well in many cases. *Opium* in

any form will palliate the symptoms. One of the best preparations for the purpose, is the "cold powder," as follows:

337. ℞.	Camphoræ,	℥ v.	
	Ether. sulphuric.,	q. s.	
Dissolve to the consistency of cream, and add			
	Ammoniæ carbonatis,	℥ iv.	
	Pulveris opii,	℥ j.	M.
Keep tightly corked.			

The dose is to be regulated by the quantity of opium borne.

Locally, many substances can be applied by means of the atomizer. Solutions of quinine are perhaps the most effectual of all. The following is commended by Dr. R. P. LINCOLN, of New York:

338. ℞.	Quiniæ sulphatis,	gr. vj.	
	Aquæ camphoræ,	f. ℥ vj.	
	Sodii chloridi,	℥ ss.	
	Aquæ,	f. ℥ iv.	M.
Use in an atomizer or snuff from the hand.			

The *Pinus Canadenis* has been used in the same way.

339. ℞.	Fld. extr. Pinus Canadenis,	f. ℥ j.	
	Aquæ,	Oj.	M.

The following is well spoken of:

340. ℞.	Potassii chloratis,	℥ j.	
	Morphiæ sulphatis,	gr. xij.	
	Aquæ,	f. ℥ vj.	M.
Use with the atomizer.			

Inhalations of aquæ ammoniæ relieve some cases.

Smoking stramonium leaves, nitre paper, etc., benefits some. Dr. MORRILL WYMAN recommends:

341. ℞.	Belladonnæ fol.,		gr. ix.	
	Hyoscyami fol.,			
	Stramonii fol.,	āā	gr. ivss.	
	Phillandrii aquatici fol.,		gr. iss.	
	Opii,		gr. ¼.	M.
Make two cigarettes by rolling in paper. Only two to be used during an attack.				

DR. E. C. SEGUIN, NEW YORK.

342. ℞.	Ammonii bromidi,	℥ i–ij.	
	Aquæ,	f. ℥ j.	M.
Use as a gargle frequently.			

343. ℞. Ammonii bromidi, gr. x–xxx.
Aquæ, f.℥j.
Use by an atomizer, or inhale into the nostrils.

This has given marked relief to patients. (*New York Medical Record*, November, 1876.)

DR. J. S. HOLDEN, ENGLAND.

344. ℞. Quiniæ sulphatis, gr. xij.
Acidi hydrochlorici diluti, ♏xxx.
Aquæ, f.℥vj. M.
Add
Sodii bicarbonatis, q. s.

To make a neutral solution, add one ounce of hot water to two ounces of this lotion, and douche the nasal passages three times a day for a few days at the beginning of the attack. (*Lancet*, May, 1876.)

The *grindelia robusta* is said to give prompt relief.

345. ℞. Fld. extracti grindeliæ, f.℥iv
Fld. extracti rhei,
Fld. extracti sennæ, āā f.℥j. M.
A dessertspoonful every half hour during the spasm, and afterward at intervals of three hours.

DR. HORACE DOBELL, LONDON.

346. ℞. Chloral hydratis,
Camphoræ pulv., āā gr. xvj.
Acidi carbolici, ℈j.
Morphiæ, gr. xij.
Acidi oleici, gr. vij.
Olei ricini, f.℥vij. M.
Rub well together to make a lotion. Apply by means of a little ivory or hard-wood club to the interior of the nostril.

This author states that the tincture of *eucalyptus globulus* is valuable in hay fever where there is much prostration.

DR. EDWARD R. MAYER, PENNSYLVANIA.

347. ℞. Quiniæ sulphatis, gr. iv.
Tinct. gelsemii concent., gtt. vi.

This amount in water every four waking hours. Regarded by Dr. EDWARD R. MAYER as the best remedy for and preventive of this disease. Cures in forty-eight hours. (*Hints on Specific Medication*, p. 21.)

DR. ROBERTS BARTHOLOW, OHIO.

348. ℞. Potassii iodidi, ℥j.
Liq. potassii arsenitis, f.℥j.
Aquæ, f.℥iv. M.
A teaspoonful every four or six hours.

In addition to this internal medication, apply locally the following with a post-nasal syringe:

349. ℞. Tinct. iodinii, f.℥j.
Acidi carbolici, gtt. x.
Aquæ destillatæ, f.℥iv. M.

Arsenical cigarettes, as recommended by TROUSSEAU, may be used with advantage.

350. ℞. Potassii arsenitis, gr. xv.
Aquæ, f.℥j. M.
Moisten unsized white paper with this solution, cut and roll into cigarettes. Two or three may be smoked daily.

RÉSUMÉ OF REMEDIES.

Acidum Sulphurosum. According to Dr. JAMES DEWAR, of Ireland, the symptoms of hay fever are often checked at once by inhaling sulphurous acid in the form of the fumes of burning sulphur. (*Dublin Medical Press*, September, 1866.)

Aconitum has been recommended by Dr. RINGER.

Ammoniæ Murias, taken internally, is suggested by Dr. BEARD.

Anthemis Nobilis. Chamomile flowers smoked, or their fumes inhaled, often act very well.

Arsenicum is an important auxiliary.

Belladonna, either the leaves smoked or in doses of the tincture, is occasionally efficient.

Caffea. Strong, hot coffee is a useful palliative.

Camphora is a useful local application. It may be placed dry on the pillow at night.

Chloroform, by inhalation, will quickly relieve the spasm.

Creasotum. Dr. WALSHE recommends a trial of creasote inhalations once or twice daily, having seen remarkably satisfactory effects from them in two instances.

Euphrasia Officinalis, vulgó, eyebright, gtt. ij–v of the tincture, as often as required, is reported upon very favorably by Dr. H. G. PIFFARD, of New York.

Guarana is useful in relieving the headache.

Grindelia Robusta is praised by California physicians, in this disease.

Iodinium, in inhalation, benefits some cases. Dr. J. G. WESTMORELAND recommends placing one grain in a wide-mouthed vial, heating till it fumes, and inhaling. Repeat every day. (*Atlanta Medical and Surgical Journal*, October, 1870.)

Oleum Menthæ Piperitæ. Dr. JAMES E. BELL, of Georgia, himself a sufferer, states (*Medical and Surgical Reporter*, December, 1877,) that the remedy which he has found superior to all others to allay the irritation and to quiet the cough, is the oil of peppermint, applied locally, in vapor or in substance.

Opium is a valued palliative. The hypodermic injection of morphia gives great relief. But there is danger of inducing the opium habit by a resort to these palliatives.

**Quiniæ Sulphas* is the most generally useful remedy yet found. (See above.)

Salicin, gr. xx–xxx, twice daily, is extolled by Dr. T. J. MACLAGAN.

Stramonium Leaves, smoked, are effieient to allay the paroxysm.

Tabacum. The smoking of tobacco, to those who have not been much accustomed to it, has proved beneficial.

Tannin, in solution, may be used with the atomizer.

Zinci Sulphas. Dr. FULLER reports ten cases effectually cured by means of sulphate of zinc, administered internally, in gradually increasing doses, whilst zinc lotion was applied to the eyes, and a lotion composed of eight grains of sulphate of zinc and an ounce of glycerine to the lining membrane of the nostrils.

Mechanical Measures. Wearing a thick veil, or a respirator, or keeping two fine sponges in the nostrils, moistened with a glycerine solution, and learning to breathe constantly through the open mouth, are procedures which have relieved some cases.

LARYNGITIS.

For clinical purposes, the varieties of the disease may be classed as follows:

Acute Laryngitis.

Chronic Laryngitis.
- Follicular or glandular laryngitis.
- Aphonia clericorum, clergyman's sore throat.
- Tubercular laryngitis.
- Syphilitic laryngitis.

The tubercular and syphilitic forms are characterized by ulcers, which are not present in the other varieties.

ACUTE LARYNGITIS.

The rules of treatment of this common form, which so often attends an ordinary catarrh, are thus laid down by

JOHN SYER BRISTOWE, M. D., LONDON.

The patient should be kept in a warm atmosphere, free from expos-

ure to draughts, apply hot fomentations (a sponge wrung out in hot water) or mustard plasters to the throat, and use a gargle of *warm milk,* or some slightly astringent substance. The faucial discomfort may be relieved by the inhalation of steam (in which the patient should be taught *not* to take deep, but ordinary inspirations.) Diaphoresis should be encouraged by warm foot-baths, etc. Opium, in small doses (Dover's powder), greatly relieves the discomfort. In cases severe from the beginning, leeching externally and scarification within are of essential importance for the œdematous condition, which may even demand tracheotomy, an operation which it is better to perform early, before the patient is moribund. No patient should be permitted to die of this disease without having this chance placed in his favor.

DR. KRISHABER, GERMANY.

When the laryngitis is of the dangerous *œdematous* variety, this writer recommends the following treatment: If it is markedly inflammatory, antiphlogistic treatment should be practiced; one or two general bleedings, and wet cupping on the neck, will give considerable relief, diminishing the inflammation, and lessening the engorgement of the tissues By means of a spray apparatus, water impregnated with tannin or alum may be applied to the back of the throat. In the absence of a spray-producer, a simple irrigator filled with astringent fluid may be used. Recourse may also be had to cauterization with nitrate of silver, insufflations of tannin or alum, and scarifications and division of the ary-epiglotic folds. These last two methods are somewhat difficult to practice, but often, under the influence of spray irrigation and local bleedings, the inflammation diminishes and disappears. When the œdema of the glottis is due to tuberculosis or cancer, art is powerless against the diathesis and the laryngitis.

As an effective combination in acute febrile attacks of laryngitis,

DR. T. WHIPHAM, ENGLAND,

Has derived great benefit from the following (*Med. Times and Gazette,* 1877):

351. ℞. Vin. antimon., f. ʒ ss.
Vin. ipecac., ♏ x.
Potass. acet., ℈ j.
Spts. æth. nit., f. ʒ j.
Potass. nitrat., ℈ ss. M.

S. To be given every four hours.

DR. LENNOX BROWNE, LONDON.

Inhalation is a valuable means in acute laryngitis.

352. ℞. Tinct. benzoini comp., f.℥ iij.
Chloroformi, ♏xxv. M.
A teaspoonful in a pint of water, at 140° F., for each inhalation. A valuable sedative in acute inflammations of the pharynx and larynx.

353. ℞. Ammonii chloridi, ℈ j.
Tincturæ opii, ♏v.
Decocti cinchonæ, ad f℥ j. M.
For one dose, to be taken at 11 and 4, between meals. Used in catarrhal conditions, and in commencing head colds.

Other inhalations are:

THOMAS HAWKES TANNER, M. D., LONDON.

354. ℞. Acidi hydrocyanici diluti, ♏xv.
Spiritûs chloroformi, f.℥ iij.
Aquæ bullientis, f.℥ viij. M.
For inhalation.

L. WALDENBERG, M. D., BERLIN.

355. ℞. Sodii chloridi, gr. iv–x.
Aquæ destillatæ, f.℥ j. M.
For inhalation in acute laryngeal catarrh, by means of nebulizer.

LONDON HOSPITAL.

356. ℞. Tincturæ benzoini compositæ, f.℥ j
Aquæ bullientis, f.℥ x. M.
Let the vapor be inhaled frequently.

357. ℞. Tincturæ iodinii, ♏xl.
Aquæ bullientis, f.℥ x. M.
To be inhaled frequently.

CHRONIC LARYNGITIS.

PROF. M. CHARTERIS, M. D., GLASGOW.

For chronic laryngitis, *chloride of zinc* has been specially recommended:

358. ℞. Zinci chloridi, gr. xxx.
Aquæ destil., f.℥ j. M.
Apply locally, every day, for a week, and afterwards on alternate days.

If the secretion is excessive, turpentine or creasote makes the best inhalations; and when the laryngeal irritation is the principal feature, inhalations of hops are soothing.

359. ℞. Creasoti, ℥ iij.
Magnes. carbon., ℥ iss.
Aquam, ad f. ℥ ij. M.

Or:

360. ℞. Acidi carbolici, f. ℥ j.
Aquæ, f. ℥ vij. M.

A teaspoonful in a pint of water, at 150° F., for each inhalation.

361. ℞. Olei humuli, f. ℥ ss.
Magnes. carb., ℥ iss.
Aquam, ad f. ℥ iij.

A teaspoonful in a pint of water, for inhaling.

For touching or painting the inflamed surface, use

362. ℞. Acidi tannici, ʒ ss.
Glycerinæ, ℥ iv.

Or, when ulceration is present:

363. ℞. Sodii biborat., ʒ j.
Glycerinæ, ℥ ij. M.

DR. J. H. GARNER, CANADA.

In all varieties of laryngitis, acute and chronic, in pharyngitis, commencing tonsillitis, etc., this practitioner uses *guaiacum*. (*Canada Lancet*, July, 1861.) In clergyman's sore throat, for instance, he would prescribe:

364. ℞. Tinct. guaiaci ammon.,
Liq. potassæ, āā f. ℥ iij.
Tinct. opii, f. ℥ ij.
Aquam cinnamomi, ad f. ℥ viij. M.

Make a gargle. Use every hour. The liquor potassæ keeps the gum dissolved.

In the hoarseness and sore throat in young ladies, so commonly connected with menstrual troubles, this gargle does excellent service; or the pharynx and upper larynx may be swabbed with the pure ammoniated tincture. This produces a momentary asphyxia, but as soon as the patient gives a cough it is gone.

DR. ISAMBERT, PARIS.

In clergyman's sore throat, oratory, tobacco, and all alcoholic drinks must be interdicted. Gargles are of little avail. Pulverizers and inhalers are not much more useful. Direct local treatment to the walls

of the larynx by means of a sponge is the true plan. For this purpose, nothing equals solutions of zinc chloride:

365. ℞. Zinci chloridi, parts ½–1.
Aquæ, parts 100. M.

MR. LENNOX BROWNE, LONDON.

366. ℞. Potassii chloratis, gr. ij.
Eucalypti extracti, gr. j.
Pulveris cubebæ, gr. ¼.
Confectionis fructus, (fruit paste), q. s. M.

For one lozenge; has a joint astringent, sialogogue and expectorant action; valuable as a voice lozenge.

367. ℞. Morphiæ muriatis, gr. $\frac{1}{30}$.
Ipecacuanhæ pulveris, gr. $\frac{1}{12}$.
Confectionis, q. s. M.

For one lozenge; useful in allaying irritable cough, and assisting expectoration in laryngeal and bronchial catarrh.

In *syphilitic laryngitis* the specific treatment for syphilis, especially the mercurial treatment, is essential to success. Locally, the ulcers may be touched with dilute solutions of nitrate of silver.

In all cases of *syphilitic and tuberculous laryngitis*, the local application of a saturated solution of *nitrate of silver* in glycerine once in ten days has been recommended. The object is to substitute an acute for a chronic inflammation, and the inflammation caused by nitrate of silver recovers much quicker than that caused by most of the other caustics. Then use a spray or gargle of common salt-water three or four times a day. Occasionally an antiseptic should be added, and the best are said to be oil of cinnamon, winter-green, pepper, etc.

RÉSUMÉ OF REMEDIES.

Acidum Carbolicum. The inhalation of pulverized solutions of carbolic acid (gtt. j–v to f.℥j. aq., with a few drops of glycerine added,) is frequently of service.

Alumen is valuable as a gargle (℈j–iij to aquæ f.℥j) on the decline of the inflammatory symptoms in the acute, and generally in the chronic forms.

Ammonii Chloridum. The following is used by Dr. Da Costa:

368. ℞. Ammonii chloridi, gr. x–xx.
Aquæ destillatæ, f.℥j. M.

Use with any form of steam atomizer, throwing a fine spray. In *laryngeal catarrh*, acute as well as chronic. The dose best borne is not above 10 grains to the ounce, although as much as 2 drachms to the ounce have been employed.

Argenti Nitras may be used in inhalation (gr. v–x to f.℥j) as an abortant in the

early stages. In the ulcerated forms of tubercular or syphilitic origin a strong solution, ʒj to water f.ʒj, is the most efficient of all applications.

Balsamum Peruvianum. The recommendation originally made by HOFFMAN, in chronic inflammation of the larynx, of diffusing the vapors of the balsam of Peru, or of benzoin or tolu, throughout the air of the patient's room, by throwing the drug upon hot coals, is an excellent one. Or, the vapor may be inhaled through the inhaler.

Benzoinum is of service in strumous laryngitis. The following formula may be ordered:

369. ℞. Tincturæ benzoini compositæ,
Mucilaginis acaciæ,
Syrupi papaveris, āā f.ʒj.
Aquæ cinnamomi, f.ʒvj. M.

For one dose.

Or:

370. ℞. Tinct. benz. comp., f.ʒij.
Glycerinæ, f.ʒss.
Aquam, ad f.ʒiv. M.

For a gargle.

Bismuthi Subnitras has been found highly efficacious, applied by means of insufflation.

Catechu is an excellent ingredient for lozenges. As the pure gum is not unpleasant, a small piece dissolved in the mouth will be found efficacious in relaxed conditions of the membrane.

Collinsonia Canadensis, the stone root, is esteemed by eclectic practitioners a specific in clergyman's sore throat. (J. H. SCUDDER.)

Ferri Perchloridum is an extremely useful addition to inhalations and gargles in the follicular form.

Guaiacum may be regarded as the best of remedies in many inflammatory cases.

Potassii Chloras. Saturated solutions of chlorate of potash are valuable gargles in all forms of laryngitis and pharyngitis. Some also recommend full doses internally in severe cases.

Sodii Chloridum. Solutions of common salt, either as a gargle or inhalation, are of considerable service.

Veratrum Viride. Dr. HANDFIELD JONES has used this drug very successfully in severe acute laryngitis. He gives ♏iv of the tincture every hour until the symptoms abate or vomiting is produced. In the latter case, it may be renewed after a few hours. (*Medical Times and Gazette*, January, 1875.)

Zinci Chloridum. (See p. 177.)

EXTERNAL MEASURES.

Counter-irritants are of benefit in chronic laryngitis. The following may be employed: *Tartar-emetic ointment* (not much used); *Subclavicular Setons* (three or four silk threads); pustulations of the skin of the throat by *Croton oil.*

Dilatation in laryngeal stenosis has been successfully employed by Prof. SCHRÖTTER, of Vienna. He has devised dilators for the purpose. (*Dobell's Reports*, 1876.)

Inhalations are largely employed. The following are the principal preparations used: *Ammonii Chloridum; Balsams of Peru and Tolu* (vapor generated by placing them upon hot iron); *Benzoinum* (vapor generated by throwing the drug upon hot coals, and thus impregnating the patient's apartment, or from a common inhaler); *Hydrocyanicum Acidum Dilutum; Iodinium; Olibanum* (vapor generated by placing the gum resin on burning coals); *Sodii Chloridum; Sulphurosum Acidum* (spray or fumigation); *Vapor of hot Vinegar; Steam of boiling water* (as much as possible by the nostrils).

Insufflations of tannin or alum are serviceable in the œdematous forms.

Tracheotomy should be performed without hesitation in threatening œdema of the larynx or glottis.

PHTHISIS.

This formidable disease usually presents itself in one of two forms: (1) acute miliary tuberculosis or galloping consumption; (2) the insidious and much slower varieties known as chronic phthisis.

The treatment of the two kinds is broadly distinct. Acute phthisis, if cured at all, must be by immediate and active medication; while the management of chronic phthisis is largely hygienic and dietetic, and the exhibition of drugs plays but a subordinate part.

ACUTE PHTHISIS.

DR. McCALL ANDERSON, GLASGOW.

This practitioner claims to have treated, with success, several cases of this most terrible form of the disease. (*Lectures on Clinical Medicine*, 1877.) He feeds the patient every hour or half hour with milk, soup, or other light nourishment, and gives four to six ounces of brandy daily. The night sweats he checks by the hypodermic injection of $^1/_{100}$ grain of atropia nightly. As a stimulating expectorant:

371. ℞. Ammonii chloridi, ʒj.
Syr. scillæ, f.ʒ iij.
Infus. senegæ, f.ʒ vi. M.
A tablespoonful three times a day.

Should the febrile symptoms continue unabated, the following, which is "Niemeyer's antipyretic powder," may be ordered:

372. ℞. Quiniæ sulphatis,
Pulv. digitalis, āā gr. xij.
Pulv. opii, gr. vj. M.
Make twelve powders. One every four or six hours.

The temperature can also be promptly lowered by the application of iced cloths to the abdomen for half an hour, from time to time. To do this properly, the abdomen should be well exposed and a double blanket placed under the patient. Two pieces of flannel are folded each into four layers, large enough to cover the whole front and sides of the abdomen. One of these is wrung out of ice water, and covered with a piece of dry flannel, while the other is left to soak in the ice water. The pieces are changed every one or two minutes. Two nurses are employed to this. Of course, if there is any tendency to coldness or collapse, the procedure must be stopped.

CHRONIC PHTHISIS.

We shall first give some general plans of treatment, and later, that by special methods.

PROF. AUSTIN FLINT, M. D., NEW YORK.

After an analysis of 670 cases under his own care, in private practice, in this country, Dr. FLINT sums up the hygienic treatment as follows:

1. Many patients are benefited by change of climate; but the benefit depends more on the incidental circumstances of traveling than on any special climatic agency.

2. The most important hygienic measure is to change from indoor, sedentary habits, to outdoor, active ones.

3. Sea voyages are often of great service, but here, too, the benefit is from the accessory circumstances.

4. The appetite and taste of the patient should suggest the food, and also the use of alcoholic drinks.

5. Daily spongings, followed by frictions and moderate gymnastic exercises, are useful.

6. *Medicines.* Cod-liver oil benefits about a fourth of the cases; the hypophosphites about the same; alcohol checks the disease more or less, in a third of the cases. *Pancreatic emulsion* is useful where the dejections contain floating fat. It is better tolerated than pure fat or oil.

PROF. VON NIEMEYER.

In the treatment of phthisis, fever is the symptom which principally demands attention whenever it persists at all severely, in spite of the remedies directed against the main disease. *Digitalis* and *quinia*

have a well-merited reputation as means of arresting the abnormal calorification, and reducing the animal heat, in spite of the continuation of the disease.

373.	℞.	Pulveris digitalis,		gr. x.	
		Pulveris ipecacuanhæ,			
		Pulveris opii,	āā	gr. v.	
		Extract. helenii,		q. s.	M.

For twenty pills. One three times a day.

Add quiniæ sulphatis, ℈j, to the above prescription when the type assumed by the fever becomes periodical, the evening exacerbations severe, and the chills by which they are ushered in pronounced.

Our author is so much in the habit of using this (known as Heim's) pill, with or without quinine, in consumption, when the fever proves refractory to other remedies, that it has become a very common precription at his clinic. The exhibition is suspended whenever a distinct reduction of the temperature and of the frequency of the pulse becomes apparent, and is resumed so soon as the effect subsides. Patients pretty soon learn to judge for themselves, when it is time to stop the pills and when to resume them.

A serviceable means of distinction between the cases in which *cod-liver oil* is indicated and those in which nothing is to be expected from it, is afforded by the symptoms of the torpid and erethitic forms of scrofula. When the patient's slender frame, the lack of fat beneath his skin, and his accelerated pulse, warrant the belief that his nervous system is in a state of over-activity, cod-liver oil is generally of most signal benefit. Under its use, the plumpness of the body increases, while the general susceptibility of the system, and the diseases consequent upon it, subside. These are the cases to which this article owes its name as an anti-scrofulous remedy. But if the patient be clumsy and thick-set; if the nose and upper lip be enlarged, and the adipose layer over the rest of the body be strongly developed; if the action of the heart be retarded rather than accelerated; if the irritability of the nervous system seem unusually obtuse; in short, should there be reason to suppose that the waste of the system is diminished rather than increased, we cannot hope to relieve the disease by means of the oil.

DR. L. BURNEY YEO, M. D., M. R. C. P.,

Assistant physician to the Brompton Hospital for Diseases of the Chest, England. This writer, whose opportunities for the study of phthisis

are unusually large, has lately given his experience on some modern remedial measures in this disease, to wit:

a. The use of the *alkaline hypophosphites.*

b. The use of antiseptic inhalations, and of the sulpho-carbolates internally.

c. The treatment of phthisis by rest (local rest.)

d. The removal to mountain climates.

In regard to the *hypophosphites* he believes they have *no claim whatever* to be regarded as specific remedies for tubercular disease; but they are of considerable value in a certain limited class of cases.

In advanced phthisis, with both lungs involved, the hypophosphites are of no use. Nor are they of use in less advanced cases which are obviously running a rapid course, and are attended with much fever and cachexia. In short, in those cases which we have always been accustomed to regard as hopeless and beyond the reach of all remedies, the hypophosphites are of no avail. They are less successful with dark persons of sanguine or bilious temperament than with fair persons of phlegmatic temperament. They are much more useful in young than in older persons. The greatest benefit arises from their use, in the first place, in children in all forms of chronic lung disease; and, in the second place, in young adults of fair complexion, not very cachectic or emaciated, and with disease limited to the upper part of one lung. In the cases in which they do good, their beneficial effect is generally noticed almost immediately. The patients usually say they feel very much better "in themselves;" they feel stronger, in better spirits, are more active, eat better and sleep better. The night-sweats disappear, the cough sometimes disappears also; but it will often be observed that, while there is this general amelioration and a subjective feeling of improvement, the cough will continue unrelieved, and even occasionally become more troublesome. Notwithstanding the evident improvement in general health, the physical signs often remain the same, and even may increase in extent, while the patient has been feeling so much better that he has resumed his occupation, and declared that he felt "as well as ever he did in his life." The improvement which follows the use of the hypophosphites is frequently only of temporary duration; this is especially the case with hospital out-patients. It is much less so with private patients, who can be more carefully watched and more thoroughly protected from adverse circumstances.

Sometimes all the symptoms of phthisis disappear during the use of the hypophosphites, and the general condition as well as the physical signs undergo rapid amelioration. The patient has been, apparently, quite well, but an imprudent visit to a theatre has resulted in a fresh catarrh, and the disease has again advanced with unusual rapidity; the former remedies are now quite useless, and, in a few months, the case ends fatally. It has, indeed, seemed that, in some of these cases where the hypophosphites led to temporary arrest of the disease, the subsequent advance has been unusually rapid and quickly fatal. Patients who are mending under the influence of these remedies should be protected with more than usual care against all those conditions which may possibly lead to a relapse.

Of the *antiseptic inhalations*. LEMAIRE'S observations on the inhalation of carbolic acid may be briefly summarized as follows. It must be remembered that he gave it also internally in aqueous solution. He found, he says, very remarkable effects follow its use.

There was diminution of cough after twenty-four hours, in some cases almost a complete disappearance after a few days. The expectoration was diminished or almost suppressed, and, if the sputa were offensive, their fœtor disappeared. In many the physical condition of the respiratory organs was ameliorated. Two were cured; in others, there was a subsidence or disappearance of *râles*, and parts became pervious to air which had previously been impervious. In cases in the second stage, he had noticed increase of strength, return of appetite and sleep, increased freedom of breathing and general exhilaration. The amendment, however, did not persist in all cases.

Dr. SANSOM also offer his testimony as to the "real value" of the "dry inhalation of carbolized air" in phthisis. This excellent observer has placed on record many cases in which the internal administration of the sulpho-carbolates appeared to be of great service.

The inhalation of balsamic vapors—frankincense, turpentine, storax, etc.—in phthisis, is of very ancient date, and its value was from time to time strongly insisted upon by the older physicians. Again and again has the dilute vapor of tar been advocated as of much use in pulmonary consumption.

There is a peculiar nauseating odor in the breath of many phthisical patients, even before the development of marked physical signs. Of course, if antiseptic inhalations are to be of use, they must be frequently employed, and means must be adopted which will insure the antiseptic

vapor reaching the whole of the diseased portion of the pulmonary tissues. The vapor must be evenly diffused through the atmosphere the patient breathes.

In regard to *rest*, Dr. YEO wholly doubts that enforced inactivity of the respiratory function is advantageous in phthisis generally. When complicated with an acute attack of pneumonia or pleurisy, limitation of the respiratory movements of the chest-wall may be of temporary advantage; but those who advocate the establishment of a sort of pulmonary anæmia, as a means of checking the advance of tubercular phthisis, are resting on a false analogy and an erroneous pathology.

As for mountain air, there is no doubt it benefits a large class of patients in the earlier stages. But cases of very advanced disease, of profound cachexia, cases with active febrile symptoms, are unsuited for such migration. All who have seen much of phthisis know well enough that a great number of cases never do so well as in the quiet and comfort of home. But a restlessness seizes on many consumptive patients, even in advanced stages of the disease, and they *will not* remain at home. For such cases, a southern watering place is better suited than a mountain valley. The rarefied air of elevated regions is quite unsuited to cases in which large tracts of lung tissue are disorganized or hopelessly disabled.

PROFESSOR JACCOUD, PARIS.

The following review of the drugs most lauded in phthisis is given by this distinguished authority:

Arsenic. In chronic phthisis, so soon as the phenomena attributed to anæmia have been remedied by iron, or in the absence of amelioration after a delay of a couple of months, the author abandons ferruginous preparations, and has recourse to arsenical medication. He employs exclusively granules of arsenious acid, of gr. $^1/_{60}$ each, and administers them at the commencement of each of the two principal meals. He commences with two a day, and every week increases two a day, until eight or ten a day are given. When this maximum dose is attained, he maintains it indefinitely, unless phenomena of intolerance make their appearance, such as cramps, inflammation of the eyes, cutaneous eruptions, vomitings, diarrhœa. Then, however, he does not stop the medicine, but diminishes temporarily, the dose, and returns, as soon as possible, to the maximum of toleration.

Arsenic acts powerfully upon the nutritive processes in chronic pulmonary phthisis. It quiets the nervous excitement, and possesses an anti-febrile action sufficiently marked to effectually combat the evening intermittent fever.

So long as the disease remains chronic, and does not develop acute attacks of pseudo-continuous fever, the arsenical medication ought to be maintained at the maximum of toleration, conjointly with the special regimen, cod-liver oil, cinchona and alcoholized raw meat.

Cod-liver Oil.—When the cod-liver oil is badly supported alone, in chronic pulmonary phthisis, the author adds to it brandy, rum, kirsch or whisky, in the proportion of two parts of the oil to one of the spirit, and recommends the patient to close the nostrils at the moment of swallowing it. He commences by small doses of the oil and spirit mixture; then two tablespoonfuls a day, and advances to five or six fluid ounces a day.

Iron.—The author reserves the employment of ferruginous preparations for those cases where the patients present the certain signs of globular anæmia. He gives, in preference, the syrup of the iodide of iron to young children, and the pills of the iodide of iron in other cases. From four to eight of these pills are to be taken a day, at the commencement of the meals. He advises not to administer the iron where there has been recent hæmoptysis.

Raw Meat.—In the treatment of patients with whom the physician is obliged to dissimulate, he may order the pulp of raw fillet of beef, well deprived of all fibrous matter, in some unleavened bread, under the pretext of administering medicinal boluses. When he can act openly, the author prefers to mix the pulp of the raw meat, properly prepared, with brandy, rum or whisky, in such a manner as to obtain a dough-like mass, which the patient takes with sugar or salt, according to taste, in tablespoonful doses, during the day. This mixture is very palatable, and does not produce that rapid intolerance which is often observed with other meat preparations.

Counter-Irritation.—The author, in acute phthisis, attacks the pulmonary disorder by means of large flying blisters, renewed without interruption. Instead of the ordinary dressing, he covers the vesicated surface, and envelops it in every direction, a finger's breadth, by diachylon plaster. On removing the protecting plaster at the end of four days, the cicatrization is found complete.

In commencing chronic phthisis, the author applies, under the

clavicle of one or both sides, cauteries of Vienna paste, of the size of a sixpence at the maximum, and repeats these punctiform cauterizations as long as any favorable influence is noticed.

COD-LIVER OIL TREATMENT.

In addition to what has been said above, we quote from various specialists their directions for the exhibition of this important remedy.

DR. C. J. B. WILLIAMS, LONDON,

Gives the following minute rules for administering the oil: 1. The *best time* for administering it is immediately after, or to those who prefer it, at or before, a solid meal. 2. In cases of *peculiar weakness of stomach*, with tendency to retching or vomiting, strychnia (gr. $^1/_{32}-^1/_{24}$) proves a valuable adjunct. So does salicine. Neither of these, though a powerful tonic, has any of the heating properties of quinine or iron. If their bitter taste is objected to, they may be given in the form of pill, after or before the oil. 3. It may be advantageously *combined with a mineral acid*. Nitric acid is best in inflammatory cases, and in those attended with much lithic deposit in the urine, but its tendency to injure the teeth is an objection to its long-continued use. Sulphuric acid is more eligible where there is liability to hæmoptysis, profuse sweats, or diarrhœa. But in most cases, for long continuance, diluted phosphoric acid is preferable to either. 4. The *bulk of the whole dose* of the oil and vehicle should be so small that it may be swallowed at a single draught; therefore, the vehicle should not exceed a tablespoonful, with at first a teaspoonful of the oil, to be gradually increased to a tablespoonful. 5. The *dose* of the oil should rarely exceed a tablespoonful, twice or thrice daily. Larger quantities either derange the stomach or liver, or some of it passes unabsorbed by the bowels. 6. The *diet* requires attention. With some persons the oil agrees so well, and so much improves their digestive powers, that they require few or no restrictions in diet, but this is not the case with the majority. The richness of the oil proves more or less a trial, sooner or later, to some persons; therefore it becomes proper to omit or reduce all other rich and greasy articles of food. All pastry, fat meat, rich stuffing, etc., should be avoided, and a great moderation observed in the use of butter, cream, and very sweet things. Even new milk in any quantity is not generally well borne during a course of oil, and many find malt liquor too heavy, increasing the tendency to bilious attacks. A plain

nutritious diet of bread, fresh meat, poultry, game, with a fair proportion of vegetable, and a little fruit, and only a moderate quantity of liquid at the earlier meals, commonly agrees best. 7. Should a bilious *attack* come on, indicated by nausea, headache, furred tongue, offensive eructations, high-colored urine, etc., it is necessary to suspend the oil, lighten the diet, and give an aperient.

In regard to taking the oil,

DR. J. M. DA COSTA, PHILADELPHIA,

Uses the following combination:

374. ℞. Olei morrhuæ, f.℥j.
Aquæ menthæ piperitæ, f.℥ss.
Tinctûræ aurantii, f.℥ss.
Misturæ acaciæ, f.℥iijss.
Olei gaultheriæ, ♏x. M.

A dessertspoonful three times a day. This formula disguises somewhat the taste of the cod-liver oil.

Or:

375. ℞. Olei morrhuæ, f.℥ss.

For one dose; to be taken three times a day in *carbonic acid water*.

Place in a tumbler a small amount of any preferred syrup, (orgeat or sarsaparilla is the best adapted to disguise the taste of the oil,) and fill up with carbonic acid water, from a bottle furnished with a syphon for table use; then, while it is still foaming, put in a tablespoonful of the oil. It is astonishing how perfectly the taste is concealed in this manner. Other modes of taking the oil are, floating on ice water, in lemon juice, and in the froth of porter. Less than a tablespoonful is not worth taking. The best time for its administration is between meals, after the process of digestion is pretty well finished. Persons are exceptionally met with who take it in preference just before meals, and thus avoid the disagreeable eructations. Nobody likes to take it the instant after meals.

DR. THOMAS H. TANNER

Suggests that in cases of phthisis where the stomach will not tolerate any form of cod-liver oil, resort may be had to *cod-liver oil embrocations:*

376. ℞. Olei morrhuæ, f.℥iijss.
Spiritûs ammoniæ aromatici, f.℥j.
Tincturæ opii, f.℥ss.
Olei lavandulæ, ♏xxx. M.

One-half to be rubbed over the chest and abdomen, night and morning.

Or:

377. R. Olei morrhuæ, f.℥j.
Olei cajuputi, f.℥j. M.

To be rubbed over the chest at bedtime, and applied by means of lint well saturated with it. The cajuput oil well disguises the smell of the embrocation.

It seems to be well settled that the assimilation of the oil is materially hastened by combining it with *ether*. The following is the prescription of

PROF. BALTHAZAR W. FOSTER, M. D., LONDON.

378. R. Ætheris, f.℥ijss.
Olei morrhuæ, f.℥iv. M.

Dessertspoonful thrice daily, before meals.

He gives many cases where this combination acted much more efficiently than the oil alone. (*Lectures on Clinical Medicine*, London, 1874.)

TREATMENT BY HYPOPHOSPHITES.

This special treatment is closely connected with the name of

J. F. CHURCHILL, M. D., PARIS.

His own formulæ, as published, are:

SOLUTION OF HYPOPHOSPHITE OF SODA.

379. R. Sodii hypophosphitis, 1 to 5 parts.
Aquæ destillatæ, 150 parts.

Dissolve and filter. Dose, a teaspoonful three or four times a day, in sweetened water.

SYRUP OF HYPOPHOSPHITE OF SODA.

380. R. Sodii hypophosphitis, 5 parts.
Sodii carbon. crystal., 1 part.
Syrupi simplicis, 500 parts.

Dissolve; keep in a dark place. Dose, one to four tablespoonfuls four times a day.

SYRUP OF HYPOPHOSPHITE OF LIME.

381. R. Calcii hypophosphitis, 1 part.
Aquæ destillat., 30 parts.
Sacchari albi, 64 parts.
Aquæ calcis, 6 parts.

Dissolve with gentle heat; filter; keep in a dark place. Dose, teaspoonful three to twelve times a day.

Dr. CHURCHILL's usual method of treatment is to give a tablespoonful of the syrup of hypophosphite of soda or lime (of the strength of six grains of the salt to the fluid ounce), once or twice a day, in the absence of any inflammatory symptoms—sometimes a teaspoonful of syrup of hypophosphite of lime in the morning, and the same dose of syrup of hypophosphite of soda at night. For females, particularly persons of nervous temperament or delicate constitution, leading a sedentary life, and unused to physical exertion, the dose should be decreased one-half. For children from seven to fifteen, the dose is the same as for females. From two to seven years of age, one or two teaspoonfuls daily, of the syrups, are sufficient. For infants of a more tender age, the dose should seldom exceed a quarter or half a teaspoonful in twenty-four hours.

The syrups may be taken alone or in a wineglass of water, and should, in general, be exhibited at meal time, either before or after. They have no medicinal taste whatever.

Contra-indications. 1. The use of the hypophosphites ought not to be commenced during an acute inflammatory state. 2. Their employment should be temporarily suspended, if, during the course of the treatment, the patient be attacked by any inflammatory complication but resumed as soon as the acute complication shall have disappeared. 3. They should not be given during an active hæmoptytis of a passive form. 4. Their effects should be carefully watched, in the case of patients affected with disease of the heart. 5. The dose should not be too high nor the administration too prolonged. Great mischief may result from incautiously pressing the remedy. Among the signs which indicate that the hypophosphites have been given in excessive doses, are lassitude, wandering pains, headache, buzzing in the ears, vertigo, sudden loss of appetite and strength, and, above all, bleeding at the nose, however slight the loss of blood may be.

The following is the usual prescription of

JOHN C. THOROWGOOD, M. D., LONDON:

382. ℞. Sodii hypophosphitis, gr. v.
Glycerinæ,
Aquæ, āā f.℥ss.
For one dose, thrice daily.

He believes that it is in cases of catarrhal pneumonia, limited to one lung, that we may expect satisfactory results from the hypophosphites. (*British Medical Journal*, May, 1877.)

Dr. J. G. S. COGHILL (*Lancet*, September 6th, 1879,) recommends the following formula as suiting most patients well:

383. ℞. Sodii hypophos.,
Calcii hypophos., āā gr. viij.
Infusi cascarillæ, ℥j.
To be taken twice a day, after meals.

Dr. C. denies that these salts exert any specific effect, but thinks they are valuable tonics. They are contra-indicated in advancing stages, with fever, but when the disease is arrested, they are often of decided advantage.

CALCIFICATION OF THE LUNG.

The process of calcification which the tubercles undergo in cases of spontaneous cure, have led various investigators to the endeavor to bring about this change in progressive cases.

Dr. JULIUS BOYER, of Paris, reported some years ago, (*Phthisie Pulmonaire*, Paris, 1874; *Dobell's Reports*, 1875,) several cases of alleged cure in this way by the administration of a salino-calcary powder composed of phosphate and carbonate of lime, and of bicarbonate of soda.

The same plan has been advocated by Dr. CARL BOTH, of New York. He advises as adjuvants the regular practice of deep inspiration, thus forcing air into the bronchioles and vesicles by suction, and a constitutional treatment. The latter consists at the commencement of attention to the liver and intestinal tract. Should the former be engorged and the bowels irregular, the use of citric and pomic acids, in the form of lemons and apples, with regulated diet, will usually efficiently correct them. In the diet, he forbids any and all stimulants, The patients are required to take moderate exercise out of doors in all seasons, and without regard to the weather.

The peculiarity of the medical treatment is the use of extracts of plants containing lime and silica. If we consult the history of therapeutics, we shall find that *extract. graminis* is one of the oldest popular remedies for consumption. Another lime-containing plant is *Achillea millefolium*, also an old popular remedy. Thistles contain silica; plants growing in swamps, sulphates. Dr. BOTH uses the extracts of them in their crude state, as alcohol excludes the albumen, which contains the salts wanted. The following is an average formula as he uses these extracts:

384. ℞. Extr. graminis,
" trifolii fibr.,
" millefol.,
" card. benedicti, āā ℥j
Sodii tartrat., ℥j
Aquæ, ℥iiiss
Tinct. amaræ, ℥iss. M.

Dose: one to three tablespoonfuls daily.

There are many other plants which might be used for the same purpose, but he prefers these on account of their bitter extractive matter, which seems to act somewhat as a substitute for bile on the intestines. The length of time to effect a cure is from six to twelve months. As for the cases adapted to this treatment, he says:

1. No case of chronic affection of the lung is curable unless we are able to re-establish vesicular breathing, or, at least, to force air into and between the affected portions, so as to again induce, at least, *partial* circulation of blood and air.

2. No case is curable in which a nidus of pus exists *outside of the lung-tissue proper*, and within the reach of the general circulation, but beyond the reach of the knife or trocar; whether this be a lymphatic gland, or an abscess in the brain, pleura, liver, etc.

Dr. A. H. Mellersh, of Philadelphia, believes that calcareous degeneration of the tubercles can be aided by the use of *calcium chloride*. He gives thirty-drop doses of the solution in milk to an adult. He has found it to relieve the diarrhœa, stimulate the assimilative functions, and bring about marked improvement. (*Medical and Surgical Reporter*, February, 1878.)

CLIMATES AND TRAVEL.

The benefit of change of climate is most perceptible in cases in overworked persons of sedentary life, who leave their indoor habits at home when they travel, and in hemorrhagic cases.

In ordinary chronic phthisis a dry climate is best; in phthisis of catarrhal origin, a moist air is preferable. (Dr. C. T. Williams.)

The most important of all considerations is that the air shall be pure, *i. e.*, containing plenty of oxygen and free from organic impurities.

As a general rule, according to Dr. Madden, (*Health Resorts of Europe and Africa*, 1876,) in the first and early second stage of ordinary cases of phthisis a dry and stimulating climate is preferable. When the disease is of a chronic, bronchial type with irritative symp-

toms, a moist, equable, unstimulating climate will be most beneficial. All patients in the third stage should stay at home.

It is the advice of Dr. A. L. LOOMIS, (*Diseases of the Respiratory Organs*, 1875,) to be governed in the choice of a climate by inquiring of the patient whether his health has usually been better in warm or cold weather, in a dry or moist atmosphere; and to direct his travels accordingly, without much reference to the particular form of his disease.

Two general rules should be observed: (1) In whatever locality a phthisical patient finds himself improving, he should remain there. (2) Whenever he finds his health deteriorating in a locality, he should leave it.

Special praise has of late years been given to *altitude* as a curative agent in phthisis. Dr. LOMBARD, of Geneva, even claims that the disease cannot arise in localities over 5,000 feet above the sea level. Certain it is that not only are residents of lofty plateaux singularly exempt, but patients seeking these elevated regions are often singularly improved. This has led to the establishment of mountain sanitoria in Europe and America, the benefit of a residence in which has been amply demonstrated.

In regard to *sea voyages*, Dr. RODERICK MACLAREN (*Practitioner*, 1877,) states that when the infiltration of the lung is localized and chronic, when it is confined to the one side, and there is absence of evidence of disease elsewhere, it may be looked on as a favorable case, and the further the departure from this condition the less are the patient's chances of benefit. It is stated that cases in which hæmoptysis is the first, or at least a very early symptom, do especially well. Cases are unsuitable for a voyage in which there are signs of extensive progressive excavation, and all in which there is great muscular weakness. When we have evidence of the disease being general, as shown by glandular, bowel, or laryngeal disease, our recommendation should certainly be withheld. The bowels in particular should be in good trim, for the sedentary life and peculiar diet of a ship are apt, in healthy people, to produce intestinal disturbance, (constipation and subsequent diarrhœa, or either of these alone.) In a case which persistently grows worse under favorable circumstances of habitation, etc., on shore, the prospect of benefit would be small. A phlegmatic habit of body should also be looked upon, to a considerable extent, as a counter-indication for this remedy.

The following list embraces the most important health resorts in phthisis:

Mountain Sanatoria.

Europe: Davos, Moritz, Lamaden, in Switzerland; Hohwald, Wangenburg, Soultzmatt, in the Vosges; Chaumont, Chateau, Ranz, in the Jura; Gerbersdorf, in Silesia.

America: The Andes of Bolivia; the higher levels in Colorado; the Appalachian plateau about Asheville, N. C.

Lower Dry Climates.

Europe, Asia and Africa: Montpellier, Cannes, (warm, moderately exciting); Nice, (variable, exciting); Mentone and the Riviera, (cold and changeable); Upper Egypt, (the best tonic, dry, warm climate); the Kirghis Steppes.

America: The Costa Rican and Mexican plateau; Minnesota, (dry and exciting); Colorado about Denver; the Adirondack region, (cool, moderately dry, very good at all seasons); Aiken, S. C., and northern Georgia; Santa Barbara, Cal., (dry, warm.)

Lower Damp Climates.

Europe, etc.: Madeira, (very moist, equable); Arcahon; Southern Italy, (now condemned); Algiers, (warm, moist, equable.)

America: The Bermudas, (doubtful); the Bahamas, (moist and equable); Florida, (moist, but changeable); Isle of Pines, Santa Cruz, etc., (very equable and moist.)

TREATMENT OF COMPLICATIONS.

THE ANÆMIA AND DEBILITY.

According to Dr. Symes Thompson (*Practitioner*, September, 1868,) the *tincture of the chloride of iron* is far superior to other chalybeates. The improvement of appetite, diminution of flatulence, etc., which occur under its administration, are often remarkable, cod-liver oil and other fats, refused previously, being digested without discomfort. It both checks diarrhœa and relieves constipation, by giving tone to the feeble muscular fibres of the bowels; it lessens night sweats, though these often call for oxide of zinc in addition, and is a valuable remedy in hæmoptysis. Many believe the *iodide of iron* one of the best chalybeate tonics which can be employed in the anæmia of phthisis, if

it do not prove too stimulating. The syrup (℥xx–f. ʒ j, thrice daily,) is the best form.

The *iodide of calcium* has been extolled as an excellent tonic by Dr. A. Malet, of Rio de Janeiro. (*Butl. Gén. de Thér.*, Aug., 1868.) He administers gr. viij in solution, in divided doses, daily, and says it awakens the appetite, regulates the digestion, renders the respiration freer and deeper, diminishes the cough and modifies the expectoration, increases the strength and lessens the perspiration. If constipation ensue in consequence of its long use, it will often disappear of itself; otherwise the dose may be diminished, or the remedy temporarily stopped.

Prof. Furter, of Montpellier, employs, with good results, raw mutton or beef, given in conjunction with strong or diluted alcohol, in small doses.

385. Take some finely-minced raw mutton or beef, and roll it up in sugar or in a saccharine electuary. Give in teaspoonful doses to the amount of 3–10 ounces per day.

386. ℞. Alcoholis, f. ʒ j.
Syrupi, f. ʒ iij. M.

A teaspoonful dose every hour. The dose and frequency of administration are to be modified by the patient's individuality.

Dr. J. Waring Curran praises the *oxide of zinc.*

387. ℞. Zinci oxidi, gr. ij.
Extracti conii, gr. j. M.

For one pill; to be taken three times a day. The quantity of the oxide of zinc is gradually to be increased.

In the latter stages of phthisis, where profuse sweating and colliquative diarrhœa harass the patient and rapidly lower the vital capacity, this combination is very effective. It is of great value, also, in the earlier stages of the disease. It seems to steady the nervous system, and act as a sedative to the wandering pains.

THE COUGH.

Anodynes are urgently demanded when the cough is troublesome. The following is recommended by Dr. Sunderlind:

388. ℞. Ammonii chloridi, gr. xxx.
Opii pulveris, gr. ix.
Digitalis pulveris,
Scillæ pulveris, āā gr. xv. M.

Divide into thirty pills. One every six hours, to quiet the cough and facilitate the expectoration in the early stage of phthsisi.

389. ℞. Morphiæ sulphatis, gr. j.
Syrupi ferri iodidi, f.℥ ss.
Glycerinæ, f.℥ ijss. M.

A teaspoonful two or three times a day, to quiet the cough and retard the emaciation in phthisis.

The following is in use in most chronic pulmonary affections, in the Charity Hospital, New York:

390. ℞. Potassii bromidi,
Potassii chloratis,
Ammoniæ muriatis, āā ʒiss.
Syrupi tolutani, f.℥iv. M.

A teaspoonful every few hours.

A writer in the *Canada Lancet*, March, 1879, says the following formula is almost a specific in phthisical cases with troublesome coughing:

391. ℞. Atropiæ sulph., gr. j.
Morphiæ sulph., gr. viij.
Acid. sulph. aromat., ʒij.
Aquam menth. pip., ad ℥j. M.

Dose, 5 drops thrice daily and at bedtime.

The Consumption Hospital, London, employs, as a house prescription:

392. ℞. Morphiæ muriatis, gr. ss.
Acidi hydrocyanici diluti, ♏xv.
Acidi muriatici diluti, ♏ijss.
Oxymelis scillæ, f.℥ ss.
Aquam, q. s. ad f.ʒj. M.

Dose, 1 to 2 drachms.

Combinations like the following are employed by Dr. J. M. Da Costa:

393. ℞. Morphiæ acetatis, gr. ij.
Potassii cyanidi, gr. j.
Acidi acetici, f.ʒj.
Extracti pruni virginianæ fluidi,
Misturæ acaciæ, āā f.℥ ij. M.

A teaspoonful four or six times a day, as a sedative mixture, for the cough of phthisis.

394. ℞. Liquoris morphiæ sulphatis, f.℥j.
Extracti pruni virginianæ fluidi, f.ʒij.
Acidi sulphurici diluti, f.ʒij. M.

A teaspoonful three or four times a day, when night sweats and cough are troublesome.

395. ℞. Extracti opii, gr. ss.
Aquæ, f.℥j. M.

For one inhalation twice a day, by means of any form of steam atomizer throwing a fine spray. In the irritative cough of phthisis, causing gastric irritability.

Locally, various methods to allay the irritation, may be employed. The inhalation of warm water, impregnated with emollient herbs, such as *althæa officinalis*, or with narcotic extracts, palliates cough, dryness of throat, and laryngeal irritation. Inhalations of *tar*, *creasote*, and *carbolic acid*, simple, or in association with sedative extracts, have occasionally produced remarkable improvement in both the local and constitutional state. Also, hyoscyamus, gr. v of the extract to Oj of boiling water.

Dr. RINGER strongly recommends the application of the *glycerine of tannin*, with a small quantity of morphia added, to the throat. When the cough is troublesome, a good night's rest may often be obtained by applying it at bedtime.

For the distressing night cough, Dr. YEO finds *croton chloral* an efficient agent. It may be given in doses as high as 60 grains.

Dry cupping on the chest, under the clavicles, often gives great relief in distressing dyspnœa and cough.

Dr. SAUNDBY, of London, (*Brit. Med. Jour.*, April 12th, 1879,) has found nothing so good as *codeia*. It allays the cough without disturbing the digestive system. He prescribes gr. j., dissolved in syrup of tolu.

THE DIARRHŒA.

The complication of diarrhœa is not very frequent, but is exceedingly exhaustive. When caused by the presence of irritating ingesta, Dr. BARLOW uses:

396. ℞.	Olei ricini,			
	Tincturæ rhei,	āā	f.ʒ ij.	
	Tincturæ opii,		♏iv.	
	Aquæ cinnamomi,		f.ʒ iv.	M.

To be taken at a draught.

This may be followed by:

397. ℞.	Acidi nitrici diluti,	♏xij.	
	Tincturæ opii,	♏v–x.	
	Syrupi,	f.ʒ j.	
	Aquæ cinnamomi,	f.ʒ x.	M.

Make a draught, to be taken every fourth or sixth hour.

The logwood is a pleasant astringent. Dr. F. W. PARRY combines it thus:

398. ℞.	Extracti hæmatoxyli,	ʒ ij.	
	Misturæ cretæ,	ʒ xij.	
	Vini ipecacuanhæ,	f.ʒ ij.	
	Vini opii,	f.ʒ j.	M.

A tablespoonful twice, thrice, or oftener daily.

Dr. GRAVES has recommended as one of the best remedies *nitrate of silver*, gr. j, in pill, three or four times daily. He also speaks well of:

399. ℞. Acidi sulphurici diluti, ♏xv–xx.
Tinct. opii, ♏x–xv.
Tinct. cinchon. comp., ad f.℥j. M.
For one dose.

THE DYSPNŒA.

The external use of dry cups or croton oil liniment to the surface of the chest and under the clavicles will sometimes relieve the distressing dyspnœa. When it is greatly aggravated by coughing spells, the inhalation of chloroform will often check these. Inhalations of hyoscyamus vapor, gr. v of the extract to Oj of warm water, is also recommended.

THE HÆMOPTYSIS.

The hæmoptysis of phthisis has already been considered under "Hæmoptysis," which see.

THE LARYNGITIS.

Tuberculous laryngitis has been mentioned under the general heading "Laryngitis," which see.

THE NIGHT SWEATS.

Nothing so effectually controls these as *belladonna* or *atropia*, as suggested by RINGER, FOTHERGILL and BARTHOLOW. The average dose of atropia is gr. $^1/_{60}$, which may be given in pill, or in solution; or gr. $^1/_{100}$ hypodermically. It can very advantageously be combined with morphia. The aqueous solutions soon spoil, so the pill form is better. Dr. A. H. HASSALL, of the Ventnor, England, Hospital for Consumption, gives:

400. ℞. Atropiæ sulphatis, gr. $\frac{1}{80}$–$\frac{1}{60}$.
Extracti gentianæ, gr. ij. M.
For one pill.

Dr. J. T. NAIRNE (*British Medical Journal*, February, 1878,) uses the ordinary tincture of belladonna externally in these cases:

401. ℞. Tinct. belladonnæ,
Spiritûs frumenti, āā f.℥ij. M.

This is usually sufficient to cover the body and produce the desired effect.

Dr. THOMAS H. TANNER uses one of the following for night sweats:

402. ℞. Acidi gallici, ℈ ij.
Extracti cannabis indicæ, gr. v.
Confectionis rosæ, gr. x. M.
For ten pills. One to be taken every night at bedtime.

Or:

403. ℞. Zinci oxidi, gr. xij.
Extracti conii
vel,
Extracti hyoscyami, gr. xviij. M.
For six pills. One to be taken every night at bedtime.

An excellent combination is:

404. ℞. Extracti belladonnæ,
Zinci sulphatis,
Extracti gentianæ, āā gr. j.
For one pill at night.

Or:

405. ℞. Zinci sulphatis, gr. j.
Extracti hyoscyami, gr. iij. M.
For one pill at night.

Dr. HAYDEN believes that Dover's powder, if judiciously given, is more efficient than belladonna. If the sweating occurs towards morning, as is usually the case, gr. v of Dover's powder, once or twice during the night, will check it. Tepid sponging with vinegar and water is a useful auxiliary. (*Dublin Journal of Med. Science*, April, 1877.)

Quinine is another useful remedy. It proves of most avail when there is a considerable rise of temperature at some period of the day. It is frequently given in 2-grain doses, but 5 grains are much more likely to succeed. A large dose (8 or 10 grains) administered at once or in portions repeated hourly, is a good form.

Nitrite of amyl is a good remedy for night-sweats, but for promptness of action is decidedly inferior to atropia and other remedies.

Agaric, gr. v–vi, at night, is occasionally effectual.

Externally, sponging the surface with hot water (130° Fah.) is recommended by Dr. DRUITT; or with a strong solution of common salt. Aromatic vinegar and water is also useful, but has its disadvantages. Dr. ELLIOTSON speaks well of a mixture of sulphuric acid and

water—a drachm to the pint—as a wash. The application of belladonna is useful for local sweatings, but when the sweating is general, the internal administration of atropia is to be preferred.

Duboisia was reported upon favorably by the late Prof. GUBLER. In the Philadelphia Hospital, *jaborandi* has been found very effective:

406. R. Extracti jaborandi fluid., f.℥ss.
Tinct. cardamomi,
Syrup. pruni virginian., āā f.℥ij. M.
One teaspoonful in half a wineglassful of water the first night, then half a teaspoonful every following night until cessation of sweats.

It will rarely be necessary to give the medicine oftener than four consecutive nights. If, after some weeks, the sweats should return, which is frequently the case, one or two of the smaller doses will be sufficient to stop them again.

Picrotoxin, gr. $^1/_{120}$–$^1/_{60}$, in solution, has been used with success in many cases. (*Practitioner*, Oct., 1879.)

RÉSUMÉ OF REMEDIES.

Acidum Carbolicum. The inhalation of pulverized solutions of carbolic acid is of frequent benefit in the advanced stages of phthisis, by diminishing the secretion and lessening the cough and exhaustion, and by correcting fœtor of the expectorations. A solution of drops xv–xx, in two pints of water, with the addition of one or two ounces of tincture of conium, or of alcohol, may be used. Lately, Dr. J. SCHNITZLER, of Vienna, has claimed "remarkable success" in the treatment of phthisis by hypodermic injections of carbolic acid, using a one or two per cent. solution twice daily. (*Dobell's Reports*, 1877.)

Acidum Tannicum. Prof. STILLÉ says that this medicine appears sometimes to remove the crepitating rhonchi so generally observed around crude tubercles at the apex of the lung during the first stage of phthisis, while it diminishes the dyspnœa, cough and expectoration. At a late period, it sometimes so manifestly palliates all the symptoms as to inspire a belief that a cure has been accomplished, converting moist rhonchi, or gurgling, into signs of solidification merely, or of a dry cavity. The more nearly the disease resembles the acute form of phthisis, the less appropriate will the medicine become.

Æther has been recommended to promote the assimilation of cod-liver oil by Dr. FOSTER. The objections to his preparation are its disagreeable taste, and the eructations it occasions.

**Alcohol.* Dr. ANSTIE says that there is a variety of pulmonary phthisis, especially common in persons with delicate skin and slight frame, with a marked tendency to colliquative sweating, and a notable inability to assimilate either ordinary food or fatty matter of any kind, in which the tolerance for large

and long-continued doses of alcohol is very remarkable, and the benefit produced by such treatment very great. Prof. FLINT also recommends strongly the alcoholic treatment in cases in which stimulants are well borne.

Ammonii Iodidum is recommended in incipient phthisis by Dr. RICHARDSON. It is also advised by Dr. TANNER, in cases in which cod-liver oil is not tolerated.

**Arsenicum* is often a remedy of great value, but it is frequently badly borne by the stomach. Prof. DA COSTA recommends it as often beneficial in slow consumption. It is highly advocated by a number of French physicians.

Calcii Chloridum is valuable in strumous phthisis. Dr. A. H. MELLERSH says many cases improve upon it. (*Medical and Surgical Reporter*, Feb., 1878.)

Caoutchouc, dissolved in turpentine and made into a confection, has been given in many cases by Dr. VARICK, of Jersey City, and has been found very useful where cod-liver oil cannot be tolerated. (*Med. Record*, Nov., 1873.)

Cinchona. The acidulated cold infusion of bark is an excellent remedy for the profuse perspiration, night-sweat and hectic fever.

Creasotum has lately been recommended by Dr. HUGUES, of Paris, in a thesis. He tried it with good effect in twenty-seven cases, in the following formula:

407. ℞. Creasote, ℥j.
Alcohol,
Water, āā f.℥iv. M.

Of this, a dessertspoonful twice daily. The creasote must be pure and of wood-tar, not the impure stuff usually found in the shops.

Digitalis enjoyed formerly a higher reputation than it now possesses, although it is still highly spoken of. Dr. NIEMEYER considers it, in combination with quinine, as an admirable agent for arresting the abnormal calorification. It is often very useful in hæmoptysis, especially in the advanced stages of the disease.

Ferrum. Almost any of the preparations of iron are useful in the early stages. The choice of which should depend on the patient's idiosyncrasies.

Glycerine, is said, by Dr. WALSHE, to often agree well when cod-liver oil is unbearable, and then, especially in children, to decidedly increase the weight. It may be given in combination with the syrup of the iodide of iron.

Hydrogenii Peroxidum is said to greatly improve digestion in the first stage of phthisis, and aid the action of iron; in the last stage, it unquestionably affords relief to the breathlessness and oppression, acting like an opiate without producing narcotism.

Iodinium is a valuable counter-irritant. Dr. FULLER recommends:

408. ℞. Hydrargyri chloridi mitis, gr. viij.
Iodinii, ℥ss.
Alcoholis, f.℥iss.
Unguenti, ℥j. M.

Rub in a portion over the affected lung, morning and evening, until a pustular eruption comes out.

Juglans. Infusion of the leaves of the *Juglanda regia*, or an extract, is much used in

Germany when cod-liver oil cannot be tolerated, or in the hot season when the oil is apt to disagree.

Koumiss, the fermented milk of mares or cows, is a popular remedy, and is now prepared by druggists in our leading cities. A "cure" requires 12 to 15 lbs. of koumiss daily, taken every half hour, conjoined with plenty of open air exercise. The Russian method of preparing koumiss is as follows: Take two teacupfuls of wheat flour dough, two spoonfuls of millet flour, one spoonful of honey, one of beer yeast; mix with milk to a thin paste, and put in a warm place to ferment. When fermented, put in a linen bag and hang it in a jar with 16 lbs. of fresh milk; cover, and let stand until the milk is acidulous; skim, decant and agitate for an hour, then bottle and place in a cold place.

***Morrhuæ Oleum* is deserving of the highest confidence. The earlier it is employed in the disease the better. In regard to its mode of action and method of administration, see opinions of Dr. AITKEN, of Prof. DA COSTA, of Dr. FOSTER, of Prof. JACCOUD, of Dr. NIEMEYER, of Dr. WALSHE, and of Dr. C. J. B. WILLIAMS (above.)

Muriaticum Acidum, alone or in combination with other mineral or vegetable tonics, is an important auxiliary to treatment.

Nitrogen Gas. Inhalations of this gas have been recommended by Prof. STEINBRÜCK, of Vienna. In the first and second stages, especially in young persons, they give great relief and sometimes cure; but in the third stage they are injurious. Their immediate effect is to allay nervous irritability and lower the circulation. (*Dobell's Reports*, 1876.)

Oleum Tiglii, as a counter-irritant to the chest in the earlier stages, is undoubtedly beneficial.

Opium, by the mouth or enema, is often a valuable palliative in advanced stages of phthisis, to relieve the cough, lessen the expectoration, check diarrhœa, and afford comfort to the patient.

**Pancreatic Emulsion*, introduced by Dr. HORACE DOBELL, is an excellent remedy, either with or without cod-liver oil, and is well borne by persons unable to retain the oil. He says it is best to give the *Pancreatic Emulsion* from one to two hours after a full meal, such as breakfast or dinner, particularly avoiding a longer interval, and also avoiding warm drinks for two or three hours afterwards. When cod-liver oil agrees, give a tablespoonful of oil directly after breakfast, to supply olein to the blood through the portal system, and a tablespoonful of emulsion, in a cup of milk or water, two hours after dinner, to supply the blood with pancreatized solid fats through the lacteal system. If cod-liver oil cannot be taken, give the emulsion two hours after breakfast, and two hours after dinner.

Plumbi Acetas is very useful in diminishing expectoration, checking hemorrhage and diarrhœa, and, to a less extent, the profuse perspirations of phthisis; but its administration is objectionable, because of the anorexia which often speedily results.

Potassii Chloras is recommended in the painful deglutition of advanced phthisis.

Potassii Iodidum is of value, given with iron and cod-liver oil, when there is a syphilitic taint.

Prunus Virginiana improves the appetite and palliates the cough.

Quiniæ Sulphas is a valuable tonic in phthisis, given in conjunction with iron and cod-liver oil.

Saccharum. Dr. SYMONDS recommends (*British Medical Journal*, June 13th, 1868,) sugar as an article of diet in phthisis, taken to the extent of a quarter of a pound or more daily. He gives it with eggs as a succedaneum for cod-liver oil, when the latter disagrees.

Sanguis. The fresh blood of animals, drunk while warm, is a nutritive drink, and has proved of value in many phthisical cases.

Sevum Præparatum, Suet, is a popular and useful remedy, boiled in milk, and taken in the morning.

Silphium Cyrenaicum. In Italy, Dr. ANTONIO LOMBARDO assigns the following effects to the treatment of phthisis with *Silphium Cyrenaicum:* The expectoration is much facilitated; the dyspnœa is diminished, and the circulation becomes more regular; while no digestive disturbance results from its administration. (*Dobell's Reports*, 1877.)

Sodii Sulpho-Carbolas has been recommended by Dr. SANSOM. (*Practitioner*, July, 1869.)

Sulphur is useful in the costiveness of phthisis, and may also be employed against profuse perspirations.

Vitis Vinifera. The grape cure is of benefit in chronic catarrhal cases, but is of doubtful propriety in tuberculous cases.

Zinci Oxidum is strongly recommended by Dr. WARING CURRAN, as a tonic.

INHALATIONS.

Arsenicum. TROUSSEAU and others have recommended arsenious fumigation by means of cigarettes—a mode of treatment which should be conducted with caution.

Carbolicum Acidum. Dr. MARCET recommends (*Practitioner*, November, 1868,) the atomization of the following solution:

409. R. Acidi carbolici, gr. ss–iss.
Aquæ, f.℥j. M.

This inhaled in the form of spray acts beneficially in the first stages of the disease, by improving the circulation in the lungs, but in the advanced stages it should be withheld.

Chloroformum. A few whiffs (♏vj–x) are often useful in the cough and dyspnœa of phthisis, but the effect is only temporary.

**Iodinium.* In cases of troublesome cough and abundant expectoration, benefit sometimes results from employing, night and morning, vapor of iodine.

410. R. Tincturæ iodinii, f.℥ss.
Aquæ, f.℥j. M.

Apply gentle heat, and let the vapor that arises be inhaled. Or, the dilute compound tincture of iodine may be atomized.

Iodoformum. The inhalation of the dilute vapor obtained by mixing iodoform with

starch, spreading it on paper and allowing it to volatilize, has been recommended.

**Opium*, by inhalation, is an excellent means of soothing irritative cough.

Oxygen inhalations can only be looked upon as palliative, and seem, in some cases, after affording immediate relief, to invite fresh and more intense exacerbations.

**Pix Liquida.* Tar vapor is now little used, having lost the reputation it once enjoyed in phthisis.

EXTERNAL REMEDIES.

Aceticum Acidum Dilutum. The application of diluted vinegar to the chest and upper part of the body, to allay the profuse perspirations of phthisis, is recommended by Dr. WALSHE, Sir C. SCUDAMORE, and others, as a measure greatly conducing to the comfort and well-being of the patient. The mixture of one part of vinegar, one of eau de cologne, and two of water, is employed by Sir C. SCUDAMORE.

**Ammonii Iodidum*, in ointment, is recommended by Dr. TANNER.

**Baths.* The *Turkish Bath* is sometimes of service in incipient phthisis. The *Compressed Air Bath* may often be employed with great advantage.

**Counter Irritation.* The counter-irritants most frequently resorted to in phthisis, are the following: *Aqua Ammoniæ; Tartar Emetic Ointment; Calomel and Iodine Ointment; Croton Oil Liniment.* **Tincture of Iodine* (painted over the chest every night) also does good, by the iodine which is inhaled, from the air around the patient being slightly impregnated by the evaporation of the tincture; *Burgundy Pitch Plaster;* **Thapsia Plaster;* the following plaster is recommended by Dr. BARLOW, in the first stage of phthisis:

411. ℞. Emplastri picis com., ℥ iss.
Antimonii et potassii tartratis, gr. x. M.
Make a plaster.

Electricity. As far back as 1863, Dr. BASTINGS, of Brussels, announced the cure of twenty-five cases of phthisis out of thirty-seven patients, by means of electricity. (*Traité de la Phthisie*, 1863.) The *Archives Med. Belges*, 1879, contains the details of a case of well-marked phthisis, added to his successes. Dr. B. electrizes the muscles of the chest and arms by means of an electro-galvanic machine of Gaiffe, employing such a strength that the resulting contractions correspond to those natural to respiration. One or two sittings of five minutes daily, are sufficient.

Setons. In the early stages, a sub-clavicular seton of three or four silk threads, sometimes retards the progress of the disease.

PLEURISY.

JOHN SYER BRISTOWE, M. D., LONDON.

In mild cases of so-called dry pleurisy, the chest should be irritated by a mustard plaster, and then swathed in a broad flannel roller, so as to restrain motion, while small doses of opiates should be commenced.

When there is manifest fever and commencing effusion, it is often beneficial to apply half a dozen to a dozen leeches to the surface of the chest, followed up by poultices, or flannels wrung out in hot water. Opiates are here, also, of extreme value, and some febrifuge medicine may be employed.

If the effusion still increases, diuretics and purgatives, mercury, digitalis, and iodide of potassium, have been employed. All these Dr. B. rejects as useless. He would prefer tonics, especially iron and quinine; counter-irritants, especially repeated small blisters; and, finally, paracentesis thoracis, or aspiration. (See "Empyema.")

ALFRED L. LOOMIS, M. D., NEW YORK.

In mild as well as severe cases of pleurisy, all the treatment required for the successful management of the disease is to put the patient quietly to bed (very important), apply an anodyne poultice to the affected side, and administer hypodermic injections of morphia in quantities sufficient to relieve all pain. Ordinarily, the patient can sit up in four or five days, and in two weeks resume his business. But if the exudation is abundant, he should keep his room and avoid exertion. If the patient is anæmic, the syrup of the iodide of iron should be given, f. ʒ j, three or four times a day. Stimulants should never be given until the second or third week of the disease; and all so-called antiphlogistics and counter-irritants should be avoided.

Iron is the remedial agent which has the greatest power to promote absorption. When the case is sub-acute, the most nutritious food and free stimulation are in place. The nutritive processes should be raised to the highest point. In any case, when the fluid accumulation remains stationary for one week, or is increasing after the cavity is half filled with fluid, *aspiration* should be resorted to.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

412. ℞. Potasssii acetatis, gr. xv.
Spiritûs ætheris nitrosi, f.℥ss.
Vini ipecacuanhæ, gtt. iij.
Syrupi tolutani, f.℥ss. M.

For one dose, four times a day. Useful in sub-acute pleurisy.

413. ℞. Tincturæ veratri viridis, ♏xxiv.
Potassii acetatis, ℥ss.
Morphiæ acetatis, gr. ss.
Liquoris potassii citratis, f.℥ijss.
Syrupi tolutani, f.℥ss. M.

A dessertspoonful every three hours, in dry pleurisy.

Locally, apply, two or three times a day, turpentine stupes.

414. ℞. Potassii acetatis, ℥j.
Tincturæ digitalis, f℥ij.
Extracti cinchonæ fluidi, f.℥j.
Aquæ, f.℥ij. M.

A teaspoonful thrice daily, in pleuritic effusions.

415. ℞. Potassii iodidi, ℥ij.
Tincturæ scillæ, f.℥vj.
Tincturæ opii camphoratæ, f.℥iss. M.
Misturæ acaciæ, f.℥vj.

A teaspoonful four times a day, in chronic pleurisy with consolidation of the lung. Also, a good, nourishing diet; either whisky or gin, half an ounce three times a day; and counter-irritation by means of tincture of iodine.

TREATMENT BY COMPRESSION OF THE THORAX.

Professor CONCATO, of Bologna, has introduced a new treatment of unilateral pleurisy with effusion, which has been received with much approbation in Italy. It is by manual compression performed with both hands applied to the *healthy* side twice a day, during five to fifteen minutes each time. The patients experience rapid benefit from this treatment, the dyspnœa disappearing and rapid absorption taking place. According to Dr. SANTE ALBERTOZZI, of Florence, it takes the place of thoracentesis, and is, of course, safer. No medicines are required, and the treatment is assisted only by nourishing diet. To succeed well, fever should be absent and the effusion recent. (*Dobell's Reports*, 1876, 1877.) See further, Dr. GERHARDT'S method under "Emphysema."

On the other hand, Dr. J. C. GLEASON, of Boston, recommends strapping *the affected* side with adhesive strips, so as to limit motion and secure the greatest possible rest in all cases of acute pleurisy, pleuro-pneumonia, etc., in which severe pain, resulting from the

respiratory movements, comes in as a leading symptom. (*Boston Medical and Surgical Journal*, December, 1877.)

RÉSUMÉ OF REMEDIES.

Antimonii et Potassii Tartras, in doses gr. $\frac{1}{16}$–$\frac{1}{4}$, sometimes proves useful in the earliest stages of acute pleurisy in young, plethoric subjects. It is, according to LÆNNEC, and the older writers, in general, well supported in pleurisy, and contributes powerfully to subdue the inflammatory tendency; but, nevertheless, when the pain in the side and fever have ceased, it loses further power over the disease; at least, it does not appear to promote the removal of the fluid effused, so that its use must generally be abandoned as soon as the acute symptoms have passed away.

Iodinium. In effusion, after the febrile action, the *compound tincture of iodine*, in doses of *twenty minims freely diluted*, is a valuable medicine.

Jaborandi has proved very serviceable in several cases of pleuritic effusion, and a late number of *La France Medical*, Dr. MICHOU, reports two cases, the happy termination of which certainly appears to be due to the action of this drug. In both cases the patients were rather bad subjects, the symptoms severe, and other remedies unsuccessful. Five grammes (75 gr.) of jaborandi leaves were given in infusion, and in both cases this dose was soon followed by copious expectoration, salivation, and diaphoresis, together with marked absorption of the effusion, and speedy relief to all the symptoms.

**Morphia.* Nothing can be more satisfactory than the treatment of pleurisy *in its early stage* by the hypodermic injection of morphia. It relieves at once the pain, and arrests or diminishes the morbid process.

416. ℞. Morphiæ sulphatis, gr. xvj.
Aquæ destillatæ, f.℥j. M.
Dissolve and filter. Dose, for a hypodermic injection, five to ten minims.

Potassii Iodidum, variously combined according to indications, is considered by many of the highest value in restraining inflammatory action and promoting absorption. (F. 415.)

Quiniæ Sulphas, in the advanced stages, when the case assumes a typhoid character, especially when the patient is old or debilitated, is of great service.

Scilla is sometimes given, combined with digitalis and mercury.

Tannicum Acidum. Dr. DUBOUÉ (in the *Gazette Hebdomadaire*, December, 1872,) relates the remarkably good effects which he has obtained from the use of tannic acid. The *exclusive* use of tannic acid in eleven grave cases of purulent pleurisy, attended with spontaneous evacuation of pus, was entirely successful in a very short time in eight cases; the ninth case was under treatment for a long time, with only partial success; two cases ended in death. He usually administered the tannin in pills:

417. ℞. Acidi tannici, gr. ij.
Confectionis rosæ, q. s.

For one pill. Four to eight daily, one-half in the morning, the remainder in the evening.

Dr. DUBOUÉ was guided, of course, by the condition of the stomach, which bore the drug remarkably well as long as there was a source of suppuration; as also by the effects obtained, and not only the return of appetite, diminution of expectoration, sweats, etc.

PNEUMONIA

THE ABORTIVE TREATMENT OF PNEUMONIA.

The fact that acute pneumonia sometimes aborts spontaneously leads to the hope that this termination may be brought about by art. With this aim, various means have been used.

Bloodletting, free and early, in young and vigorous subjects, especially in healthy country localities, is an old and approved means. As, however, death in pneumonia often comes from exhaustion, instead of venesection, we may apply a number of cups to the chest and follow with hot fomentations and poultices.

Internally, *Ergot* has been used with marked reported success, f. ʒ ss of the fluid extract every two hours, by Dr. J. B. SCEARCE (*Med. and Surg. Reporter*, March, 1878,) and Dr. J. B. YEAMAN (St. Louis *Clin. Rec.*, Feb., 1878.)

Dr. SIDNEY RINGER and others speak very strongly in favor of *aconite*, gtt. i–jj of the tincture of the root every half hour, for two hours, and then less frequently. It must be begun early, or its effects are inconsiderable. It has no power over the consolidated portions.

That *quinine* aborts the disease in a certain number of cases, Dr. A. FLINT says there is no doubt. He gives to an adult gr. xx–xl, either in a single dose or in two or three doses during the first day. He thinks it should always be given, as it favorably modifies when it fails to arrest the disease. (*Clin. Med.*, 1879.)

Belladonna in the first stage is spoken well of by PHILLIPS. (*Mat. Med. and Ther.*, 1879.) Doses of ♏xv every hour or two may be given until the physiological effects on the eye and throat are produced.

Persistent *inhalation* of the steam from hot water, plain, or medicated with some of the above agents, is stated by COHEN to have had

long repute as an abortant of pulmonary congestion in its earliest stages.

Prof. A. B. PALMER remarks in the *Trans. of the Am. Med. Association*, 1876, that for twenty years he had taught and verified in practice the fact that if a patient with the ordinary acute form of pneumonia be seen within a few hours after the attack, and a free dose of an *opiate* be given, and once or twice repeated, so that its full anodyne effect is produced and for some hours maintained, in a large majority of cases the progress of the disease will be arrested. After the effect of the narcotic has subsided, a mild cathartic and eliminative will complete the cure. Within a few years he had modified this treatment by combining the opiate with quinine as follows: When called to a patient within twenty-four hours of the chill he immediately gives,

418. ℞. Morphiæ sulphatis, gr. ¼–⅓.
Quiniæ sulphatis, gr. vj–x. M.
For one dose.

In about an hour this induces free perspiration. The quinine alone is then repeated, gr. ix–viij, every two or three hours, until ʒ ss–j has been taken. No attention should be paid to the ringing in the ears, etc., as these symptoms are transitory and of no moment. The effect to be produced is the checking of the fever, and this nearly invariably occurs. If the treatment is commenced later, after consolidation is present, the morphine must be omitted, but the quinine administered as above.

The use of *salicylic acid* as an abortant of the disease has been recommended by Dr. L. L. SILVERTHORN. (Chicago *Med. Jour. and Exam.*, Feb., 1878.) He administers gr. xx. every two hours until four or five doses are taken, when free diaphoresis should follow, with resolution.

GENERAL TREATMENT.

PROF. NATHAN S. DAVIS, M. D., CHICAGO.

In the treatment of active sthenic pneumonia in its first stage, when the patient has been strong and healthy, a free bleeding from the arm (oz. 16–20) during the first day or two, followed by arterial sedatives, just enough to control the circulation, united with just enough anodynes to lessen irritability and pain, constitutes the most efficient treatment.

When the disease is associated with a typhoid condition of the system, as is usually the case in cities, bleeding is not well borne. In this class, Dr. DAVIS has succeeded best by giving, during the first two or three days, the two following prescriptions:

419.	℞.	Ammoniæ muriatis,	℥ iij.	
		Antim. et pot. tartratis,	gr. ij	
		Morphiæ sulphatis,	gr. iij.	
		Syrupi glycyrrhizæ,	f. ℥ iv.	M.

A teaspoonful every four hours.

420.	℞.	Hydrarg. chloridi mitis,			
		Ipecac. pulveris,	āā	gr. vj.	
		Opii pulveris,		gr. iij.	
		Sacchari albi,		gr. xxx.	M.

For six powders. One powder every four hours alternately with the preceding prescription. At the same time cover the chest with emollient poultices.

At the end of twenty-four hours the powders should be omitted, and if the bowels have not been moved, a mild laxative should be given; but the muriate of ammonia mixture may be continued every three or four hours for several days. If the symptoms are not favorably modified by the third or fourth day, a blister from three to six inches square should be drawn on the side of the chest most affected. If the pulse becomes soft and frequent, the breathing abdominal, and the lips of a leaden hue, the following may be given with advantage between the doses of the other medicine:

421.	℞.	Quiniæ sulphatis,	gr. ij.	
		Ammoniæ carbonatis,	gr. iv.	M.

For one dose.

If delirium or morbid vigilance becomes troublesome, add chloroform, ♏ x–xij, to each dose of the ammonia mixture. This will generally procure sleep, or greatly improve the condition of the patient. Where a diurnal remission of the fever indicates the presence of malarious influence, fair anti-periodic doses of quinine should be given during the remission.

ALFRED L. LOOMIS, M. D., NEW YORK.

This writer discards blood-letting, antimony and calomel, as well as veratrum viride and aconite, as equally useless or dangerous in nearly all cases of acute lobar pneumonia. Rest in bed, in a well-ventilated atmosphere of about 70° Fah., and abundance of liquid nutritious food, are the first steps to be taken. The pain, if severe, should be

allayed by morphia subcutaneously; the cough by small doses of opium or chloral. This is often enough.

In severe types, with high temperature, the German system of cold compresses or baths is of temporary avail and sometimes dangerous. The best antipyretic is *sulphate of quinine*, in doses of gr. xx–xxx per day. This lowers the temperature, shortens the febrile stage and hastens resolution.

Nearly all the deaths from pneumonia result from *failure of heart power*. The most serviceable remedy against this is *alcohol*. But it must not be used indiscriminately; as a rule, a feeble pulse, running 120 or 130 per minute, demands stimulants. If they act favorably, a change for the better will be noted in a few hours. The quantity must be graded to the needs; f. ℥ vi–viii of brandy in twenty-four hours is about an average.

Narcotics must be used cautiously and in small doses. *Counter-irritants* are useless and distressing. *Carbonate of ammonia*, so much used by some, is inferior to *champagne* as a diffusible stimulant. When œdema is detected in the unaffected portion of the lung, *dry cups* give marked relief.

DR. A. T. H. WATERS, LIVERPOOL.

The treatment employed by Dr. W., with a loss of only one case in forty-four, consisted mainly (apart from the occasional use of antimony, as above,) of *carbonate of ammonia*, combined with *chloroform*, (F. 422,) *chloric ether*, *opium*, *a generous, nutritious diet*, beef tea, milk, etc., with a judicious use of *alcoholic stimulants* from an early period. *Turpentine stupes, sinapisms, and linseed meal poultices*, were employed in the early stages of the disease, and *blisters* in the more advanced.

422. ℞. Ammonii carbonatis, gr. iv.
Spiritûs chloroformi, ♏xx.
Aquæ camphoræ, f. ℥ x. M.
To be given every three or four hours; may be given either with or without alcoholic stimulants.

Dr. W. considers that too high a value has been placed upon *mercury* as a remedy in the stage of hepatization, for which it has been considered peculiarly applicable. He finds that in these cases it possesses no special properties for promoting absorption of the effused matters. As a purgative, it is very useful, as it tends to relieve the portal system, often overloaded in pneumonic inflammation; but if given in frequent doses, or with a view of producing salivation, its

effects, save in a few exceptional cases, will be more or less prejudicial. It was only administered in one of the above-mentioned forty-four cases, and then it in no wise hastened, in the opinion of Dr. W., the recovery.

Opium is very desirable in many cases, often relieving pain, allaying the distressing cough, and procuring sleep. The pain in the side which so frequently accompanies pneumonia, and for which depletion was formerly prescribed, may generally be relieved by a dose of opium. It is believed of great value in arresting the delirium so apt to supervene in this disease. On the first appearance of the indications of approaching delirium, *e. g.*, want of sleep, restlessness, slight staring of the eyes, and slight tremor of the hands, a few doses of opium, and the exhibition of stimulants and nourishment, may at once arrest the attack. At the same time, all depletory measures should be avoided; the aim should be to improve the nutrition of the brain and give vigor to the circulation, for when these results are accomplished the delirium will disappear.

Few cases are now met with which are benefited by general *bleeding*, and the abstraction of blood by cupping or leeching is not often necessary.

The pulse affords an excellent indication as to the need for *stimulants*. As a rule, it may be said that when the pulse is below 100 the case is not a grave one, and will yield to treatment of a simple character; but when it rises to 110, 120, and upward, the case is more serious. *The more frequent the pulse, the greater is the need for stimulants*, and it is very remarkable to see the effect they produce on the pulse when it is abnormally frequent, in some cases of pneumonia. Intermission of the pulse is an invariable indication for the free use of stimulants. In the pneumonia of aged people stimulants may be given without hesitation.

RÉSUME OF REMEDIES.

Aconitum is a potent remedy in the early stages, (p. 207.)

Ammonii Carbonas. See above. (F. 422.)

Antimonii et Potassii Tartras is little given at present.

Belladonna is highly spoken of by Dr. HARLEY, who found that under its use the grave symptoms rapidly subsided, and convalescence was speedily established.

Bryonia. In mild cases, especially of pleuro-pneumonia, Dr. O. T. SCHULZ, (*Amer. Pract.*, Sept., 1879,) believes that tincture of bryonia, gtt. j every two hours, is beneficial in the stage of hepatization.

Camphora is recommended by Dr. COPLAND, as one of the most valuable remedies in *asthenic* pneumonia, in doses of gr. ij–viij, every four, five, or six hours, combined with calomel and opium, or with antimony and henbane, according to the character of the attack; the latter being preferred when the inflammation approaches the sthenic form, in which case the doses of the camphor may be lessened.

Chloroformum, by inhalation (8 or 10 drops at a time, three or four times a day,) is said to relieve the stitch in the side and palliate the cough and oppression.

Cinchona. *See* Quiniæ Sulphas.

Digitalis has been much employed of late years. M. RONY-SAUCEROTTE regards it (*Practitioner*, March, 1869,) as one of the best means of relieving the febrile and other grave symptoms; less active as an antipyretic than veratrum, but more easily managed and less offensive; acting more slowly than leeches, but producing more durable results.

**Ergot.* Ergot in powder has been used successfully in *croupous pneumonia* by Dr. WYCESK (*New Remedies*, No. 2.) He would not advise it, however, in large infiltrations, in emphysema, in cases of rupture of cerebral vessels, or in exhausted and decrepit individuals, as it might in such cases prove hazardous.

Eucalyptus. When pneumonia passes unto *pulmonary gangrene*, Dr. BUCQUOY, of l'Hôpital Cochin, Paris, states that no drugs have given him better results than eucalyptus globulus. He uses it in the form of an alcoholate—two grammes—(half a drachm) daily in a mixture of water, gum, orange-flower water, and syrup.

**Opium* is frequently a valuable remedy in arresting delirium, relieving pain and cough, and inducing sleep.

Plumbi Acetas is highly recommended in *asthenic* pneumonia, occurring in debilitated subjects. It may be combined with quinine (gr. j of each every two hours,) or, if the cough be very violent, opium may replace the quinine. Dr. STROHL (*Journal de Médecine*, February, 1872,) considers it to be the best of the internal remedies for pneumonia. It is preferable, he remarks, to tartar emetic, to digitalis, and to veratria, because its action is more certain, more prompt, and more free from inconveniences. Its action is incontestably superior in the pneumonia of old people. About five grains may be taken per diem in solution, in divided doses. He has never observed the slightest indication of saturnine poisoning in the course of this treatment. Far from producing constipation, it rather occasions diarrhœa. It can be administered at all ages. It does not interfere with any of the phenomena concomitant to the critical resolution, as expectoration, diaphoresis, etc. Under its action the pulse rapidly diminishes in frequency; the febrile sypmptoms and the temperature fall in the course of six days. The use of the lead may be intermitted as soon as the fever has abated and resolution has fairly set in.

Potassii Bicarbonas. Dr. JOHN PAPHAM, of Cork, recommends:

423. ℞. Potassii bicarbonatis, ℥j–vj.
Misturæ acaciæ, f.℥ iij. M.

A dessertspoonful in water, four, six or eight times in the twenty-four hours.

The evidence of the good effects of this alkaline treatment appears on the second or third day (*British Medical Journal*, December 28th, 1869.) It acts as a sedative by delaying the cough and abating the state of congestion on which it depends.

Potassæ Liquor, in doses of ℥x–xv, added to an ordinary expectorant mixture, is often beneficial in the advanced stages of pneumonia when the sputa are scanty, thick and viscid.

**Quiniæ Sulphas* is of the highest value in *asthenic* pneumonia, and in the advanced stages of pneumonic inflammation of the old and debilitated. Under the administration of gr. v every third hour, the pulse becomes slow and steady, and the respiration free.

Sanguinaria is recommended in *typhoid* pneumonia, when respiration is very difficult, the extremities livid, and the pulse full, soft and compressible. The dose should be large in proportion to the violence of the disease, and repeated until it excites vomiting or relieves symptoms.

**Senega*, in decoction, is recommended by Dr. C. J. B. Williams, when the inflammatory symptoms have subsided, and any amount of debility, with weak pulse, cool skin, cough, and dyspnœa remains. Cases which have resisted other remedies, often almost immediately improve by its use, the pulse becoming slower, the breathing freer, the tongue cleaner, and the strength greater.

Turpentine. This is an important remedy in acute pneumonia. Dr. R. E. Power writes in the *British Medical Journal*, 1876, that for many years he has adopted the following treatment with great success: First, a hot terebinthinate stupe is applied until the skin is well reddened; then a little plain oil of turpentine sprinkled over the affected part; finally, a blanket wrung out of boiling water, covered with a dry blanket. He has had patients delirious and gasping for breath, with sordes on the lips, fall asleep as the last blanket was applied, and awake out of danger. The internal remedies subsequently used were quinine and tincture of perchloride of iron. Diet: milk and water, beef-tea, lemonade *ad libitum*, occasionally wine. The application of the turpentine to little children must, of course, be modified to suit the age. In all cases, keep the swathe three or four days or more uninterruptedly. As a rule, the active treatment need not be pursued very long, the patient being generally out of danger in twenty-four or forty-eight hours. The sequelæ of pneumonia are much modified; frequently altogether escaped.

Valeriana. The ammoniated tincture, combined with camphor, is sometimes employed in the advanced stages of pneumonia, but is inferior to musk.

Veratria has been employed with great advantage. It may be given in pills or in solution (if the stomach be irritable, with an effervescing draught.) Prof. Vogt, of Berne, commences with gr. $\frac{1}{50}$, every two or three hours, until it produces vomiting or diminution of the pulse.

**Veratrum Viride* is much employed in pneumonia. The plan recommended by Dr. Norwood, is to begin with gtt. viij of the tincture every third hour, and add one drop to each successive dose, until the pulse is sufficiently reduced or nausea supervenes; the subsequent doses are then to be regulated so as

to sustain the depressed state of the circulation, with as little disturbance of the stomach as possible, any excess of nausea being controlled by a little morphia. With the reduction of the pulse the inflammatory symptoms decline and convalescence ensues. Many physicians have reported very favorably upon this remedy; but for all that, its propriety is doubtful.

EXTERNAL REMEDIES.

Baths. On the theory that the danger in pneumonia arises from enfeeblement of the heart, Dr. T. JÜRGENSEN, of Kiel, has advocated the withdrawal of heat from the body by cold baths, as often as the temperature reaches 104°. The duration of the bath ought to be from seven to twenty-five minutes, and with the old and weak, tepid water may be used. Before the use of the bath, a stimulant ought always to be administered, on account of the increased effort which the bath entails on the heart for the time being. In addition to the lowering of the temperature by the bath, JÜRGENSEN recommends the administration of quinia in doses amounting to 30 grains, dissolved in water by the aid of acid. This quantity to be administered every second evening, between six and eight o'clock. There is no danger, he says, in even doubling this dose. He gives a nutritious diet, with a moderate amount of wine.

Blisters are not beneficial in the early, but may be useful in the advanced stages of pneumonia.

Counter-Irritants may be employed in the early stages of the disease. The principal applications employed are *tartar-emetic ointment; croton oil; *tincture of iodine; *turpentine* stupes.

Poultices are especially useful in the early stages of the inflammation. Flaxseed poultices, made so as to envelop the whole chest, give great relief, and exercise a salutary influence on the inflammatory action.

Venesection. In regard to bleeding, in pneumonia, we may quote the opinions of three good authorities. Dr. SAMUEL WILKS, F. R. S., says: "In great engorgement of the lungs or of the right side of the heart, bleeding will afford relief," and should be practiced. (*Guy's Hospital Reports*, 1874.) Dr. A. L. LOOMIS also says: "There is one condition in which a patient with pneumonia may be bled to advantage, and that is when there is evidence that the heart is engorged with blood, accompanied by the evidences of sudden pulmonary congestion and œdema." In his *Clinical Lectures* (p. 280), Dr. N. S. DAVIS, of Chicago, says: "Bleeding and direct sedatives must be limited to the first three days of the disease. That a prompt and free bleeding in the first or congestive stage of active pneumonia, followed judiciously by sedatives and anodynes, is capable of greatly lessening the tendency to exudation, and favorably modifying the whole subsequent tendency of the disease, even to the extent of materially shortening its duration, I have do doubt. I have seen it demonstrated so frequently, that to doubt is to distrust the evidence of my senses." These remarks of Dr. DAVIS are not intended by him to apply to pneumonia as seen in cities or malarious districts, where it nearly always partakes of an asthenic character.

III. DISEASES OF THE CIRCULATORY SYSTEM.

General Therapeutics of Heart Disease—Angina Pectoris—Cardiac Dilatation—Cardiac Hypertrophy—Carditis—Fatty Degeneration of the Heart—Functional Palpitation and other Derangements—Irritable Heart—Valvular Disease of the Heart.

GENERAL THERAPEUTICS OF HEART DISEASE.

DR. S. O. HABERSHON, LONDON.

This physician lays down seven rules of treatment applicable in all cases of heart disease. (*Guy's Hospital Reports*, 1867.)

The *first* is to *lessen the work of the heart;* this may be done by mechanical rest, by the recumbent position, and by avoiding stimulants and sudden changes of temperature.

The *second* is to *insure regularity of action*, by avoiding mental excitement, by guarding against indigestion, and by never allowing constipation to continue.

The *third* is to *lessen distension*, especially of the right side of the heart, by purgatives, diuretics, and by mechanically diminishing the quantity of fluid in circulation.

The *fourth* is the prevention of syncope. With this view, sudden muscular movements must be avoided; stimulants may be required, as ammonia, brandy, etc.; and sedatives must be withheld or cautiously administered.

The *fifth* is to strengthen the muscular fibres of the heart by suitable nourishment; a bracing air, if other conditions allow; chalybeate medicines; and if the patient be exhausted by want of sleep, this symptom must, if possible, be relieved.

The *sixth* is to prevent fibrination of the blood. For this purpose, carbonate of ammonia will often be useful; other alkalies, as potash, soda, and other salts, may be beneficial; but, if long continued, in considerable doses, they depress the action of the heart. The acetate and iodide of potash may be advantageously combined with the carbonate of ammonia, or perhaps the hydrochlorate of ammonia.

The *seventh* is to prevent secondary complications, and to relieve them when produced. These complications are: 1. Broncho-pneumonia and pleuritic effusion. 2. Pulmonary apoplexy and other hemorrhages. 3. Visceral engorgement, as hepatic and renal congestions, with ascites and anasarca. By freely acting on the bowels, the portal congestion is greatly diminished, and the liver is enabled to act in a normal manner. Thus a free mercurial purge is of great value. The kidneys may be excited to a more vigorous action by a combination of mercurial medicine, with squill and with digitalis, when the latter can be borne. Salivation should be avoided. Diuretics are useful. An effectual way of diminishing the anasarca is by puncturing the skin on the thighs. The pulmonary engorgement is sometimes greatly reduced by applying cupping-glasses between the shoulders, or by the application of a blister to the chest.

J. MILNER FOTHERGILL, LONDON.

Treatment of Primary Heart Disease. It is of the utmost importance, in primary disease of the heart, to reduce to a minimum the calls upon its action. Rest in bed is desirable, and light labor alone must be attempted. The tendency usually is for the veins to become too full of blood, while the arteries remain insufficiently filled. Much relief is afforded by unloading this venous congestion. Brisk catharsis, say pulv. jalapæ comp. ℈ij, at frequent intervals, does much good. Diaphoresis is also valuable. The form of diaphoretic best adapted to heart cases, is the application of heat externally. The bath, however, should not include the head, hence Turkish baths are objectionable. In the attacks of *dyspnœa*, so common in diseases of the heart, large, hot poultices of linseed meal, faced with mustard, and applied over the front of the chest and between the shoulders, are most serviceable. Of all drugs in cardiac adynamy, *digitalis* takes the lead. Its cumulative action has been greatly exaggerated, if it exists at all. The continuous use of small doses is the best plan of treating chronic cases. In cardiac dropsy, full doses must be given. Its effects are most gratifying when it produces a full flow of urine. In simple cardiac debility the following is a pleasant combination:

424. ℞. Tinct. digitalis, ♏x.
Spiritûs ætheris nitrici, f.℥ss.
Infusi buchu, f.℥j. M.
This amount thrice daily.

At other times potash in any of its forms, but especially the citrate, may be added to the mixture. Where atonic gout is combined with the disease, the following is constantly used by Dr. F.:

425. ℞. Potassii bicarb., gr. x.
Fer. pot. tart., gr. v.
Tinct digitalis, ♏x.
Infusi buchu, f.℥j. M.

This amount thrice daily, to be followed by a good draught of water, and taken half an hour before meals.

Where there is palpitation, acute anæmia and debility, the following may be given:

426. ℞. Tinct. digitalis, ♏x.
Ferri ammonio-citratis, gr. v.
Ammoniæ carbonatis, gr. v. M.

This amount three or four times daily.

In the complex condition of cardiac debility, gastric catarrh, copious eructations of wind, and inactivity of the bowels, so commonly found together in chronic heart disease, digitalis may best be given in pill, as in this combination:

427. ℞. Pulv. digitalis, gr. xxx.
Ferri sulph. exsic., gr. xv.
Pulv. capsici, gr. xl.
Pill. aloes et myrrhæ, ℥ ij. M.

Make sixty pills. One twice daily.

In advanced dropsy, poulticing the abdomen and thighs with digitalis leaves has been found to produce excellent results.

TREATMENT OF SECONDARY AFFECTIONS OF THE HEART.

High arterial tension is usually the result of continued hypertrophy, lithiasis (suppressed gout), and spasm of the arterioles. In lithiasis the various natural waters which contain potash are very valuable. When drugs are prescribed, it is a matter of first importance that each dose be accompanied by large draughts of water; this makes them much more effective. A good form of mixture is furnished by the following combination:

428. ℞. Potassii iodidi, gr. v.
Potassii bicarbonatis, gr. xv.
Infusi buchu, f.℥j. M.

This amount, three or four times a day on an empty stomach, washed down with a tumblerful of water.

If the pulse be strong and hard, and the first sound of the heart good, then vini colchici, gtt. x, may be added to the above with advantage. If the opposite condition of the heart exist, with a compressible pulse and dilatation, then instead of the colchicum, tinct. digitalis, ♏x, may be added. This will maintain the vigor of the heart under the depressing action of the alkalies.

DR. THOMAS KING CHAMBERS, LONDON.

Dietetics in Heart-Disease. Dr. CHAMBERS points out (*A Manual of Diet in Health and Disease,*) the fact that in disease of the heart the most remarkable change in respect to digestion is the slowness with which liquids are absorbed by the stomach, owing to the weakening of the circulation. The fluid in excess remains in the viscus and impedes digestion. The observation of a *dry diet* contributes greatly to the comfort of the patient, and more particularly so where dilatation of the heart's walls exists, and where, therefore, distension of the stomach would interfere with the laborious action of the heart; also, in cases of cardiac disease complicated with obesity.

The dietary should be at least as nitrogenous as in health. There is danger of atrophic degeneration of the cardiac muscle, which must be guarded against by generous diet. Alcohol should be used either not at all, or only in sufficient quantity to facilitate the assimilation of food; as soon as it diminishes assimilation, it is injurious. Indeed, we may say that alcohol is rather indicated during the times of acute failure than as a permanent part of the dietary of heart affections. The use of tea and tobacco, both of which are neurotic poisons when taken in quantities, must be rigidly restricted.

Climate in Heart Disease. Dr. CHAMBERS points out that in England degenerative heart disease is the rule and acute the exception; while in Italy, degenerative disease is the exception and acute disease the rule. Aneurism is almost unknown in Italy. The severe winters of the north of Europe and the northern United States are particularly trying on patients with heart disease. A low temperature, by contracting the capillaries, raises the blood pressure, and makes additional demands on the weakened heart. The diminished pressure of the atmosphere in elevated regions, as of our western plains, leads to excitability and hypertrophy of the heart. As a rule, cardiac diseases are less common and less fatal near the sea, where the extremes of temperature are less marked, and the atmospheric pressure the great-

est. These considerations offer suggestions for the proper climatic treatment of cardiac affections.

DR. T. CLIFFORD ALLBUT, M. A., F. L. S., ETC., LONDON.

To subdue the distress in nervousness, the dyspnœa, the pain and night terrors of advanced heart disease, this writer urges (in the *Practitioner*, December, 1869,) the value of the *Prunus Virginiana*, and especially the *hypodermic use of morphia*. He justly says there is scarcely any disease more distressing than the latter stages of these maladies, when the patient, with a clear head, but with gasping breath, a striving heart, and swollen limbs, hardly finds a moment's rest from torment. Opium cannot be given, on account of its effect on the kidneys. His experience convinces him of the utility of the wild cherry in many of the milder cases of cardiac distress, and in such, he urges its claim warmly; but it is impotent in the more severe forms. Here he employs *morphia*, hypodermically, especially in angina with diseased coronary arteries, in neuralgic distress from intra-thoracic tumors, in mitral regurgitation, and in aortic disease, where the heart is big and pumping.

He uses the hydrochlorate of morphia in doses varying from one-tenth to one-third of a grain; seldom half a grain, except in such a case as intense pain from angina or intra-thoracic tumor. He always begins with one-eighth or one-sixth; and in ordinary cases, he finds a quarter of a grain the proper dose—in a case, say, of mitral regurgitation with pulmonary congestion in an otherwise healthy adult. The dose is best given in an evening, and should always be followed by perfect quiet in the room. The last is an important element in all cases of injection of morphia. The urine should be examined and the drug withheld, or given with caution, if albumen be found. There need be no great fear of it during albuminuria only secondary to the heart disease, unless there be reason to suppose that excessive renal congestion be present, and head symptoms at hand. He scarcely ever remembers that morphia caused disturbance of the stomach or other inconvenience. As in cases of severe pain, so it seems that in cardiac disturbance, the intolerable distress "carries off" the troublesome qualities of the drug. Its effects, again, are not merely comforting, but are curative so far as such cases are to be cured. An injection of morphia three or four times a week, by tranquilizing the heart and allowing the circulation to recover its freedom, sets free, also, the

organs which are oppressed, and the system can once more find something like its balance. Thus relieved, the patient may, with incessant care, enjoy some respite from his malady, and the occasional use of morphia may put off the day of its return.

HORACE DOBELL, M. D., LONDON.

Dr. DOBELL lays down certain "aphorisms" in reference to *pain in the region of the heart*, which should materially influence the treatment adopted. (*On Affections of the Heart*, London, 1876.) Thus, such pain does not necessarily indicate heart disease; a neglected dyspepsia, especially that characterized by an excess of acidity, may produce it; also, an erratic neuralgia of the gastric branches of the pneumogastric; deteriorated blood in anæmia; and local interference with the circulation. But if the pain at the heart is accompanied by pain in the left arm, it is an important symptom of cardiac disease; also, if it is excited by exercise on an empty stomach. Of course, in various dangerous forms of heart disease, pain is entirely absent.

In treatment, the patient should be instructed to take the warning given by nature, and stop exercise or exertion when called upon to do so by pain at or about the heart; yet a rigorous and persistent restriction of exercise, necessary in the early part of the treatment, must not be carried to the extent of weakening the muscular action of the heart. For dyspeptic pain, alkaline mixtures and vegetable tonics are demanded. A favorite one with Dr. D. is:

429. ℞. Sodii bicarbonatis, gr. v–x.
Pulv. calumbæ, gr. x–xx.
Pulv. zingiberis, gr. x. M.
Take in water before each meal.

DR. LAYCOCK, DUBLIN.

430. ℞. Potassi iodidi, gr. v.
Potassi bromidi, gr. xv. M.
For one dose; to be taken at night.

In the distressing *dyspnœa* of heart disease, Dr. L. has found the above combination superior to any other, believing it to be both palliative and curative. Of opiates, he prefers the hypodermic use of morphia, or else ten to fifteen minims of the solution of the bimeconate of morphia by the mouth; although he is satisfied that in any form opium tends to increase the albuminuria and dropsy which accompany cardiac lesions. Should the gastric vagus be implicated, hydrocyanic

acid is the most efficacious remedy. (*Dublin Medical Journal*, December, 1873.)

DR. C. M. DURRANT, LONDON.

Hygienic Rules in Incurable Heart Disease. The first rule to impress upon patients, says this writer, (*British Medical Journal*, Feb., 1875,) is the careful avoidance of sudden, hurried or violent motion. Rapid walking, lifting weights, prolonged traveling must be shunned.

The second rule, and one not to be neglected without great risk, is the avoidance of partaking at any one time of a large, distending meal. The sudden death of heart disease is very apt to come shortly after or during a hearty meal. The food, therefore, should be easily assimilable, and taken in small quantities at frequent intervals.

The third rule is to avoid taking much liquid, especially cold liquids. By exciting nerve irritation, they produce cardiac syncope and sudden death.

Lastly, a patient, laboring under serious heart disease, should, as a rule, be absolutely forbidden to indulge in sexual intercourse.

ANGINA PECTORIS.

DR. ALFRED L. LOOMIS, NEW YORK.

This author states that the only remedies he has found of service in delaying and rendering less severe the paroxysms of this disease are *iron*, *strychnine* and *arsenic*, administered daily in small doses. During the paroxysm, rest and free administration of digitalis are of the greatest service. He adds that opiates, chloroform, and nitrite of amyl should not be used.

DR. T. H. TANNER, LONDON.

This author has found the following mixture exceedingly valuable in angina:

431.	R.	Spiritûs ætheris compositi,	f. ʒj.	
		Liquoris opii sedativi (Battley),	gtt. x.	
		Misturæ camphoræ,	f. ℥ ss.	M.

This amount as required.

(Battley's sedative solution of opium is a secret preparation much used in England; said to be made as follows:

432. ℞. Extracti opii (hard), ℥ iij.
Aquæ dest. bul., ℥ iij.
Dissolve and filter. When cold, add
Spirit. vini rect., ℥ vj.
Aquæ q. s. to make Oij.
The above are English imperial measures. The dose is half that of laudanum.)

The patient should keep the above medicine by him, in order that it may be taken on the least threatening of an attack. A belladonna plaster worn constantly over the præcordial region may do good. The return of the seizure is to be guarded against by improving the general health, by great attention to diet, and by the avoidance of stimulants, strong exercise, and all mental excitement.

DR. F. W. MOINET, SCOTLAND.

During the paroxysm of angina, the treatment most efficacious in relieving the symptoms is that by diffusible stimulants and opium, hot brandy and water, sinapisms to the feet and placing the hands in hot water. Galvanism, carefully and at first gently applied, is of service even in organic angina, by giving tone and stimulus to the heart's muscular fibre. When the circulation is languid and stagnant, bleeding is called for. Nitrite of amyl is occasionally useful. (*Edinburgh Medical Journal*, Feb., 1871.)

DR. HENRY HARTSHORNE, PHILADELPHIA.

Mustard plasters should be applied between the shoulders and over the chest, and the patient's feet placed in a warm foot-bath. Stimulants and anodynes are indicated, as

433. ℞. Sodii bicarbonatis, ℈ iv.
Spts. ammon. aromat., f. ℥ j.
Spts. ætheris compos., f ℥ j.
Tinct. cardamom. comp., f. ℥ iij.
Aquæ camphoræ,
Mucilag. acaciæ, āā f. ℥ x. M.
A dessert or tablespoonful at a dose.

434. ℞. Tinct. rhei et sennæ, f. ℥ iss.
Syrupi zingiberis, f. ℥ iij.
Tinct. opii, f. ℥ j. M.
A teaspoonful in hot water.

435. ℞. Chloroformi,
Spts. ammon. aromat., āā f. ℥ ij.
Spts. ætheris compos.,
Tinct. opii camphor.,
Mucilag. acaciæ, āā f. ℥ ss. M.
A teaspoonful at a dose.

DR. G. W. BALFOUR.

In the treatment of angina pectoris, Dr. BALFOUR relies chiefly on the inhalation of *chloroform;* it not only relieves pain, but regulates the circulation. He has also a very high opinion of *arsenic*, stating that in all forms of cardiac anginia it acts almost as a specific, and is a special tonic to the cardiac muscle. It has this effect even in very small doses. The preparation he uses is the liquor arsenicalis. (*On Diseases of the Heart and Aorta.* London, 1876.)

DR. FAUCONNET, PARIS.

436. ℞. Sulphureti antimonii aurati,
Sulph. ferri exsic.,
Sulph. quiniæ, āā gr. x. M.
Make twelve pills. One thrice daily.

Dr. FAUCONNET, from personal experience, recommends the *golden sulphuret of antimony*, in cardiac neuroses of various forms. Professor RICHARD MCSHERRY, of Baltimore, states that he has employed it largely, with generally satisfactory results. As organic heart diseases are nearly always attended with neurotic disorders, it is valuable as a palliative, even in incurable cases. Most patients bear well gr. j three times a day.

PROFESSOR G. SÉE, PARIS.

Mr. SÉE, has no faith in nitrite of amyl, chloroform or belladonna, in this disease. Electricity is dangerous. During the paroxysm he repeats twice or three times hypodermic injections of *morphia* in full strength, following it immediately by an enema of *chloral hydrate*, gr. xxx–xlv, aquæ, f. ℥ v. Sometimes *acetate of ammonia*, which is an energetic cardiac stimulant, will be found greatly to facilitate respiration. After the attack the morphia should be used daily for a few days to prevent a recurrence; and as a prophylactic treatment, the only one of much value is the frequent use of bromide of potassium and digitalis, so as to regulate the circulation. (*Gazette des Hôpiteaux*, June, 1876.)

DR. T. L. BRUNTON, LONDON.

On the other hand, Dr. BRUNTON (*British Medical Journal*, July 13th, 1872,) highly extols the *amyl nitrite*, and in the same journal (November 28th, 1874,) and elsewhere, instances of its great value

are given. About two or three drops, used by inhalation, are generally sufficient to afford relief. Fatty degeneration contra-indicates it.

DR. N. GALLOIS, PARIS.

437. ℞. Tincturæ digitalis,
Tincturæ belladonnæ,
Tincturæ valerianæ,
Spiritûs ætheris compositi, āā f.℥j. M.

Dose, ten to twenty drops during the access of pain; stimulating frictions over the sternum; and if the attack prolongs itself, hypodermic injections of atropia.

438. ℞. Quiniæ sulphatis, gr. xxx.
Acidi arseniosi, gr. ss.
Extracti valerianæ, q. s.

Divide into thirty pills. From two to four a day for persons subject to attacks, in order to lessen their frequency.

RÉSUMÉ OF REMEDIES.

Aceticum Acidum Dilutum. Bathing the chest every morning with vinegar and water is said to lessen the liability to attacks.

Ammonii Bromidum. This substance, in doses of gr. xv–xx, three or four times a day, has been very successfully used to check paroxysms of angina by Dr. R. K. Hinton. (*Medical and Surgical Reporter*, March, 1875.)

Amyl Nitrite, (see above.)

Argenti Nitras, gr. j daily, in the form of a pill, is favorably spoken of by Dr. Copland.

**Arsenic.* Dr. Anstie says he has seen the most remarkable relief afforded by this remedy. It may be given in the form of Fowler's solution; in pill of arsenious acid; or (gr. $\frac{1}{16}$) of arseniate of soda, with extract of hop; by subcutaneous injection; or, by inhalation of the smoke of arsenical cigarettes. Dr. Anstie states that it will lessen the severity of the attacks, reducing them in time to mere "tightness of the chest."

Assafœtida, combined with opium and ether, is sometimes of service.

Camphor, in combination with opium or hydrocyanic acid, sometimes acts favorably.

Ether is praised as a palliative by Dr. Anstie, who considers it, however, as inferior to arsenic or strychnia.

**Morphia,* by hypodermic injection, is praised by Profs. Bartholow and Sée.

**Strychnia,* by hypodermic injection (gr. $\frac{1}{120}$–$\frac{1}{60}$) twice daily for several weeks, is highly lauded by Dr. Anstie, who has seen remarkable benefit attending its use in presence of a threatening paroxysm.

Quiniæ Sulphas has been advised in intermittent angina pectoris.

Zinci Sulphas sometimes proves of great benefit when persevered in during the intermissions.

Stimulants. The relief of pain is better accomplished by the use of ether, or of morphia or atropia hypodermically, than by large doses of spirits.

**Turpentine* stupes, applied to the chest, often mitigate the severity of the paroxysm, particularly in the old and debilitated.

Issues. An issue at the nape of the neck sometimes acts favorably in mitigating the symptoms.

CARDIAC DILATATION.

DR. ALFRED L. LOOMIS, NEW YORK.

The indications are: 1. To maintain nutrition. 2. To avoid violent cardiac action. For the first, our author commends an exclusively milk diet, the fluid taken in small quantities at short intervals. "As a rule, it is always safe to daily administer *iron* to a patient with dilated heart." Slightly stimulating baths, flannel next the skin, the avoidance of emotion, and the arrest of all exhausting discharges, are important. A dry, bracing atmosphere is most suitable. The most important remedy is *digitalis*, in sufficiently large doses to regulate the heart's action. As it loses its controlling power by continued use, it should not be exhibited indiscriminately.

J. M. DA COSTA, M. D., PHILADELPHIA.

439. ℞. Pulveris digitalis, gr. v.
Extracti belladonnæ, gr. j.
Ferri redacti, ℈ ij. M.
For twenty pills. One thrice daily.

440. ℞. Emplastri belladonnæ, 4x4
To be worn over the cardiac region.

Belladonna is one of the best agents that can be employed to overcome irregularity of the action of the heart, and to relieve pain. *Digitalis* is also useful for the same purpose, especially where the action of the heart is feeble; it is the only sedative which will reduce the frequency and not the force of the heart. It may be combined as follows:

441. ℞. Ferri lactatis, ʒ ss.
Pulveris digitalis, gr. v. M.
For twenty pills. One thrice daily.

442. ℞. Tincturæ digitalis, f. ʒ ss.
Ten drops thrice daily, in cases of dropsy caused by cardiac dilatation.

Also,

443. ℞. Pulveris jalapæ compositi, gr. x.
For one dose at night.

In such cases, a tablespoonful of lemon juice, three times a day, acts as a diuretic and stomachic. Baths, also, are advantageous. Dry cups applied to the chest relieve the pulmonary congestion. It is more important to start the secretions and relieve internal congestions, than to give tonics and iron, which find their appropriate place in after-treatment.

DR. ROBERTS BARTHOLOW, OHIO.

444. ℞. Ferri redacti,
Quiniæ sulphatis,
Pulv. digitalis, āā ℈j.
Pulv. scillæ, gr. x. M.
Make twenty pills. One three or four times a day.

Recommended as extremely serviceable in dilatation of the heart and mitral regurgitation, accompanied by cough, difficult breathing and general dropsy.

Another valuable remedy in dilatation, without valvular lesion, is *ergot*. It may be given with digitalis.

445. ℞. Extracti ergotæ fluidi, f.℥ iijss.
Tincturæ digitalis, f.℥ ss. M.
A teaspoonful three times a day.

Ergot slows the action of the heart and produces a contraction of the smaller vessels

DR. FELIX VON NIEMEYER, PROF. UNIVERSITY OF TÜBINGEN.

Our author has convinced himself, by a great number of observations, that digitalis is a very efficient means of extemporarily strengthening the heart's contractile power, and of thus allaying dropsy and cyanosis. In dilatation of the heart, digitalis, combined with an exclusively milk diet, is an invaluable remedy. Dr. Von N. has repeatedly succeeded in obtaining complete removal of dropsical effusions of great magnitude, and producing considerable temporary relief, by this mode of treatment.

Iron, which, fortunately, no longer has the reputation of being "heating," should always be prescribed when the patient shows any signs of anæmia or hydræmia.

DR. WALSHE.

When dropsy appears in cases of dilatation of the heart, the diuretics which yield most relief are the acetate, nitrate, iodide, and bitrartrate of potassium, nitrous ether, compound tincture of iodine, the infusion and spirits of juniper and gin. Hydragogue cathartics, elaterium, gamboge, citrate of potassa, and the compound jalap powder, also aid in subduing the dropsical effusion. The following formula is a useful one for the administration of elaterium:

446. R. Extracti elaterii, gr. $\frac{1}{6}$–j.
Extracti creasoti, gr. ij.
Extracti hyoscyami, gr. ij. M.
For one pill.

RÉSUMÉ OF REMEDIES.

**Belladonna* is prescribed by Prof DA COSTA to overcome the irregularity of the heart's action, and to relieve pain.

**Digitalis* is recommended in dilatation, by Prof. DA COSTA and Prof. NIEMEYER (*see above*), Drs. GULL, WILKS, FULLER, HANDFIELD JONES, TROUSSEAU, and others. The conclusions of Dr. MURRAY are as follows: 1. That digitalis will stimulate and strengthen a weak heart, and that the weaker are the muscular tissues of the heart, the safer will be the administration of the medicine. 2. That in hypertrophied heart, it will fail to reduce the pulse either in frequency or strength, and in such cases, will prove dangerous. 3. That in a weak organ, acting, on account of its weakness, with great rapidity, it will reduce the number of its contractions, and, as it were, strengthen or tone them down. To strengthen and quicken the action of a weak, slowly-acting heart, and to reduce the number of the rapid strokes of a full heart, is, according to ANSTIE, to do the work of a true stimulant; bringing action up to the normal standard, on the one hand, and reducing it to that level on the other. (*Brit. For. Med.-Chir. Rev.*, July, 1865.)

Nitrate of Amyl, in dilated heart, has been found of value. Dr. E. HOLDEN has reported a striking case in the *New York Medical Record*, April 27th, 1878.

Dry Cups to the chest are useful to relieve the pulmonary congestion.

CARDIAC HYPERTROPHY.

DR. HENRY HARTSHORNE, PHILADELPHIA.

Where there is dilitation with hypertrophy, the main principle is to avoid exciting causes, especially violent exercise, alcohol, and venery. Moderate venesection at long intervals, is appropriate for robust patients; occasional leeching or cupping over the heart may be done. As an astringent and cardiac sedative, *acetate of lead* is worthy of trial.

447. ℞. Plumbi acetatis, ℥ss.
Pulveris opii, gr. v.
Confect. rosæ, q. s. M.
Make twenty pills. One thrice daily.

Where abnormal rapidity of the heart is present, *digitalis* may be used unhesitatingly, but moderately. In violent acceleration of the pulse, we may, however, expect more from *veratrum viride* as a sedative and palliative (gtt. ij–v of Norwood's tincture every three or four hours, diminishing the dose if nausea follows.) Benefit is obtained, also, in such cases, from the use of *wild-cherry bark*.

DR. LEOPOLD SCHROETER, VIENNA.

In idiopathic hypertrophy, two remedies, in particular, are useful. The first is *cold*, used persistently and regularly: It is best applied by the temporary or continuous use of ice-bags laid over the chest or worn suspended around the neck. It often quiets, in a wonderful manner, the over-activity of the heart. The second is *digitalis*. It very decidedly diminishes the frequency of the heart's action, and since it is usually required but temporarily, is quite in place in this disease. Veratrum viride and tartar emetic, recommended by some, our author considers are objectionable.

For the acute dilatation, which occurs in the course of inflammatory diseases, our object will be simply to maintain the energy of the heart's contractions for a short period; and for this purpose stimulants will be of great assistance, and amongst these he considers *tea* of special value.

ALFRED L. LOOMIS, M. D., NEW YORK.

This author condemns the practice of blood-letting, to which the full pulse and symptoms of cerebral hyperæmia have prompted some

practitioners in this disease. Of all remedial agents to diminish the force of the heart's action, he has found *aconite* the best. His prescription is:

448. ℞. Tincturæ aconiti rad. (Fleming's), q. s.
Two to three drops every three or four hours.

"No drug so fully and promptly relieves the vertigo and other painful sensations that attend cardiac hypertrophy." It is contra-indicated if the dilatation overbalances the hypertrophy of the cardiac walls. Digitalis is contra-indicated unless there is degeneration of the hypertrophied walls.

J. M. DA COSTA, M. D., PHILADELPHIA.

In the treatment of hypertrophy of the heart, as much rest as possible should be insisted upon. The patient must be directed to lie down for several hours each day. The sinking of the pulse, which naturally occurs in the recumbent position, makes this posture as potent a cardiac sedative as we possess. All stimulants to the action of the heart should be removed. This includes the removal of any dyspeptic symptoms which may be present, and of any other disordered function which can react upon the heart.

There are only two drugs in which our author has any confidence; one is *aconite*, or its active principle, aconitia, and the other *veratria*. These are the only medicines which directly and positively control the element of muscular power of the heart. Digitalis does not compare as a pure sedative with either aconite or veratrum viride. Gelsemium is useless; it has a false reputation. It is time lost to employ it. Hydrocyanic acid is often a useful and pleasant adjunct when there is gastric disturbance; alone it is of no value.

These principles apply both in the treatment of simple hypertrophy, and in that complicated with valvular disease. A certain amount of hypertrophy with valvular disease is beneficial, and judgment must be exercised in order to determine when to interfere, and when not.

449. ℞. Tinct. veratri viridis, f.℥ iss.
" aconiti radicis, f.℥ ss.
" zingiberis, f.℥ vss. M.
Fifteen drops thrice daily, two hours after meals, in water.

The addition of the tincture of ginger causes the veratrum viride to be better borne by the stomach. Our author also frequently orders:

450. ℞. Tinct. aconiti radicis, gtt. j.
Thrice daily *for many months*, its effects being watched.

In a large number of cases this remedy thus employed prevents the further growth of the heart, and in some it lessens the already existing bulk of the organ.

RÉSUMÉ OF REMEDIES.

**Aconite* is one of the two drugs (the other being veratrum) in which most authorities have any confidence in hypertrophy of the heart.

Asparagin. This derivative from asparagus is said by Dr. MARY J. MATLACK (*Med. and Surg. Rep.*, July, 1879,) to be particularly serviceable in hypertrophy of the heart. The following formula is of value:

451. ℞. Asparagin, grs. x.
Bromidi potass., ʒ ij.
Sacch. alb., ʒ iij. M.
Make ten powders, one thrice daily.

Camphor has been recommended, in doses of from grs. iij–xij, daily, as rendering regular the most tumultuous palpitations, and removing the dyspnœa attendant on hypertrophy of the heart with dilatation.

**Digitalis.* The best effects of digitalis in hypertrophy are obtained from small doses, large doses being regarded by many as hurtful, if not dangerous, in this affection. Drs. GULL, WILKS, FULLER, W. MURRAY, and HANDFIELD JONES regard digitalis as useless, and even dangerous, in simple hypertrophy, and would restrict its use to cases of dilatation and enfeeblement of the heart.

Fel Bovinum Purificatum has been recommended in certain forms of hypertrophy.

Plumbi Acetas has been recommended in the incipient stages of hypertrophy, but it is of doubtful value other than in relieving, in some cases, violent palpitations connected with hypertrophy.

Potassii Bromidum has been employed, but its utility is not established.

Potassii Iodidum, in small doses, *long continued*, seems to exercise, in some cases, a beneficial influence.

**Veratrum Viride* is one of the only two drugs (the other being aconite) in which Prof. DA COSTA has any confidence. (F. 449.)

Diuretics are strongly recommended by Dr. J. HOPE in hypertrophy, not only when there is dropsy, but also when there is none, as powerful derivatives.

CARDITIS, ENDOCARDITIS AND PERICARDITIS.

DR. BERNHARD KRAUS, VIENNA.

The principles of treatment of pericarditis embrace absolute rest in the recumbent position, cold applications, as ice bladders or cloths wrung out in ice water and laid over the præcordial region, and a mineral acid. (*Diagnose und Therapie der Krankheiten des Menschen.* Wien, 1877.) *Digitalis* should be given promptly, but after two or three days, be suspended, as it not only is alleged to have a cumulative action, but according to SKODA, a debility of the contractile power of the heart appears, which must be met by quinine, opiates and alkalies. Collapse is to be combated by wine, coffee, musk, carbonate of ammonia, and other stimulants.

As a diuretic:

452. ℞. Extracti digitalis, gr. xv.
Aquæ petroselinæ, f.℥ vj.
Oxymel. scillæ, ℥ vj. M.
A dessertspoonful every two hours.

Or ten drops of the liquor ammoniæ acetatis in a cup of warm infusion every two hours. Should there be much discharge into the pericardium (hydropericardium,) the diet should be nourishing, tonics be exhibited, and reliance be placed upon diuretics as:

453. ℞. Infusi baccarum junip., āā f.℥ iv.
Liquoris potassæ acetatis, f.℥ ss.
Liquoris ammoniæ succinici, M.
A dessertspoonful every two hours.

The external application of "Hahn's diuretic liniment," has been found of use. It is:

454. ℞. Olei terebinth., f.℥ j.
Vitelli ovi, No. ij.
Aq. menth. piper., f.℥ xx. M.
For external use. To be rubbed over the kidneys two or three times daily. Flannel around the loins.

If the dyspnœa increases, paracentesis of the pericardium is indicated. It is performed in the fourth intercostal space on the inner side of the line of the papilla. Frequently it results in permanent improvement.

DR. HAYDEN, DUBLIN.

Our author treats acute pericarditis in young and vigorous subjects with a saline aperient followed by leeches—ten, twenty or thirty, as the case may demand—following them with a warm poultice. If the impulse continues strong and abrupt, the rhythm regular, the sounds normal and sharp, and the præcordial pain and oppression persistent, he would not hesitate to repeat the leeching. This should be followed by

455. R. Hydrarg. chlor. mitis, gr. ss.
Pulv. antimonialis, gr. j. M.
One such powder every hour until slight salivation is produced.

When the improvement has well commenced, frequently-repeated moderate doses of wine are given to remove the cardiac debility and relaxation of the coronary arteries. To ensure sleep at night a moderate dose of some opiate is exhibited. The diet should be bland and nutritious. When the acute inflammatory stage is subdued, generally sustaining measures should be adopted, with iodide of potassium and the application of a blister. If the heart becomes tumultuous and irregular, digitalis is useful. When extreme effusion defies remedial agents, paracentesis must be resorted to. The point of election is that of maximum dullness, minimum impulse, and most distant cardiac sounds; usually a point one or two inches to the left of the sternum in the fourth or fifth interspace. Nearer to the sternum than one inch endangers the internal mammary artery. For acute endocarditis he relies on the same treatment.

DR. AUSTIN FLINT, NEW YORK.

On the subject of pericarditis, the author says blood-letting should be employed with great circumspection. Depletion by means of saline purgatives, with restricted diet, is indicated in the early stage. For some years the author has treated all cases of pericarditis without mercury, and he has found no reason to be dissatisfied with its omission. Opium should be administered. Locally, mild, revulsive and soothing applications. In the second stage, if the amount of effusion be sufficient to enfeeble the heart, it is highly important to remove the liquid as speedily as possible. For this end, the præcordia may be painted daily with the tincture of iodine, and small blisters may be applied, removing them as soon as vesication begins. Hydragogue cathartics

and diuretics as in pleurisy, taking care not to depress the vital powers. The strength in this stage should be supported by alcoholic stimulants, tonics and nourishment.

ALFRED L. LOOMIS, M. D., NEW YORK.

Whatever the conditions which develop *endocarditis*, the patient should be kept in bed. Opium in small doses, is proper. The temperature of the room should always be above 70° Fah. The chest should be covered with flannel, and not exposed. If the heart becomes feeble, digitalis is indicated. "Rest, opium, iron, and the most nutritious diet, with occasional use of stimulants, constitute the most serviceable agents to be employed in the treatment of this affection"

In the *acute ulcerative form* of endocarditis, large doses of quinine and stimulants are our only dependence.

In *pericarditis*, the same cautions about rest, etc., are to be observed. Blisters blood-letting, diuretics, and cathartics, our author considers useless; digitalis of doubtful value. "Opium, iron, moderate stimulation, rest in the recumbent posture, anodyne poultices, and concentrated nutrition, are about the only measures which I have found of service in the treatment of acute pericarditis." Aspiration he commends only when it can be positively determined that pus is in the pericardium.

DR. SHINGLETON SMITH, LONDON,

Regards (*Lancet*, August 22d, 1874,) the use of *aspiration* in copious effusion into the pericardium, as of great value. From ten to fifteen ounces of fluid may be withdrawn, and the relief is immediate. The needle may be introduced into the space between the fourth and fifth rib, about two inches to the left of the middle line of the trunk.

RÉSUMÉ OF REMEDIES.

Aconite is recommended by Dr. RINGER in pericarditis when the heart throbs violently, and thus produces extreme pain.

Antimonii-ses-Iodidum is sometimes employed.

**Digitalis*, combined with hyoscyamus tincture (āā ℥xv–xx), is recommended by Dr. J. HOPE in pericarditis, after the acute symptoms have been subdued. Dr. BEVERLY ROBINSON, of New York, considers it *the remedy* indicated for the treatment of the pulmonary complications of acute heart disease. (*Medical Record*, November, 1877.)

Hydrargyrum is considered by Dr. A. T. H. WATERS as rarely, if ever, desirable in pericarditis, except as a purgative. He prefers to the mercurial treatment

and venesection recommended by Drs. LATHAM, HOPE, and others, the milder but more effectual remedies of opium, bicarbonate of potash, the moderate and cautious use of stimulants, large linseed poultices to the chest, and blisters in the advanced stage, with good nourishment throughout the disease.

**Opium*, in grain doses, every three, four, six, or eight hours, is recommended by Dr. A. T. H. WATERS in pericarditis. The great relief to pain which often follows the local abstraction of blood in this disease, may be equally obtained by the administration of opium.

Potassii Iodidum, in doses of gr. iij–v ter die, is sometimes given with advantage in chronic pericarditis, appearing to favor the absorption of effused fluid.

Veratrum Viride is recommended by Dr. WARING-CURRAN (*The Practitioner*, August, 1868,) in pericarditis. He gives it in the form of an extract made by inspissating the juice of the root, and combines with it gr. j of calomel, every two hours, carefully watching the effect. A combination of opium and veratrum has been highly extolled in pericarditis, and valvular disease by Dr. J. L. LYNCH, of Baltimore. It avoids all the unpleasant gastric effects usually attendant on veratrum, and is palatable. It is:

456.	℞.	Tinct. verat. vir.,	āā	f.℥j.	
		Tinct opii,			
		Sodii bicarb.,		℥ ij.	
		Sacc. alb.,		℥ iv.	
		Aquam q. s.,	ad	℥ vj.	M.

S. Tablespoonful ever two or three hours.

For children, the quantity of opium should be reduced one-half, and the dose graduated for their ages.

Blisters are hurtful in the early stages of cardiac inflammation, but useful in the advanced stages.

**Poultices.* Large linseed-meal poultices are of signal service in the earlier stages of inflammatory action.

**Turpentine* stupes, which can be employed at a far earlier period than blisters, are often of manifest advantage in relieving pain and distress, and arresting inflammatory action.

Issues in the præcordial region frequently give relief in chronic inflammation of the heart or its membranes.

RHEUMATIC CARDITIS.

**Colchicum*, with alkalies, etc., is, according to Dr. FULLER, necessary in rheumatic carditis, to counteract and get rid of the materies morbi, without the removal of which it is difficult to conceive that a cure can be effected.

**Hydrargyrum*, combined with opium, and carried to the extent of slight salivation, is strongly recommended by Dr. FULLER in rheumatic inflammation of the heart, occurring in young, robust subjects, but he does not advocate its use in weakly, irritable and unhealthy constitutions.

**Opium*, in large and repeated doses, is strongly recommended in rheumatic pericarditis by Drs. WALSHE, FARRE (*St. Bartholomew's Hospital Report*, 1867,)

and others. If the surface has been blistered, *morphia* may be used endermically; and often, when opium internally is inadmissible, benefit is obtained from morphia hypodermically. Dr. FULLER says that in rheumatic carditis, opium in *full doses* is indispensable in every case. In the weak and irritable, where mercury is of little service, it proves particularly valuable. It is, of all remedies, that which comes most powerfully in aid of blood-letting and mercury. If, after all active symptoms have subsided, much irritability of the heart remains, occasional doses of opium and digitalis should be given, and an opium or belladonna plaster applied to the chest, while the general health is being attended to.

Quiniæ Sulphas, in doses of gr. ijss, combined with gr. xx of carbonate of potash, given in mucilage every four hours, was found by Dr. WINN (*Lancet*, November 14th, 1868,) highly beneficial in a case of rheumatic pericarditis attended with delirium.

Salicin, in scruple doses, every four hours, has been found by Dr. G. P. MAY of great use. (*British Medical Journal*, January, 1877.)

Stimulants. Alcoholic stimulants are often very beneficial in rheumatic pericarditis, especially when the attack is characterized by great pain, sleeplessness and jactitating movements of the limbs. In this form of the disease, Dr. ANSTIE regards alcohol as superior to opium as an anodyne and specific. It should be given in repeated small doses, the production of even the minor signs of intoxication being carefully avoided.

Blood-letting. Dr. GARROD states that so much relief follows the application of leeches to the cardiac region in rheumatic pericarditis, and in endocarditis, that he has no hesitation in recommending the measure, the bleeding never being allowed to produce any appreciable weakening of the patient. Generally, from three to twelve leeches are sufficient. The slow loss of blood by leeching is preferable to the more expeditious abstraction by cupping.

**Blisters* are recommended by Dr. FULLER in the advanced stages of rheumatic carditis, when effusion has taken place, as, of all local remedies, the most serviceable, their virtue being most unequivocally displayed when the amount of fluid is greatest.

FATTY DEGENERATION OF THE HEART.

MR. JOHN MARTIN, DUBLIN.

This writer (*Dublin Journal of Medical Sciences*, February, 1875,) believing that the fatty change is owing to an excess of carbonate of lime in the system, recommends the use of the *nitric* and *hydrochloric acids* in combination with iron. They should be taken in small quantities and for a long time. The diet should be one avoiding compounds of lime.

DR. A. T. H. WATERS, LIVERPOOL.

Ferri tinctura chloridi is highly recommended by Dr. A. T. H. WATERS, who believes that if it be given in small doses for a long time, it will often restore to an enfeebled and fatty heart a good deal of its vigor, and possibly of its structure. But its administration must be continued for months, and even years, being omitted from time to time as the digestive organs may demand. A chalybeate mineral water may be substituted for the tincture of chloride of iron, if the latter cannot be taken.

RÉSUMÉ OF REMEDIES.

Arseniosum Acidum, is, according to Dr. LOCKIE, of great value in fatty degeneration, and this in spite of the fact that experiments tend to show that fatty degeneration of the heart is one of the results of feeding animals with arsenical preparations.

Cimicifuga, is, according to BARTHOLOW, more efficient and safer, in fatty heart, to relieve the symptoms, than digitalis.

Digitalis, according to Dr. A. L. LOOMIS, will sometimes afford relief when there is yielding of the cardiac walls. By some, fatty degeneration is held to contra-indicate digitalis; but such an authority as BALFOUR states that it may be given without danger and with advantage.

Ergot is recommended by Dr. WARING CURRAN, as of material use in severe cases.

Ferrum in any of the officinal forms will frequently prove of use.

Strychnia. PHILLIPS says this will sometimes do good in cases of fatty heart, when all other remedies have failed; but it must be pushed cautiously and stopped if signs of nervous worry appear. (*Mat. Med.*, 1879.)

FUNCTIONAL PALPITATION AND OTHER DERANGEMENTS.

DR. H. BERNHEIM, PARIS.

With regard to the treatment of functional deficiency of the heart, when there is a presumption that the cardiac tissue is healthy, and when at the same time the obstacle which produces asytole is not insuperable, *digitalis* is indicated. When either of these conditions is absent, digitalis is contra-indicated. Thus in those cases of palpitation in which strong, full pulse, arterial plethora, and abundant urinary secretion point to exaggerated cardiac activity, those drugs which, like *muscarin* and *aconitia*, abate cardiac velocity and arterial tension, should be prescribed, to the exclusion of digitalis. So also in the functional disturbances accompanying cyanosis, dropsy, œdema, etc., with high arterial tension, the use of digitalis is attended with danger. (*Leçons de Clinique Médicale*, 1877.)

J. MILNER FOTHERGILL, M. D., LONDON.

This writer commends (*Medical Times*, April, 1876,) as the most satisfactory prescription, the following, or an appropriate modification of it, in palpitation:

457. ℞. Potassii bromidi, gr. xv.
Tincturæ digitalis, gtt. v. M.
This amount thrice daily.

If there is anæmia present, the *potassio-tartrate* of iron will be found to combine nicely with this prescription. A belladonna plaster should be worn over the region of the heart. Of course, in the treatment of such a neurosal affection, it is well to cut off every form of irritation, and everything which tends to create nervous excitement. The mind and body should both be kept as calm and tranquil as is possible. The alimentary canal should be attended to; the condition of the reproductive system ought to be carefully scrutinized, and the habits of life taken into consideration. Where there is a lack of tone in the nervous system, it is well to give the digitalis with hydrobromic acid, in which quinine readily dissolves, so as to furnish a tonic in the mixture. Where there is anæmia, the bromide and the digitalis may be combined

with the potassio-tartrate of iron, or a few drops of some preparation of iron may be taken twice a day, after food, with advantage.

J. M. DA COSTA, M. D., PHILADELPHIA.

Inquiry should always be made as to the cause, for the first step in the treatment is its removal. The cause may be found to be drinking of coffee, chewing of tobacco, smoking, alcoholic drinks, masturbation, etc.

In all cases of functional disorder of the heart, attended with palpitation, *digitalis* is very serviceable, more so than aconite. If there be masturbation as the exciting cause, the following is a useful combination:

458. ℞. Potassii bromidi, ℥ vss.
Tincturæ digitalis, f. ℥ ijss.
Infusi cascarillæ, f. ℥ iv. M.
A dessertspoonful two or three times a day.

ROBERTS BARTHOLOW, M. D., CINCINNATI.

The violent and irregular actions of the heart occurring in hysterical subjects are immediately relieved by the use of the hypodermic syringe. Morphia alone is used. In cases of dyspnœa, dependent upon dilated right cavities, pulmonary œdema and mitral disease, advantage is derived from the following:

HYPODERMIC INJECTION.

459. ℞. Morphiæ sulphatis, gr. xvj.
Atropiæ sulphatis, gr. j.
Aquæ destillatæ, f. ℥ j. M.
Filter. Dose, five minims (equal to one-sixth of a grain of morphia, and one ninety-sixth of a grain of atropia.)

DR. BOUCHUT, PARIS.

460. ℞. Assafœtidæ, gr. xxxvj.
Digitalis pulveris, gr. iij.
Extracti valerianæ, gr. vij. M.
Divide into eighteen pills; one morning and evening, to remedy nervous palpitations of the heart. If the blood be impoverished, a ferruginous natural mineral water is a useful drink with the meals, mixed with wine.

RÉSUMÉ OF REMEDIES.

Aconite, in small doses, often controls nervous palpitations of the heart.

Belladonna, in the form of a plaster, frequently does good.

The Bromides are often of service. According to Dr ANGRISANI, of Bologna, bromide of potash has no effect on the muscular fibres or arteries of the heart, but is

the most beneficial drug for purely functional palpitation, intermittence, irregularity, etc. (*Dobell's Reports*, 1877.)

Cactus Grandiflora is extolled by eclectic practitioners as an unequaled heart tonic in functional disorders.

Camphor, in doses of gr. iij–xij daily, is recommended in tumultuous palpitation.

Cimicifuga, in palpitations with dilated or fatty heart, is particularly serviceable.

Digitalis is recommended by Prof. DA COSTA as more serviceable than aconite, in all cases of functional disorder of the heart.

Eucalyptus. In the palpitations frequent in women about the change of life, this is an efficient drug.

Hyoscyamus, in large doses, is especially indicated in functional disturbance of the heart arising from emotion. Dr. HARLEY recommends, in these cases, the hypodermic injection of gr. $\frac{1}{4}\frac{1}{8}$ of sulphate of hyoscyamia.

Morphia, hypodermically, is recommended by Prof. BARTHOLOW in violent palpitation produced by emotion or reflex irritation.

**Potassii Bromidum*, in doses of gr. v–x ter die, is reccommended by Dr. RUSSELL REYNOLDS in palpitation or fluttering of the heart, arising from disturbances of the vaso-motor system.

Senega, in combination with hyoscyamus and ammonia, often proves useful in *hysterical palpitations.*

Veratrum Viride is efficient to reduce the heart's action.

EXTERNAL MEASURES.

Emplastra of belladonna or of veratria are powerful local sedatives. A caoutchouc bag, filled with pounded ice, suspended around the neek so that it rests over the heart, is an admirable calmant.

Posture. In many instances, moderate palpitations, not depending on organic disease, may be almost immediately arrested by bending the head downward, and allowing the arms to hang pendant. The effect is still more rapidly produced by holding the breath a few seconds, while the body is in this bent position.

Pressure on the Carotids. This is an excellent measure for palpitations of a nervous character, not dependent on organic disease. The compression should be exercised on both carotid arteries at once, and maintained only for a few seconds. The relief should be instantaneous.

Pressure on the Pneumogastric. This measure has been urged by Dr. J. F. A. ADAMS, of Boston, as giving results very striking and suggestive. In one, violent nervous disturbance of the heart, with hysterical symptoms, came on a lady suffering from an attack of acute rheumatism. Compression was made, first of one vagus and afterwards of both. In a few minutes, the agitation had subsided, the heart's action became quieter and more regular, and, finally, all the nervous symptoms subsided. A few minutes afterwards, she sank into a steady sleep, and on awakening, was perfectly quiet, and the cardiac symptoms never re-appeared.

IRRITABLE HEART.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

This common condition of the heart, frequently the result of over-exertion, the demands of modern "high-pressure" life, the excessive consumption of meat and stimulants, etc., demands, in the first instance, *rest*, and the cessation of the habits which have been the exciting cause. The patients should lie down several hours daily. Digitalis, in doses of gtt. viij–x of the tincture, is the most useful drug. Where the impulse is forcible, however, aconite may be employed in place of digitalis. The dose is tinct. rad. aconit. (U. S. Ph.) ℥i–ij, ter die. In a few cases, this dose requires to be doubled. In cases of decided increase of the organ, aconite most shows its influence, No medicine can then be compared to it. It may be used steadily, in moderate doses, for months. *Belladonna* is an efficient agent, especially in instances of irregular action. Where no irregularity exists, but merely rapid action, it rarely shows itself of decided use. It may be advantageously combined with digitalis and iron. Opium has some quieting action, but only of a temporary character. Hypodermic injections of morphia are excellent to relieve the cardiac pain occasionally present. Tonics are often excellent adjuncts to the treatment, but are insufficient to control the disorder. Zinc, tincture of the chloride of iron, and gentian, may be mentioned. Where the attacks of palpitation are violent, Hoffman's anodyne and rest in the recumbent position are called for. Hypodermic injections of morphia and atropia relieve the pain. A belladonna plaster, persistently worn, is often, also, productive of good. Counter-irritation is valueless. The treatment is never a short one.

VALVULAR DISEASE OF THE HEART.

ALFRED L. LOOMIS, M. D., NEW YORK.

All valvular diseases require rest, the avoidance of strong emotions, a nutritious diet, and temperance. If anæmia is present, iron is called for. Digitalis should be employed carefully; "it should never be resorted to in aortic regurgitation while the hypertrophy compensates for the dilatation." Dr. LOOMIS thinks the best mode of administering it is by infusion.

The following tonic combination is commended by BARTHOLOW:

461. R. Pulveris digitalis, ℈ ij.
Ferri redacti,
Quiniæ sulphatis, āā ℈ j. M.
To make twenty pills. One to be taken two or three times a day.

There is considerable diversity of opinion in the books as to the use of digitalis in aortic cases, though in other forms of heart disease opinions are pretty well agreed. Some authorities would regard aortic insufficiency as a nearly absolute contra-indication to the use of the drug. Dr. G. W. BALFOUR regards it as the most valuable remedy in this lesion. Mr. THOMAS HAYDEN says: "Given as the tincture, and combined with iron and ether, I have rarely known digitalis to cause unpleasant symptoms; on the contrary, in numerous instances it has been followed by the most favorable and satisfactory results. I have in a few instances been under the necessity of suspending the use of digitalis, owing to threatened syncope; but in the cases referred to there was fatty degeneration of the heart, in some instances with, and in others without, disease of the aortic valves." Mr. HAYDEN's prescription is: 10 minims each of tincture of digitalis, tincture of chloride of iron, and spirits of nitric ether, in an ounce of infusion of quassia, thrice daily.

Dr. BALFOUR, however, will not allow the fatty degeneration to be the explanation, as he quotes a very good case in which the drug was most useful, and says, speaking of fatty heart, "I have never seen any reason to withhold digitalis, and have always hitherto been rewarded by considerable and well-marked improvement." He prefers the tincture, and orders ♏v–xxx every four hours, to be suspended if

there is any faltering of the pulse or nausea on movement. (*Edinburgh Medical Journal*, Feb., 1875.)

PROF. S. S. ROSENSTEIN, M. D., LEYDEN.

The indication in valvular disease is to develop and maintain compensatory action of the heart, and to moderate over-compensation. The diet should be nourishing, but not stimulating; coffee and tea should be weak; distilled liquors avoided; the exercise be moderate. Lukewarm baths followed by a cold rub-down attract the blood to the surface, and thus act favorably. Mentally, an "Olympian calm" should be warmly recommended. To allay the irritability of the cardiac muscle, cold to the præcordial region ranks first. The patient may carry, for a few hours daily, a gutta percha bag filled with ice suspended over the heart. Counter-irritants are injurious. The sovereign remedy in every stage of valvular disease is *digitalis*. Dr. R. has found this combination excellent:

462. ℞. Tinct. digitalis,
" valerian., āā f.℥j
" ferri acetat. æther., f.℥iss. M.

Twenty-five drops thrice daily.

(The ethereal tincture of the acetate of iron, G. Ph., is made as follows:

463. ℞. Liq. ferri acetat., 9 parts.
Alcoholis, 2 "
Ætheris acetic., 1 part. M.)

The patient should take this a fortnight, but no longer.

The swelling of the liver and gastric catarrh, which is apt to arise, may be met by the use of quassia, gentian, or rhubarb, and gentle aperients, like the saline mineral waters.

When dropsy occurs, which is usually first noticed about the ankles, acetate of potash is called for:

464. ℞. Potass. acetatis, ℥ij.
Tinct. ferri acetat. ether., ♏xlv.
Syrupi rheædos, f.℥v.
Aquam, ad f.℥vj. M.

A tablespoonful thrice daily.

Squill may be reckoned a tried diuretic in such cases.

465. ℞. Aceti scillæ, f.℥j.
Potassii bicarb., ad saturandum.
Aquæ cinnamom., f.℥viij. M.

One to two tablespoonfuls thrice daily.

Respiration of compressed air sometimes gives great though not lasting relief, especially in mitral affections with stenosis. Digitalis combined with quinia is often also of great value; it should be given in continued small doses.

In the fainting and dizzy fits so often exhibited by patients with aortic stenosis, the prompt application of volatile stimulants, as HOFFMAN'S anodyne, wine, or ether, is urgently necessary; the head should be placed low, while the body lies horizontal. The active congestion of the brain which occurs in insufficience of the aortic valves must be combated by sinapisms or dry cupping to the neck, or small bleedings over the mastoid process.

PROFESSOR GERHARDT.

This writer (*Deutsches Archiv für Klinische Medicin*, Bd. V.) has treated fibrinous deposits and valvular diseases of the left side of the heart by the *inhalation of alkaline solutions*. He uses:

466. ℞. Potassii bicarbonatis, gr. v–viij.
Aquæ bullientis, f. ℥ j. M.
For use as an inhalation.

He believes the frequent inhalation of this alkaline vapor prevents fibrinous deposits, and being carried by the pulmonary veins directly to the left side of the heart, may dissolve already existing vegetations. He claims good results from its employment.

DR. B. W. RICHARDSON, LONDON.

In cases of fibrinous deposit, especially *in extremis*, this physician recommends that depressing influences be at once withdrawn. The distress present suggests opium, but opium is fatal. The body should be placed in absolute rest, concentrated food should be given, the temperature should be 60°–70°, and the body kept warm by external dry applications. Internally he administers concentrated food and liquor ammoniæ, ♏ x, in ice water every hour, with potassii iodidi, gr. v, every alternate hour. This treatment has been followed by a degree of success he had never anticipated.

PROFESSOR SÉE, PARIS.

This distinguished teacher recommends (*Union Medicale*, May, 1875,) the following combined treatment in the œdema and anasarca

which so frequently complicate cardiac affections. He claims to have effected their speedy disappearance:

467. ℞. Extracti scillæ, gr. xv.
Pulv. rad. scillæ, gr. iss. M.
For ten pills. Six to ten of these a day.

Also,

468. ℞. Potassii bromidi, ʒj.
This amount to be taken daily, in divided doses.

For continuous cardiac dyspnœa he has seen much benefit from iodide of potassium:

469. ℞. Potassii iodidi, gr. xxx.
Chloral hydratis, ʒj.
Gum julep, f.ʒ iv. M.
Take as required every two hours during the day.

ROBERT J. GRAVES, M. D., DUBLIN.

470. ℞. Potassii nitratis, ʒj-ij.
Tincturæ digitalis, ♏xxv.
Tincturæ hyoscyami, ♏xv.
Misturæ amygdalæ, f.ʒ x. M.
A tablespoonful from hour to hour in the œdema which accompanies disease of the heart.

DR. BOUCHUT, PARIS.

471. ℞. Digitalis pulveris, ℈ iv.
Morphiæ muriatis, gr. v.
Camphoræ pulveris, ʒ ss.
Confectionis rosæ, q. s. M.
Divide into forty pills. One to be administered morning and evening, in organic affections of the heart.

472. ℞. Tincturæ digitalis, f.ʒ ivss.
Vini colchici, f.ʒ iss.
Potassii iodidi, ʒ ijss.
Syrupi sarsaparillæ, f.ʒ iss.
Aquæ destillatæ, f.ʒ ijss. M.
A teaspoonful three or four times a day in the anasarca of heart disease. The patient should be purged every third day with compound jalap powder.

473. ℞. Tincturæ aloes, f.ʒj,
Tincturæ scillæ,
Tincturæ digitalis, āā ♏xv. M.
For one dose every second or third day, tor the dropsies of heart disease.

RÉSUMÉ OF REMEDIES.

Aconite is contra-indicated or to be used with the utmost caution, in organic disease, where the power or force of the heart is impaired.

Arseniosum Acidum. Arsenic is a valuable cardiac stimulant, alone and as an adjunct to digitalis where there is a failure of compensation.

Belladonna is recommended by Dr. A. T. H. WATERS in form of plaster or lotion over the heart, in palpitation combined with valvular disease, the patient at the same time being kept at rest in bed; rest alone is often efficacious. In severe cases belladonna is superior to digitalis (which see.)

Casca Bark is thought by Dr. T. LAUDER BRUNTON to be a more powerful heart tonic than digitalis, and to be capable of relieving cases of advanced mitral disease where digitalis fails. (*British Medical Journal*, March, 1877.)

**Digitalis* is recommended by Dr. A. T. H. WATERS in valvular disease, especially when there is hypertrophy of the heart. Dr. E. MACKEY (*British Medical Journal*, May 31st and July 11th, 1868,) thinks that neither *mitral regurgitation* nor *mitral obstruction* contra-indicates the use of digitalis, and gives numerous cases in which it was employed with advantage; but he regards its employment in *aortic regurgitation* and in *fatty degeneration* as contra-indicated or of doubtful safety. In any case where the heart's action is very feeble, Dr. M. considers that the commencing dose of the tincture should be ♏v–x every four or six hours; this dose may be increased to ♏xv–xx, or even ♏xxx, with benefit; but, as a general rule, such a dose as ♏xxx should not be repeated more than twice in the twenty-four hours. An equivalent dose is f.℥ss of the fresh infusion, or gr. j of the powdered leaves. The patient, before taking such a dose, must be kept recumbent at least half an hour, and kept so for two hours after. Dr. M. hesitates to prescribe a larger dose than ♏xv of the tincture to any patient following his occupation, and believes that half-drachm doses of the tincture, repeated several times at short intervals, especially in the upright position, may dangerously interfere with the circulation, whether by over-stimulation or partial paresis. But, given in the manner directed, no accumulative action has been observed.

Ferri Chloridi Tinctura is recommended in chronic valvular disease by various writers; given in long-continued small doses, as directed for fatty degeneration. (P. 241.)

**Morphia* has been employed hypodermically by Dr. CLIFFORD ALLBUT (*Practitioner*, December, 1869,) with marked advantage in diseases of the heart. He gives the injection in the evening, and enjoins perfect quiet afterward. His commencing dose is gr. $\frac{1}{8}$ or $\frac{1}{6}$ of the muriate, increased, in ordinary cases, to gr. $\frac{1}{4}$ for an adult. He finds it valuable in *mitral regurgitation*, but less valuable in mitral obstruction and in disease of the aortic valves; but in aortic disease, when the heart is big and pumping, it gives much ease. The urine, however, should always be examined, and the morphia given with caution or withheld, if albumen be found. Prof. BARTHOLOW also recommends morphia, hypodermically, in *mitral disease*, but is opposed to its employment in narrowing an obstruction of the aortic orifice.

**Senega*, combined with some other diuretic, is recommended by Dr. BARLOW in valvular disease of the heart, to promote the action of the kidneys and relieve the palpitation, especially the palpitation arising from aortic disease. He employs the following formula:

474. ℞. Spiritûs ætheris compositi, f. ℥ ij.
Tincturæ hyoscyami, f. ℥ iss.
Decocti senegæ, f. ℥ iij.
Misturam camphoræ, q. s., ad f. ℥ iv. M.
Take one fourth thrice daily.

Veratrum Viride is often employed with benefit to the pulse.

Zinci Sulphas is favorably spoken of by Dr. BARLOW in *mitral disease*. He employs:

475. ℞. Zinci sulphatis, gr. iij.
Extracti lupuli, gr. vj. M.
Make six pills. Take one thrice daily. The dose of the zinc should be gradually increased to gr. iij. When there is much palpitation, he advises its combination with camphor.

476. ℞. Zinci sulphatis, gr. j–iij.
Camphoræ, gr. j.
Extracti hyoscyami, gr. ij. M.
Make into pills. Take thrice daily. When there is much irritability of the stomach, the iodide should be substituted for the sulphate.

Diuretics are found beneficial by Dr. HOPE, in every stage of valvular disease of the heart. They draw off the serous portions of the blood, diminish the quantity without deteriorating the quality of that fluid, and thus relieve palpitation and dyspnœa, and obviate infiltration, without materially reducing the strength.

IV. DISEASES OF THE DIGESTIVE SYSTEM.*

Anorexia—Biliary Calculi—Cholera Asiatica—Colic (Flatulence, Ileus, Colica Pictonum)—Constipation, Habitual—Diarrhœa (acute, chronic)—Dysentery (acute, chronic)—Dyspepsia—Gastritis and Gastro-Enteritis—Gastric Ulcer—Hematemesis—Hepatitis (acute, chronic)—Intestinal Worms—Jaundice—Liver: Functional Disorders of—Pyrosis—Vomiting.

ANOREXIA.

Loss of appetite is a common symptom in disease, and must be met by the indications of each case.

DR. SYDNEY RINGER, LONDON.

In loss of appetite and digestive power from fatigue, a glass of wine or a little brandy and water before food is useful; as also in indigestion during convalescence from acute disease.

Most of the "bitters," as calumba, gentian, quassia, chiretta, cascarilla, etc., are popular agents to increase the appetite. They exert a slight irritant action on the stomach, and in this indirect way assist both appetite and digestion. They should be taken a short time before food, as their effect soon wears off.

Cinchona or quinine is an excellent sharpener of the appetite, and also assists digestion. It is particularly useful in the case of elderly people and inhabitants of towns, who have been "run down" by confinement, sedentary occupations and impure air.

DR. N. GALLOIS, PARIS.

477.	℞.	Tincturæ nucis vomicæ,	gtt. v.	
		Extracti gentianæ,	gr. xv.	
		Syrupi aurantii corticis,	f. ℥ iss.	
		Vini cinchonæ,	f. ℥ v.	M.

One-half to be taken half an hour before each of the two principal meals, in order to awaken the appetite.

*Note.—Diseases of the Teeth, Oral Cavity and Pharynx, including Tonsillitis, Pharyngitis, Caries, Odontalgia, Goitre, etc., are treated of in Napheys' *Surgical Therapeutics*, Chap. X.

478. ℞. Rhei, gr. xxxv.
Aloës socotrinæ, gr. xxv.
Myrrhæ,
Saponis, āā ℈ j.
Spiritûs menthæ piperitæ, ♏iij.
Extracti taraxaci, ℈ ij. M.

Divide into forty-five pills; and order from one to three at a dose, as laxatives, and to stimulate the functions of the stomach.

479. ℞. Aloës socotrinæ, gr. xvj.
Ipecacuanhæ, gr. vijss.
Zingiberis, gr. xxv.
Syrupi, q. s. M.

Divide into sixteen pills; order one a day, before dinner, to stimulate the appetite and regulate the system.

480. ℞. Fel bovini purificati, ℈ iv.
Ferri carbonatis, ʒ ss.
Rhei,
Extracti gentianæ, āā ℈ iv. M.

Divide into one hundred and twenty pills; order six or ten a day, to combat a want of appetite.

DR. REECE, FRANCE.

481. ℞. Sodii carbonatis exsiccatæ, ℈ j.
Extracti gentianæ, ʒ ij.
Zingiberis, gr. xij. M.

Divide into thirty-six pills, and order two morning and evening, as absorbents and stomachics.

PROF. FONSSAGRIVES, MONTPELLIER, FRANCE.

482. ℞. Extracti cinchonæ flavæ, ʒ ss.
Tincturæ nucis vomicæ, gtt. v.
Syrupi aurantii corticis, f. ʒ iss.
Claret wine, f. ʒ viij. M.

Take several tablespoonfuls at the commencement of the meals, to stimulate the appetite.

LONDON HOSPITAL.

483. ℞. Pulveris anthemidis, ℥ ss.
Pulveris rhei,
Pulveris zingiberis, āā ℥ ij. M.

Divide into sixteen powders. Take one a day, an hour before or after meals, to stimulate the appetite and facilitate digestion.

DR. HUSS, FRANCE.

484. ℞. Pulveris nucis vomicæ, gr. xv–xx.
Pulveris quassiæ,
Cretæ præparatæ, āā ʒ ss. M.

Divide into twenty powders, and order one three times a day, half an hour before each meal, to stimulate the appetite and favor digestion.

BILIARY CALCULUS.

DR. M. SCHIFF, GENEVA.

The *cholinate of soda* is recommended (*L'Imparziale*, Feb. 16th, 1873,) by our author in the treatment of biliary calculus. He says that biliary calculi are generally produced, not in consequence of an excessive formation of cholesterine, but because there is a deficiency of its solvents in the bile—the cholinates and cholates of soda and potash. He suggests the administration of these salts in cases of gall-stone; not to remove the cholesterine already deposited, which he does not think possible, but to hold it in solution and prevent further deposit. It has been proved that bile or a solution of biliary salts, taken into the stomach or intestine, is conveyed to the liver, and that the bile discharged is richer and more dense. He advises that the cholinate of soda should be given in doses of 7½ grains twice a day, until symptoms of disturbance of digestion or of circulation are noticed. Saturation of the system with the medicine is indicated by irregularity of the pulse, which becomes very slow during rest, and is sensibly accelerated by movement of the body or by slight excitement. When this occurs, the medicine should not be interrupted, but the dose must be diminished. No good effect is to be expected unless the remedy be continuously administered for some time.

DR. JOHN A. OCTERLONY, KENTUCKY.

This practitioner records his observations in thirty-five cases of chole-lithiasis. (*Transactions of the Kentucky State Medical Society*, 1877.) The indications are two: first, to relieve the pain during the attack; and, secondly, to prevent its recurrence.

1. For the immediate relief of the patient hypodermic injections of morphia are most appropriate. Opiates should never be given by the mouth nor in solid form for the relief of gall-stone colic. In some cases where the pain is so atrocious that morphia seems to be inadequate, chloroform or ether may be given by inhalation. *Chloroform* has also been given internally, f. ℥j every hour, while the pain lasted, and as much after each meal for five days longer. It is asserted to melt away gall-stones of considerable size. Such large doses of chlor-

oform may, however, produce alarming symptoms, and must be used with caution.

The general prolonged hot bath is sometimes of signal benefit. Surrounding the patient's waist with a sheet wrung out of hot water is a good substitute. Leeches to the side are sometimes effectual when other measures fail.

Emetics ought to be rigorously proscribed.

2. To prevent the recurrence of the paroxysm, any gall-stones remaining in the gall-bladder must be dissolved, and their formation prevented.

The *diet* must be carefully watched. Highly-seasoned food, malt liquors, fats, sweets, and rich viands must be forbidden. The meals should be *at short intervals*, three or four a day. As a remedial measure to prevent the formation of the stones, Dr. BUCKLER has proposed succinic acid and peroxide of iron, on account of the large amount of oxygen contained in both of them, which is almost wanting in cholesterine. These can be combined in the *hydrated succinate of peroxide of iron*, and should be taken continuously for six months according to the following formula:

485. ℞. Hydrated succinate of peroxide of iron, ℥ iss.
Distilled water, ℥ vjss. M.
A teaspoonful after each meal.

In almost every case Dr. OCTERLONY has used this salt with complete success. (Dr. BUCKLER's article is in the *American Journal of the Medical Sciences*, July, 1867.)

Carlsbad, Vichy, or Marienbad waters, and their counterparts in this country, are useful.

A remedy much employed and with good results by the late Dr. LEWIS ROGERS, of Louisville, is:

486. ℞. Ammoniæ muriatis,
Extracti taraxaci, āā ℥ ss.
Aquæ, f. ℥ vj. M.
A dessertspoonful three times a day.

DR. JAMES E. JACKSON, PENNSYLVANIA.

This practitioner states that the following combination forms the most active solvent for gall-stones, biliary secretions, etc., he has ever tried. In connection with its use the patient should avoid meat and fats, and confine himself to a milk and vegetable diet:

487. ℞. Chloroformi,
Ætheris sulphurici, āā f.℥ ss.
Olei terebinthinæ, f.℥ j.
Sacchari albi, ℥ ij.
Mucilaginis acaciæ, f.℥ ij. M.
A teaspoonful three times a day.

DR. DURAND, PARIS.

488. ℞. Olei terebinthinæ, f.℥ iij.
Ætheris sulphurici, f.℥ ij. M.
Half a teaspoonful night and morning.

This is the celebrated "solvent" of DURAND, endorsed by TROUSSEAU. It has unquestionable utility as a preventive of the recurrence of an attack. Alkaline drinks, such as Vichy water, or, as Dr. PROUT recommends, bicarbonate of soda, ℥ ij, or ℥ ij in warm water Oj, aid its action.

RÉSUMÉ OF REMEDIES.

**Belladonna.* Dr. MURCHISON highly recommends the extract of belladonna, in ½-grain doses, every two or three hours, in the passage of gall-stones.

Chloral is frequently employed with advantage, on account of its producing muscular relaxation.

**Chloroform* by the mouth, or in the form of inhalation, relieves pain, diminishes spasm, and does not interfere with the onward propulsion of the stone. It is also believed to prevent the formation of stones. D. BOUCHUT gives:

489. ℞. Chloroformi, f.℥ ijss.
Alcoholis diluti, f.℥ ijss.
Syrupi acaciæ, f.℥ viij. M.
A small wineglassful thrice daily, to persons subject to hepatic colic. Abstinence from fats, oils, fatty food, and strong wine.

Dr. TOURASSE prescribes:

490. ℞. Chloroformi, f.℥ ss.
Olei amygdalæ dulcis, f.℥ j.
Syrupi acaciæ, f.℥ iss. M.
To be well shaken. A tablespoonful every quarter or half hour, in hepatic colic.

Ether, internally, has been recommended on account of its power of dissolving cholesterine, as well as because of its anti-spasmodic properties.

**Opium* in full doses (gr. ij or gtt. xl of laudanum) by the mouth or rectum, repeated in half an hour, if necessary, generally relieves the intense pain attending the passage of biliary calculi better than any other remedy. It should be combined with the use of the hot-bath. The administration of ether or chloroform may also be advantageously resorted to. The *hypodermic injection of morphia* (gr. ¼), repeated, if necessary, is particulary useful from the rapidity of its action.

Podophyllin, gr. $\frac{1}{6}$ daily, is recommended by Prof. BUFALINI. It should be continued for many months.

Sodii Phosphas, in doses of ℈j–℥j, administered for several months, before each meal, has been found by BARTHOLOW to be extremely efficacious in preventing the recurrence of attacks of hepatic colic. It is believed to act by relieving the catarrh of the duodenum which is present in most of these cases, and, by transference to the gall-bladder, forms a nucleus of mucus and bile, around which the cholesterine crystallizes.

Saline Mineral Waters, such as Carlsbad, especially the Sprudel Spring there, are extremely useful, if taken steadily, and supported by a strict regimen. All fat, butter, cheese, rich meats, spices, salt fish and meat, strong tea, coffee, and alcoholic beverages, must be strictly excluded. "Sprudel Salts" may be used instead of the natural water.

Nitro-Muriatic Acid Baths are a valuable remedy. The right hypochondrium may be repeatedly bathed with a solution of the acid, f.℥iij to a gallon of water, and the whole person rubbed down with it. Or a flannel roller, ten or twelve inches wide, and long enough to encircle the body twice, may be moistened with the fluid and worn around the waist.

CHOLERA ASIATICA.

THE MEDICAL STAFF, U. S. ARMY.

The classical work on *The Cholera Epidemic of* 1873, *in the United States*, mainly prepared by Dr. ELY MCCLELLAN, U. S. A., contains the well-digested experience of practitioners during the last cholera epidemic in this country. We quote some of the most successful measures adopted.

Dr. R. W. MITCHELL, of Memphis, Tenn., writes: "When satisfied that I had cholera to contend with, as indicated by rice-water discharges, vomiting, cramps, and shrinkage of extremities, I ceased medication by the stomach, and used the formula given, hypodermically:

"491. ℞.	Acidi sulphurici,	℥ ss.	
	Morphiæ sulphat.,	gr. $\frac{1}{2}$.	
	Spiritûs vini gallici,	℥ iss.	
	Aquæ destillatæ,	℥ iij.	M.

"The above was injected under the skin of the arms, legs, and over the stomach, every hour until the symptoms of the disease were relieved."

Dr. G. B. THURSTON, of Memphis, Tenn., writes: "The general

treatment that I adopted was about as follows: Calomel and opium in alterative doses, say in two of the former to one of the latter, repeated every hour for several hours. In conjunction with this, used the following:

"492. ℞.	Extracti cannabis indicæ,		gr. xvj.	
	Camphoræ,		ʒss.	
	Chloroformi,		ʒss.	
	Olei terebinthinæ,		ʒij.	
	Mucilag. acaciæ,			
	Syrupi simplicis,	āā	ʒss.	
	Aquæ cinnamomi,		ʒj.	M.

Dose, a teaspoonful every one or two hours."

Dr. J. T. Jones, of Nashville, Tenn., reports that, in the cold stage of cholera, he has used *creasote* with greater success than any other article of the materia medica, and suggests the following formula:

493. ℞.	Creasoti,		gtt. j.	
	Aquæ camphoræ,			
	Infusi gentianæ compositi,	āā	ʒvj.	M.

At a dose, and repeated every two hours.

Dr. S. T. Chandler, of Campbellsville, Ky., who treated, during the epidemic of cholera in 1854, some sixty to seventy cases of the disease in its various stages, records his experience as having been largely in favor of the use of *dilute sulphuric acid*, in full doses, and repeated every fifteen to thirty minutes, until the vomiting and purging are arrested. In the epidemic of the year 1873, the same plan of treatment was adopted, and with like results. "The acid relieves the nausea, arrests the vomiting like a charm, and gradually the dejections are stopped."

Dr. McClellan adds, that the necessity of instituting treatment at the earliest moment after the occurrence of a diarrhœa, was most generally recognized throughout the area of infection. Whenever physicians, during the progress of the epidemic, ceased the attempt to diagnose between cholera, cholera-morbus and diarrhœa, and treated all cases that occurred as cases of cholera, the lists of mortality were reduced; while, on the other hand, increasing mortality was shown whenever too great reliance was placed upon diagnostic powers.

The evidence is conclusive that the exhibition of opium, followed by alterative doses of calomel, and absolute rest in the recumbent posture, almost invariably arrested the disease when in the premonitory stage. In the advanced stages, the entire range of the pharmacopœia

seems to have been brought into use, with no better results than had been obtained in previous epidemics.

The experience of the writer is strongly corroborative of the beneficial results which may be obtained from the use of *sulphate of iron* and *dilute sulphuric acid* as prophylactics during an epidemic of cholera; and, further, that the most successful treatment of the disease is to be found only in all that is implied in the word sanation.

Dr. JOHN M. WOODWORTH, Supervising Surgeon U. S. Marine Hospital Service, records the experience of his department in the following language: "Beginning with the year 1814, the cholera literature down to the present time abounds in proofs, clinical, physiological, pathological and meteorological, of the efficacy of *sulphuric acid;* and there can be no doubt, despite the dicta of the last International Sanitary Conference, that we possess in the mineral acids a certain means of prophylaxis against cholera. The lessons of the epidemic of 1873 point strongly to the value of sulphuric acid even as a therapeutic agent against the disease. According to Dr. MCCLELLAN, mortality among cholera patients treated with acids was only eight per cent., while the lowest mortality rate where other remedies were used was twenty-three per cent., and the highest fifty-nine per cent."

DR. WILLIAM STEVENS, LONDON.

This author, in two epidemics, claims to have had very successful results from the *saline* treatment, in his hospital and prison patients. Cases presenting premonitory symptoms—diarrhœa and vomiting—were removed into an observation ward, where an even temperature was constantly maintained. A seidlitz powder was immediately administered; if sinking was felt, without purging, three or four teaspoonfuls of Epsom salts were added to the powder. On these agents acting, plenty of thin beef tea, well seasoned with salt, was given; if there was any pain, a sinapism was applied to the gastric region; and thirst was relieved with seltzer water, soda, or pure water *ad libitum*. Most of the cases were thus cured. If, however, cramps, coldness or shrinking of the pulse came on, the patients were considered as cholera cases in the second degree. The following was then administered:

494. ℞. Sodii chloridi, ℥ ij.
Sodii carbonatis, ℥ ij.
Potassii chloratis, ℈ ij.
Aquæ, f. ℥ vj. M.

Two tablespoonfuls in water about every half-hour.

If there was much irritability of stomach, a large sinapism was applied; if much heat or burning pain, an additional quantity of carbonate of soda was added to the mixture. In cases in the stage of collapse, a strong solution of the same salts, dissolved in hot water (100° F.) was thrown into the bowels, and repeated every two or three hours. Sinapisms were also applied to the stomach, between the shoulders, etc.; and in the cold stage, frictions with warm towels were used. A pure air for the patient to breathe was considered of the greatest importance.

In mild cases, the "wet-sheet-envelope" will favor reaction, but it has only proved mischievous in severe instances. When the vomiting is severe, or the thirst insatiable, nothing gives more relief than permitting ice to be continually sucked. The patient is also to be isolated as far as possible. He is to have plenty of fresh air; and care must be taken that the water he drinks is uncontaminated—particularly, that it has not been drawn from a well near any sewer. Moreover, his excreta should be received in a pan containing a disinfecting fluid, and then at once thrown away.

The greatest caution will subsequently be required for many days as to diet; not a few deaths have occurred from the too early use of animal food. As a rule, broths and farinaceous substances only should be allowed, without any solids whatever, until the renal secretion has been fully re-established, and all the symptoms have vanished.

DR. FLEMING, QUEEN'S HOSPITAL, BIRMINGHAM.

495. ℞.	Plumbi acetatis,	gr. xxiv.	
	Liquoris morphiæ acetatis,	f. ʒj.	
	Acidi acetici diluti,	♏.xij.	
	Aquæ destillatæ,	f. ℥ vj.	M.

A tablespoonful every two hours (an hour before or an hour after food is taken) in a tablespoonful of water; beef tea and milk, alternately, every four hours; warm negus in moderation.

The value of acetate of lead and opium in diarrhœa is well known. Dr. FLEMING calls attention to the *mode of administration*. The astringent action of both lead and morphia is in consequence of their absorption and conveyance in the blood to the affected part. Hence, the marked advantage of giving them in a thorough solution in distilled water, which promotes their passage into the blood. This is further secured by giving the medicine on an empty stomach before meals, and so avoiding, as far as possible, precipitation of the lead by contact with the gastric fluids. In the ordinary lead and opium pill,

more or less lead is probably converted into the meconate; or the pill dissolving slowly in the stomach, in contact with the gastric secretions, the lead runs much risk of conversion into the insoluble chloride. Our author has adopted this mode of administration for many years, and speaks strongly of its efficiency. In the diarrhœa of children the same mixture, according to the following formula, gives most valuable results:

496. ℞.	Plumbi acetatis,	gr. xij.	
	Liquoris morphiæ acetatis,	♏xij.	
	Acidi acetici diluti,	f.℥j.	
	Aquæ destillatæ,	f.℥iij.	M.

A teaspoonful every five, six or eight hours, to a child one year of age.

WILLIAM SEDGWICK, M. R. C. S., ETC., LONDON.

Our author strongly recommends (the *Lancet*, August 19th, 1871,) *dilute phosphoric acid* in half-drachm doses, combined with syrup of orange, and largely diluted with ice-water.

In cases of choleraic diarrhœa, and in the early stage of confirmed cholera, this remedy appears to be capable of checking the progress of the disease with greater certainty than sulphuric acid.

GEORGE JOHNSON, M. D., F. R. C. P.

Professor of Medicine in King's College, London; Physician to King's College Hospital, etc. In the treatment of cholera and choleraic diarrhœa, which is, in fact, cholera in a mild form, the main principle to bear in mind is, that the discharges are as essentially curative as is the eruption of small-pox. The discharges are not to be abruptly stopped by opiates. Experience has abundantly proved that this is a pernicious practice. Neither are they permitted to accumulate in the alimentary canal. There is one remedy which is almost universally applicable in all forms and stages of the disease, and that is an abundant supply of *cold water*, to flush the intestinal sewer and to wash out the poisonous discharges. A copious imbibition of pure cold water will suffice for the cure of most curable cases.

Palpation and percussion of the abdomen reveal the fact that there occurs not unfrequently a painful and sometimes a paralyzing over-distention of the bowel by rapidly effused morbid secretion. This, if not promptly relieved, may even go to the extent of causing a fatal obstruction. More especially is this likely to happen when the sensibility of the bowel has been deadened by opium. The plan to prevent

and to remove this accumulation is to give some quickly-acting yet unirritating evacuant dose. For this purpose, *castor oil* is, on the whole, better suited than any other remedy. He directs, as early in the premonitory diarrhœa as possible, a tablespoonful of castor oil in a mixture of orange or lemon juice and water, or cold water, or other convenient vehicle. If this be vomited, it should be again given, and the patient directed to lie still and take no more liquid for half an hour, by which time the oil will have passed from the stomach into the bowels. Within an hour or two, the oil will usually have acted freely, when a tablespoonful of brandy, in thin arrowroot or gruel, is given; and if there be much feeling of irritation, with a sense of sinking, gtt. v–x of tincture of opium, in cold water. In this manner, most cases of choleraic diarrhœa are promptly arrested. Rhubarb (gr. xv of the powder, or f. 3 ss of the tincture) may be employed, if objections exist to castor oil. If vomiting be present, it should be encouraged by copious draughts of tepid water; and if nausea exists without vomiting, especially if the stomach is supposed to contain undigested or unwholesome food, or morbid secretions, an emetic is advised (gr. xx of ipecacuanha, or a teaspoonful of mustard, or a tablespoonful of common salt.)

The time to give *opium*, if at all, is in small doses, to soothe the bowel, after the expulsion of the poisonous secretions. Opiates are useless, or even dangerous, when the blood is poisoned, or when the bowel contains offensive morbid secretions. Opiates, in the early stages of diarrhœa and cholera, would be more frequently and decidedly injurious, were it not for the fact that their absorption is prevented by the rapid current of liquid which is being passed from the blood into the alimentary canal; therefore, they are quickly expelled, together with the morbid secretions, and they are powerless to arrest the discharges. (*The British Medical Journal*, August 19th, 1871.)

Sir THOMAS WATSON, Bart., M. D., etc., states, in the last edition of his *Practice*, that he firmly believes that the doctrines advanced by Dr. JOHNSON are well founded, and approves his rules of treatment. No doubt the true indication of treatment is to stop the flow as soon as possible; but this may sometimes be best affected (as also in crapulous diarrhœa, and in the summer cholera of Sydenham,) by carrying off the offending matter.

JOHN MURRAY, M. D.,

Inspector-General of Hospitals, Indian Medical Service. When irri-

tating or indigestible food in the bowels is the cause, as is frequently the case, of the early diarrhœa, it should be removed, if it has not previously been discharged in the evacuations, and a recurrence of the looseness guarded against. For this purpose, our author recommends the following cholera pill:

497. ℞. Pulveris opii, gr. j.
Piperis, gr. ij.
Assafœtidæ, gr. iij. M.
To make one pill.

It appears to check the looseness and stimulate the secretions, and does no harm if needlessly exhibited. It should be repeated should the looseness continue. It will cure most cases, and in all, restrain the symptoms until regular medical advice can be procured. It may be distributed to every house, and be available in a few minutes, whereas, the delay of a few hours may allow the disease to advance beyond control. These pills have been distributed in tens of thousands, in the towns and villages of India, with most satisfactory results. Some surgeons prefer red to black pepper, and others add camphor to the opium and assafœtida, and report favorably of the combination. They are distributed in the dispensaries and placed in the charge of the police in India. (*The British Medical Journal*, August 12th, 1871.)

In a discussion at the thirty-ninth annual meeting of the British Medical Association, between Drs. JOHN MURRAY and GEORGE JOHNSON, Dr. M. stated that Dr. JOHNSON seemed to confound elimination with purgation, and that nature was best assisted by restraining the further advance of the disease, of which the most dangerous symptom is looseness, whether naturally induced by indigestion, by improper food, or by purgative remedies. Dr. JOHNSON said that the main difference between Dr. M. and himself was with regard to the treatment of the early stage of cholera, Dr. M. considering evacuants dangerous and opiates safe, while he (Dr. J.) held an opposite opinion with regard to both classes of remedies. (*The British Medical Journal*, August 26th, 1871.)

DR. EDWARD R. SQUIBB, BROOKLYN.

498. ℞. Tincture of opium, depurated,
Spirit of camphor,
Tincture of capsicum, āā f. ℥ j.
Chloroform purified, f. ℥ iij.
Alcohol, 95 per cent., q. s. to f. ℥ v. M.

Each fluid drachm, or teaspoonful, contains about one hundred drops, consisting of twelve minims of each of the first three ingredients, and four and a half minims, or eighteen drops, of the chloroform. Dose, for persons over eighteen years of age, a teaspoonful; for persons fourteen to eighteen years of age, a small teaspoonful; for persons ten to fourteen years of age, half a teaspoonful; for persons six to ten years of age, thirty drops; for persons two to six years of age, ten to thirty drops; for infants, one to ten drops, according to age. To be taken in water.

In time of epidemic cholera or diarrhœa, when any person has two movements of the bowels more than natural within twenty-four hours, the second one should be followed by a dose of this mixture; the dose to be repeated after every movement that follows. If the movements increase in frequency, or in copiousness, after the second dose of the medicine has been taken, a physician should be sent for at once, and a double dose be taken after each movement, until he arrives. Immediately after taking the first dose, the person should go to bed, and remain there for twelve hours after the diarrhœa has entirely ceased.

Made a little more dilute, to adapt it better to extended popular use, it was largely applied in the last epidemic of cholera by the Metropolitan Board of Health of New York, and by the Boards of Health of some other cities, and appears to have accomplished all that could be reasonably expected from any arbitrary formula.

HAMLIN'S CHOLERA MIXTURE.

No. 1.

499. ℞. Tincture of opium, Tincture of camphor, āā 1 part. Tincture of rhubarb, 2 parts. M.

No. 2.

500. ℞. Tincture of opium, Tincture of capsicum, Tincture of cardamom. co., Ginger, āā equal parts. M.

RUSCHENBERGER'S CHOLERA MIXTURE.

501. ℞. Tincture of ginger, Tincture of capsicum, Tincture of peppermint, Tincture of opium, āā equal parts. M.

CHLORODYNE.

502. ℞. Sulphate of morphia, grs. lxxx. Hydrocyanic acid. dil., Glycerine, Caramel, āā f.℥ss. Extr. Indian hemp, ℈ij. Oil of peppermint, ℥ss. Oleo-resin of capsicum, gtt. xv. Chloroform. pur., f.℥vj. Alcohol, f.℥j. M.

DR. JOHN SULLIVAN, M. D., BRITISH INDIA.

In his recent work on *The Endemic Diseases of Tropical Climates*, (London, 1877,) this writer altogether rejects the treatment by elimination. The plan he has found most successful is: First, to prescribe complete cessation from all labor and fatigue out of doors, and the adoption of the horizontal position on the very first appearance of diarrhœa. Secondly, arrest of diarrhœa, "whether it exists in the preliminary state, or whether it takes the form of rice-water evacuations;" and for this purpose he prefers the employment of opium or laudanum, by means of suppositories and enemata. And, thirdly, he endeavors to supply the loss of fluid, by giving *ad libitum* "iced or cold water or tea;" and occasionally some moderately astringent cordial.

RÉSUMÉ OF REMEDIES.

Ammoniæ Aquæ, when inhaled or taken internally, largely diluted, is a useful stimulant and restorative in the collapse of cholera.

Argenti Nitras has been recommended injected into the colon, by means of a long, flexible tube.

The following solution is thus injected:

503. ℞. Argenti nitratis, gr. xvj.
Aquæ destillatæ, f.℥ iv. M.

Ten minutes afterward the following enema is to be administered.

504. ℞. Tincturæ opii, f.℥ iv.
Gruel, f.℥ vj. M.

Dr. WARING considers this treatment worthy of trial. In an epidemic of cholera at Assam, in 1853, Dr. BARRY used nitrate of silver internally with great success, giving one grain after each stool.

Atropiæ Sulphas, hypodermically, in dose gr. $\frac{1}{100}$–$\frac{1}{40}$, is recommended by Dr. HARLEY as one of the most appropriate and useful means of resuscitation in the collapse of cholera. It stands at the head of all our stimulants in such cases, for there is no medicine which approaches belladonna in its simple, direct, immediate, and powerful influence in exalting the force and rapidity of the heart's action.

**Camphor* is recommended by Dr. SYDNEY RINGER, from personal experience. He gives six drops of a strong alcoholic solution of camphor every ten minutes, until the symptoms have abated, and then less frequently. By this treatment, he generally at once controlled the vomiting and diarrhœa, and often altogether checked them, removed the cramps, and restored warmth to the extremities. An Italian physician, Dr. RUBINI, of Naples, is said to have treated with success nearly six hundred patients by a solution of camphor in alcohol at 60° over proof. The commencing dose was gtt. iv, every five

minutes (in severe cases, gtt. xx, or more,) persevered in until reaction set in, the patient being well wrapped up in blankets. It should be given in sugar, and not in water, as in the latter the camphor solidifies and loses its power.

Cannabis Indica has been highly spoken of, ♏x–xxx of the tincture being administered in repeated doses.

Carbo Ligni, in drachm doses, has been employed with repeated benefit.

Carbolic Acid has, it is stated, (*Medical Press*, January 22d, 1868,) proved successful.

**Chloroform*, in doses of ♏v–viij every hour or half-hour, often arrests the vomiting and relieves the spasms and cramps in the early stages of cholera. When the vomiting is excessive, a little chloroform, on lint, placed over the epigastrium and covered with oiled silk or gutta percha, will frequently relieve it. Chloroform liniment, alone or with turpentine, diligently used, is very effectual against the spasms and cramps. The spasms are also quickly relieved by chloroform inhalations, stopped short of complete anæsthesia. In giving chloroform internally, some prefer to combine it with the carbonated alkalies, soda or potash (grs. xl–lx) in solution; others, with the oil of turpentine (♏xx–xxx.) Dr. T. M. Lowndes, of the Bombay army, advises (*British Medical Journal*, August 29th, 1868,) the following formula, which he has used for years in the treatment of choleraic diarrhœa, with the best results:

505.	℞.	Chloroformi,	♏xv–xx.	
		Tincturæ opii	♏v–xv.	
		Spiritûs vini,	f.℥j.	
		Aquæ,	f.℥j.	M.

Chloroform, as a remedy in cholera, has the advantage that, being very volatile, it does not, like calomel and solid opium, accumulate in the stomach, and thus produce serious effects when reaction is established.

Hydrargyri Chloridum Mite has, as Dr. Waring remarks, been given in cholera for upward of half a century, in every variety and stage of the disease, in every gradation of dose, from one grain to sixty, in almost every possible form of combination, with the view, by turns, of obtaining its purgative, or its cholagogue, or its stimulant, or its sedative action, and the reported results have been of the most diversified and unsatisfactory character. Dr. Ayre has reported great success from the following plan of treatment, which, probably, deserves the preference, if the mercury be employed at all: grs. j–ij of calomel, with ♏j–v of laudanum, are given every five, ten or fifteen minutes, omitting the latter when the dose has reached sixty or eighty drops. Perhaps a great measure of the success recorded of this treatment is due to the patient being allowed to drink freely of cold water, the colder the better. During the stage of collapse, the fact must not be lost sight of, in administering calomel and other powerful drugs, that the stomach has lost its power of absorption, exposing the patient to all the dangers of an accumulated drug when reaction sets in. *General mercurial inunction* is another plan that has had its advocates.

Ipecacuanha, as an emetic, at the outset of the attack, forms part of the eliminative treatment recommended by some. Small repeated doses (gr. j–ij every

fifteen or thirty minutes, until nausea is felt,) have been recently advised. The power of minute doses of ipecacuanha to arrest many forms of vomiting is now well known, and would seem to indicate its utility in cholera.

Morphia, hypodermically. Dr. W. BATES relates a case (*Lancet*, August 21st, 1879,) treated with success by the subcutaneous use of morphia. It is useless in the malignant form.

**Opium*, though still much employed in the earlier stages of the disease, alone or conjoined with the acetate of lead or camphor, or calomel, is no longer regarded, as formerly, as the sheet-anchor in cholera. Its use in the solid form in large and repeated doses, in all stages of the disease, is now nearly abandoned, in consequence of the inutility, and even danger, of its employment. In the liquid form, in very small doses, it frequently arrests the action of other remedies.

Paracotoin, hypodermically, has been recently tried with sucess in Japan.

Piper Nigrum is, it is said, often prescribed in cholera by the natives of India, in the form of an infusion of recently-roasted black pepper. A popular Bengal cholera pill is the following:

506. ℞. Pulveris piperis nigri,
Assafœtidæ, āā gr. j.
Camphoræ, gr. ij. M.

For one pill. If given early, it is stated that it frequently arrests the disease.

**Plumbi Acetas*, in combination with opium, at first proposed by Dr. GRAVES, of Dublin, is very effectual at the outset of cholera in checking the diarrhœa. Dr. FLEMING prefers combining the acetate of lead with a solution of acetate of morphia. Dr. E. GOODEVE also prefers administering the acetate in a fluid form, but gives the opium independently. He employs the following:

507. ℞. Plumbi acetatis, grs. xxx.
Acidi acetici, ♏x.
Aquæ destillatæ, f.℥ vj. M.

Two or three tablespoonfuls every half-hour or hour. Opium, in doses of one grain, repeated once or twice, is given separately. He limits, as a rule, the quantity of the acetate of lead to grs. x–xv, and of opium to grs. iij, in the first three hours. If the disease shows signs of yielding, the doses are to be diminished or stopped altogether.

Potassii Chloras is frequently employed; it forms part of the "saline treatment" of this disease. (See p. 254.)

**Ricini Oleum* is the purgative *par excellence* employed by Dr. G. JOHNSON in the "eliminative treatment." (See p. 257.)

Sodii Chloridum was formerly given in large draughts of cold water, with the view of inducing emesis, and at the same time supplying the blood with the saline constituents supposed to be carried out of the system in the evacuations.

Sulphur was first suggested as a remedy by Dr. A. BLACKLOCK, of the Madras army, in 1848. He recommended, also, as a prophylactic, during epidemics, sulphur internally, and a diet rich in sulphureted ingredients. Dr. J. GROVE (in his work *On Epidemic Cholera*, 1865,) highly praises this remedy, which he prescribes as follows:

508. ℞. Sulphuris præcipitati,
Sodii bicarbonas, āā ℥iv.
Spiritûs lavandulæ compositi, f.℥xxiv.
Aquæ, f.℥lxxij. M.

The soda and sulphur are to be first thoroughly triturated together, in a mortar, the spirit of lavender gradually added, till the whole is well mixed, when the water is added.

Dose, two teaspoonfuls, in a little water, every two, three or four hours in simple choleraic diarrhœa; but if the case is urgent, every ten or fifteen minutes. In sudden or severe attacks, ♏x–xxx of laudanum are given with the first dose.

Terebinthinæ Oleum has been employed internally, as well as externally, with benefit.

**Ice* in lumps and iced drinks, given *ad libitum*, are grateful to the patient and highly beneficial in relieving the burning heat at the pit of the stomach and the intolerable thirst, arresting the vomiting and exciting reaction.

Stimulants. Champagne, ammonia and turpentine are among the best, but weak brandy and water is sometimes retained better than any other stimulant.

Turpentine Stupes, applied hot successively to the abdomen, the cardiac region and along the spine and extremities, and turpentine frictions and enemas, are valuable aids to the other treatment.

COLIC.

CHARLES MURCHISON, M. D., F. R. S., LONDON.

Flatulent colic will often be relieved by the various ethers and the essential oils of peppermint, anise and cajuput, by vegetable charcoal, galbanum and assafœtida. When, however, it is due to decomposition, from deficient or deteriorated bile, those remedies will be found most useful which act by checking decomposition, such as creasote, turpentine or carbolic acid.

509. ℞. Acidi carbolici fluidi,
Spiritûs chloroformi, āā f.℥–iij.
Aquæ menthæ piperitæ, f.℥j–iij. M.

Dose—a tablespoonful.

Or, a pill containing one drop of creasote.

Flatulence, and other dyspeptic symptoms arising from want of bile in the bowels, are also greatly relieved by the use of purified bile from the ox or pig, which may be given in doses of from three to six grains, about two hours after meals. As it is not desirable that the bile should

come in contact with the stomach, it is well to give it inclosed in capsules, or in pills coated with a solution of tolu in ether.

The following recipe will be found useful for the same purpose:

510. ℞. Sodii chloratis, gr. x.
Aquæ menthæ piperitæ, f.℥ss. M.
For one dose.

DR. D. L. PHARES,

In the *Transactions of the Mississippi State Medical Association*, 1878, directs attention to the *Mechanical treatment* of colic. This consists in simply supporting the patient in an inverted position—in other words, in standing him on his head. In some instances, cases that have for hours or days resisted all ordinary treatment, have by this simple means been relieved and permanently cured in from one to five minutes. Cases attended with most intense pain, vomiting and other phenomena of so-called "bilious colic," have been thus cured.

MR. JONATHAN HUTCHINSON, LONDON.

In all cases of unusually severe colic, the possibility of *intestinal obstruction* must be considered. In such cases the following rules for treatment should be observed:

1. In all early stages, and in all acute cases, abstain entirely from giving either food or medicine by the mouth.

2. Use anæsthetics promptly. Put the patient under the full influence of ether; examine the abdomen and rectum carefully before tympanites has concealed the conditions; administer large enemata in the inverted position of body; and, if advisable, practice abdominal taxis. If you do not succeed at first, do it repeatedly.

3. Copious enemata, aided perhaps by the long tube, are advisable in almost all cases, and in most should be frequently repeated.

4. Fluid injections may be sometimes replaced by insufflation of air in cases of invagination, since air finds its way upwards better, and is more easily retained. It is, however, somewhat dangerous, and has, perhaps, no advantages over injections with the trunk inverted.

5. Insufflation is to be avoided in all cases of suspected stricture, since the air may be forced above the stricture, and there retained.

6. Saline laxatives are admissible in certain cases where impaction of fæces is suspected, and in cases of stricture where fluidity of fæces is advisable.

7. Opium (or morphia) must be used in proportion to the pain which

the patient suffers. It should be administered by the rectum or hypodermically, and should be combined with belladonna. If there be not much pain or shock, it is better avoided, since it increases constipation and may mask the symptoms.

8. A full dose of opium administered hypodermically will put a patient in a favorable condition for bearing a prolonged examination under ether, and attempts at abdominal taxis.

9. In cases of uncertain diagnosis, it is better to trust to the chance of spontaneous cure or relief by repeated abdominal taxis, than to resort to exploratory operation.

DR. NATHAN S. DAVIS, CHICAGO.

In obstinate *intestinal obstruction*, not dependent upon invagination, but produced by irregular contraction of the muscular coat of the intestines, this physician has long used, with gratifying results, *tobacco enemata*. One drachm of chewing tobacco is put into one pint of boiling water, and when cool enough, one-half of this amount is injected into the rectum. The powerfully relaxing effect of the tobacco relieves the intestinal contractions, and soon produces copious evacuations. It is, however, a remedy of extreme power, inducing faintness and great temporary prostration, and should be used with corresponding caution.

DR. EDWARD MONTGOMERY, ST. LOUIS.

This writer (*Half-Yearly Compendium*, January, 1878,) recommends in cases of fæcal impaction, hot poultices to the abdomen, warm-water and saline injections, and, after the evacuation of the lower portion of the alimentary canal by enemata, purgatives by the mouth. In young, robust patients, at the early period of the disease, one-tenth of a grain of tartar emetic and one drachm of sulphate of magnesia, every hour, will very often aid in breaking up and removing the obstruction.

As it is very common for these cases of intestinal obstruction to be associated with conditions of torpor, or even paresis of portions of the bowel, the administration of the following pill will be found of great service:

511.	℞.	Strychniæ,	gr. j.	
		Ext. belladonnæ,		
		Podophyllin,	āā gr. iv.	
		Pulv. ferri sulphat.,		
		Aloes socot.,	āā gr. xx.	
		Syrupi simp.,	q. s.	M.

Divide into twenty pills; one to be taken every eight hours.

Even after the removal of the impacted mass, this pill will be found valuable in preventing a relapse, and in promoting regularity of the bowels afterward.

RÉSUMÉ OF REMEDIES.

Ammonii Carbonas, in doses of gr. v–viij in some aromatic water, frequently proves useful, especially in the flatulence of atonic dyspepsia or of hysterical females.

Anthemis, in strong infusion, or gtt. ii–iij of the volatile oil, frequently affords relief after the failure of other remedies.

Assafœtidæ, in enema, is of especial value in the flatulent colic of hysteria.

**Belladonna* is probably the most efficient remedy in *intestinal obstruction;* gr. j–ij of the extract every hour together with opiate fomentations to the belly and warm applications. The remedy should take effect in six or eight hours.

Carbo Ligni, inclosed freshly prepared in gelatine capsules, each containing gr. x of heavy vegetable ivory charcoal (dose, two, *i. e.*, gr. xx,) is a valuable remedy, from its gas-absorbent property. If administered in this manner, the large nauseous doses so frequently prescribed are avoided.

Carui Oleum is often of benefit, in doses of gtt. ij–v on sugar.

Caryophyllum in infusion, or the volatile oil (gtt. iij–v), is useful.

Cinnamomum is a pleasant and excellent carminative.

Creasotum, in doses of gtt. j in pill thrice daily, will greatly relieve the distressing flatulence of hypochondriasis.

Etheris Spiritus Nitrosi, in doses of a teaspoonful in a cupful of any convenient vehicle, is a popular and efficacious remedy.

Etheris Spiritus Compositus is useful, particularly in the flatulence of hysterical females.

Fel Bovinum. Dr. W. MURRAY says in the *Lancet*, September, 1878: Were I called to a desperate case of obstruction of the bowels, I should first of all push the belladonna treatment to its fullest extent, and while the patient is fully under the influence of the belladonna, I should administer, by enema, eight ounces of ox-gall diluted with eight ounces of water containing a few crystals of washing soda.

Menthæ Piperitæ Oleum, with or without a few drops of laudanum, is a pleasant carminative.

Myristicæ Oleum, in doses of gtt. ij–v, affords relief. Grated nutmeg may be given in a little warm brandy and water.

**Nux Vomica* is valuable in obstinate flatulence. Dr. BARLOW recommends the following useful formula:

512. ℞. Extracti nucis vomicæ, gr. iss.
Argenti nitratis, gr. ij.
Extracti lupuli, gr. xij. M.

Make six pills. Take one thrice daily. This formula is particularly serviceable when there is also pyrosis and heartburn.

Potassii Permanganas. Dr. R. BARTHOLOW has found marked advantage from the use of this substance in the flatulence and dyspepsia so constantly attendant on obesity, as follows:

513. ℞. Potassii permanganatis, gr. vij.
Aquæ destillatæ, f.℥ ij. M.

Keep in a glass-stoppered bottle. Dose, a teaspoonful thrice daily.

Rheum.

514. ℞. Magnesii carbonatis, f.℥ j.
Rhei pulveris, gr. xxx.
Tincturæ rhei, f.℥ iij.
Tincturæ opii, ♏xv.
Spiritûs anisi, gtt. vj.
Spiritûs menthæ piperitæ, f.℥ ij.
Aquæ destillatæ, f.℥ vj.

This is a popular remedy in the west of England, in intestinal pains. From three to six tablespoonfuls a day.

Terebinthinæ Oleum. Dr. J. COPLAND remarks that, notwithstanding constant or even feculent vomiting, advantage will sometimes be derived from one to two tablespoonfuls of the unrectified oil of *turpentine*, taken with aromatics. He has seen the vomiting cease and the distention of the abdomen rapidly subside immediately after this dose, which should be repeated if rejected at first.

Zinci Sulphas has been recommended in flatulent affections of the bowels, especially of the colon. The following formula has been employed:

515. ℞. Zinci sulphatis, gr. xviij.
Pulveris opii, gr. iij.
Mucilaginis, q. s. M.

Make six pills. Take one four or five times a day, after a meal. When the stomach can dispense with the opium, substitute extract of gentian or rhubarb.

Galvanism is often very serviceable in obstruction. Drs. BEARD and ROCKWELL recommended that the positive pole be applied along the spine, while the negative pole is passed gently over the abdomen, following the direction of the ascending colon. A case, accompanied with fæcal vomiting, is reported (*Dublin Quarterly Journal of Medicine*, November, 1864,) as successfully treated by the application of galvanism to the mucous surface of the intestine. A sponge with the metallic handle to which it was attached, was passed up the rectum two or three inches, whilst the other sponge was applied to the abdominal walls. The effect was immediate, the constipation being at once relieved and the patient recovering from an apparently hopeless condition.

CONSTIPATION—HABITUAL.

The habit of constipation may be broken up by *massage, change of diet, enemata, laxative mineral waters,* or *drugs.*

In regard to *massage,* or the movement cure, the following little operation executed by the patient upon himself, when properly performed, is valuable:

Place the tips of the fingers of the right hand exactly over the cæcal region, with *very slight* pressure; carry them upward, along the ascending colon, to the right hypochondrium; continue the movement *without any intermission* over the region of the transverse colon to the angle of junction with the descending colon; stop not, but proceed downward, gently and steadily, to the iliac region of that side; instead of the previously very gentle pressure, the finger must now be pressed firmly and deeply (without pain) into the pelvic cavity, and there retained for about fifteen seconds; then remove the hand altogether, rest a few seconds, and repeat the procedure. This may be continued for the period of from a few minutes to a quarter of an hour or more. Some little care and tactile dexterity are needed to do this properly; and where the hand is dry, or the cuticle thick and hard, it is advisable to slightly moisten the ends of the fingers. When the right hand is tired, the left can be used, and so alternately, but it is better not to alternate them too rapidly. If there be failure, it must not necessarily be given up. Invalids themselves will often fail; almost invariably, if their bowels be *extremely intractable.* But now the aid of a friend for passive movements may be invaluable. The medical adviser can give instructions regarding the precise anatomical relations of the parts involved, and the method of performance. The proceeding should usually extend over a period of from five or six minutes to occasionally twenty-five minutes.

For occasional use, in the treatment of *constipation in old age,* the following pill affords an excellent formula:

516. R. Extracti colocynthidis compositi, gr. viij.
Extracti hyoscyami, gr. ij. M.
For one pill.

J. M. DA COSTA, M. D., PHILADELPHIA.

517. ℞. Podophyllin,
Extracti belladonnæ, āā gr. j.
Capsici, gr. v.
Pulveris rhei, ℈j. M.
For twenty pills. One three times a day.

Belladonna is undoubtedly a stimulant to the muscular fibres of the intestines. It acts on them as it acts on the bladder; it stimulates to contraction. It also increases the action of purgatives, enabling the physician to get along with smaller quantities of purgative medicine. Podophyllin is useful in torpor of the upper portion of the bowels, to increase the secretion of the liver.

518. ℞. Tincturæ gentianæ compositæ, f.℥ iij.
Tincturæ rhei dulcis, f.℥j.
Tincturæ belladonnæ, f.℥ iss. M.
Dessertspoonful thrice daily.

519. ℞. Extracti gentianæ, ℥j.
Extracti nucis vomicæ,
Podophyllin, āā gr. ijss.
Olei cajaputi, gtt. xx. M.
For twenty pills. One twice a day, as a tonic for chronic constipation.

520. ℞. Extracti belladonnæ, gr. iss.
Pulveris rhei, gr. xxiv.
Pulveris zingiberis, gr. xij. M.
For twenty-four pills. One four times a day.

S. S. BIRCH, M. D., LONDON.

521. ℞. Extracti rhei alcoholici, ℥ss.
Extracti taraxaci, gr. xxiv.
Quiniæ sulphatis, gr. ij. M.
Divide into twelve pills.

One should be taken either on rising in the morning or at dinner-time, or even at both periods, when the constipation is very obstinate. This a very gentle stomachic and tonic evacuant, particularly useful for the delicate. In addition, when there is torpor of the liver, deficiency or perversion of the biliary secretion, the patient should be ordered:

522. ℞. Hydrargyri cum cretâ, gr. ¼–j.
Sacchari albi, gr. v. M.
For one powder.

This is a sufficient dose, when given alone, at bed-time, for two or three successive nights, or, in very sensitive persons, every second or

third night. But the hydrargyrum cum cretâ is often prepared imperfectly, and then causes considerable annoyance and dissatisfaction to the practitioner.

PROF. WILLIAM THOMPSON, M. D., NEW YORK.

This writer observes (*Medical Record*, May, 1877,) that obstinate constipation is owing to deficient action of, 1, the small intestine; or, 2, the large intestine.

1. Deficient action of the small intestine is often owing to deficient secretion. Constipation from this cause is common in the Northern States, as a sequel to diarrhœa, and is often met with in the Southern States, as the result of malarial poisoning. There is, in these cases, no extraordinary accumulation and impaction, but a sluggish action of the bowels, medicine being required to produce stools in four or five days, which are, even then, moderate in amount and quite dry. In most cases, there is present a dull pain, or, rather, an uncomfortable sensation, at the back of the head, which is best relieved by a free discharge of bile. The tongue is not large and flabby, but usually small, with a little redness at the tip and along the edges. The secretions of the mouth are viscid, indicating the condition of defective secretion that prevails all along the canal.

Mild cathartics, in these cases, are injurious, and active purgatives still more so. What is wanted, is the presence, in the intestine, of a small increase of lubricating liquid, and this is obtained by causing the patient to take a great deal more water than customary—drinking on rising, for example, two tumblerfuls of water; and, as a rule, those who drink a considerable quantity of water are not constipated. Its laxative action may be insured by the addition of some saline, as carbonate of soda or salt, the water to which this is added not passing so readily through the mucous membrane into the general system, and thus more readily exciting peristaltic action. A half drachm of *sulphate magnesia*, dissolved in a pint of water, will, for this reason, act, sufficiently as a cathartic. A curious fact is, that the addition of a small dose of quinine to salines, increases their power of acting on the intestinal canal.

523. ℞. Magnesiæ sulphatis, ʒj.
Quiniæ sulphatis, gr. j. M.
To be taken in a tumbler of water, every morning.

This dose rarely fails to produce all the laxative effect required in

every form of deficient secretion, as, for instance, in constipation following fever, where we wish to obtain free evacuations. Patients should be told not to expect much effect for a week or two; but, if they can be induced to persist in the daily use of large quantities of water, great benefit will almost always follow.

When flatulence is present, and defective innervation, the following pill is excellent:

524. ℞. Pulveris assafœtidæ, gr. iv.
Extracti nucis vomicæ, gr. ss.
Saponis, gr. ix. M.
For three pills. To be taken daily.

Such a combination is suitable in persons of a sedentary habit, with a tendency to headache and a dull, sallow color.

2. *Deficient Action of the Large Intestine.* This also may depend upon deficient secretion, or defective innervation; but far more frequently on the latter. One of the worst forms of this is when the constipation depends upon deficient nerve-power in the rectum alone, and which, if overlooked, may give rise to rectal abscess. The patients have little knowledge that they should have a movement, and when the sensation does occur, they have little or no power of expelling the fæcal accumulation.

One of the most common causes of this condition is chronic inflammation set up about hæmorrhoids. The relaxed condition which follows the defective innervation renders prolapsus of the rectum very probable. These patients are remarkable for being generally low-spirited, so that even insanity may be induced by such a state of the rectum, disappearing when this has been relieved. In treating these cases the first indication is to keep the rectum empty; and when accumulations do take place, they are best removed by enemata. These, however, should never be prescribed as a regular treatment, for if the habit is acquired of emptying the bowels daily by their aid they can never be dispensed with. When the accumulation which has caused the enema to be employed, has been thoroughly removed, other means should be resorted to for restoring the innervation of the bowel; and in these cases the injection of *strychnia* into the submucous tissue is an exceedingly valuable specific. If necessary, a fold of the mucous membrane may be drawn down, and the injection inserted. It will frequently cure the worst forms of prolapsus of the rectum, as well as

that condition in which there is simple debility with hypertrophy of the mucous membrane.

In other forms of constipation there are accumulations of scybalous matters in the upper part of the rectum and in the transverse colon. When these last are dislodged they come down into the sigmoid flexure; and mineral waters, such as the Kissingen, are useful in effecting such dislodgment, loosening the scybalæ without depressing the patient. The water may be taken in the morning; a suppository of *stramonium* or *belladonna* (sufficient to cause a little dryness of the throat and slight dilatation of the pupil) may be introduced in the evening. Constipation may be met with during the recovery from pneumonia and other febrile affections, arising from accumulations at various parts of the canal. Compound jalap powder is a very effective means for preventing such accumulations.

THOMAS HAWKES TANNER, M. D., F. L. S., LONDON.

525. ℞. Zinci valerianatis, gr. xij–xxiv.
Extracti belladonnæ, gr. iij–vj.
Extracti gentianæ, gr. xxiv. M.

Make twelve pills and silver them. One to be taken three times a day, in nervous cases of habitual constipation, and in spasmodic contraction of the sphincter ani.

PROF. W. H. VAN BUREN, M. D., NEW YORK.

526. ℞. Extracti aloës, ℥ ss.
Extracti nucis vomicæ, gr. vj.
Extracti hyoscyami, ℈ j.
Pulveris ipecacuanhæ, gr. j. M.

Divide into twenty pills. One to be taken at night.

This recipe, termed the "*Pil. salutis,*" is of special value in the constipation of females.

DR. METTAUER'S ALKALINE MIXTURE OF ALOES.

527. ℞. Aloes, 2½ ounces.
Bicarbonate of soda, 6 ounces.
Compound spirit of lavender, 2 fluid ounces.
Water, 4 pints. M.

Macerate for two weeks, and filter. Dose—from one fluid drachm to one fluid ounce half an hour after meals, for persons of a costive habit.

It has been observed that *aloes* is useful in habitual constipation due to atony of the colon, the result of fever and debilitating diseases, old age or sedentary habits. It may be combined as indicated, with aro-

matics, hyoscyamus, ipecacuanha, nux vomica or quinine. Dr. SPENDER recommends (*Medical Times and Gazette*, February 19th, 1870,) the following pill:

528. ℞. Extracti aloës aq., gr. ss–j.
Ferri sulphatis, gr. iss–ij. M.

For one pill, to be taken thrice daily, immediately after the principal meals, and continued regularly for a few days till the occurrence of the first loose motion, after which one only is to be taken night and morning. At the end of a week or two, another pill may be omitted, and within a month a single pill once or twice a week suffices.

Dr. W. CRAIG, of Edinburgh, prefers *aloin*. He has never seen any bad effects follow its use; and, from its small dose, absence of griping, and certain action, he holds it should always be used in preference to the crude drug. He gives:

529. ℞. Aloinæ, gr. j ½.
Ferri sulphat. exsic., gr. j ss.
Quiniæ sulphatis, gr. j.
Extr. nucis vomicæ, gr. ss.
Extr. gentianæ, q. s. M.

For one pill.

DR. F. PEYRE PORCHER.

530. ℞. Extracti hyoscyami, gr. j.
Podophyllin, gr. ¼–⅙.
Ferri sulphatis, gr. ij.
Extracti gentianæ, q. s. M.

For one pill, to be used as a mild laxative in torpid bowels. One at night, to be repeated at intervals as required.

PROF. ROBLEY DUNGLISON.

531. ℞. Magnesii sulphatis, ℥ j.
Potassii bitartratis, ʒ j.
Ferri sulphatis, gr. x. M.

For one powder. Add to a quart of water and take a wineglassful, on rising, every morning.

This recipe was frequently recommended in his lectures by the late distinguished professor of physiology.

JOHN FORSYTH MEIGS, M. D.

532. ℞. Confectionis sennæ, ℥ j.
Potassii bitartratis, ʒ ij.
Sulphuris præcipitati,
Ferri subcarbonatis, āā ʒ j.
Mellis despumati, q. s. M.

Make an electuary. Teaspoonful after meals.

PROF. METCALF, M. D., NEW YORK.

533. ℞. Extracti aloës (purif.,)
Extracti hyoscyami, āā ʒj.
Extracti nucis vomicæ, gr. xij.
Olei anisi, gtt. x. M.

Divide into sixty pills. One to be taken after each meal, particularly for constipation in women.

RÉSUMÉ OF REMEDIES.

Aleuritis Triloba. The oil of the aleuritis nut has been highly recommended as a substitute for castor oil. It has the further advantage of not being disagreeable to take, having the flavor of the hazel-nut. An adult is easily purged with a dose of fifteen grammes. It is an excellent aperient, and its effects on the intestine are identical with those of castor oil. About three hours are required for its action, which takes place without pains or colic.

534. ℞. Olei aleuritis, f.ʒss.
Sacchari albi, ʒss.
Pulv. acaciæ,
Aquæ, āā ʒiij. M.

For one dose.

In rebellious cases of constipation and in abdominal pains, good results have been obtained by making frictions on the abdomen with the following liniment:

535. ℞. Olei aleuritis, f.ʒss.
Tincturæ cantharidis, f.ʒiij.
Ammoniæ carbonatis, ʒiij. M.

For a liniment.

Aloes and Aloin. (See above p. 273.)

Arseniosum Acidum is said by Dr. ISNARD, of Marseilles, to be particularly useful in the constipation of aged people and sedentary persons.

**Belladonna* is especially called for where there is atony or paralysis of the muscular coat of the intestines; gtt. v–x, thrice daily, of the tincture, will often overcome the most obstinate constipation from this cause.

Benzoini Tinctura, in doses of gtt. xx, thrice daily, is said, in cases of constipation apparently depending upon stricture of the colon, to keep up the peristaltic actions without irritating the bowels.

Calcis Saccharas. Dr. J. CLELAND, of Edinburgh, first introduced this aperient through the *Edinburgh Medical Journal,* August, 1859, to the profession. He prepares it as follows:

536. ℞. Slake of quicklime, ʒviij.
Rub up with it of white sugar, ʒv.
Add of water, f.ʒxx. M.

Stir and filter. The product should be perfectly clear, with only a slightly yellowish tinge. Each ounce, by weight, should contain 18 grains of lime. Dose, ♏xv–xxx, or f.ʒj.

Dr. C. finds this saccharate of lime a very valuable means of overcoming gradually that chronic constipation which so frequently accompanies dyspepsia, and that persons who for years have been in the constant habit of using aperient medicines have been able to abandon them, in a great measure, after taking this remedy for some time.

Camphora. In constipated persons, who suffer much from *difficult defecation*, the following enema is very highly recommended: Take a tumbler and fill it half full of water, at the temperature of the room; pour in a few drops of tincture of camphor—just enough to give the water a slight sapidity—then fill the glass with water. Inject this slowly into the rectum, till about sixty or eighty grammes have been introduced. At first, no effect is perceived, but in about ten minutes, the desire to defecate becomes irresistible. The effect becomes energetic in proportion to the quantity of tincture of camphor added. After the defecation, it is well to repeat the injection of a small quantity of the same mixture, and retain it in the rectum, which can readily be done, so as to prevent constipation on the following day.

Colchicum, in doses gtt. v of the tincture of the root several times daily, has been highly recommended in obstinate constipation.

Colocynth. Dr. CRICHTON recommends (*British Medical Journal*, November 28th, 1868,) the Prussian tincture of colocynth, in doses of ♏v–x in a little water, taken about an hour before breakfast, as an efficient remedy. The formula of the Prussian tincture is as follows:

537. ℞. Colocynthidis pulpæ, ℥j.
Illicii anisati, ℥j.
Alcohol, f. ℥ xx. M.

Dr. BIRCH recommends colocynth combined with hyoscyamus, in the constipation of old age.

Fel Bovinum Purificatum. When there is torpidity of the liver and deficiency of the biliary secretion, ox-gall may prove useful by supplying the deficiency. Either of the following formulæ may be used:

538. ℞. Fel bovini purificati, ℥ ij.
Olei carui, ♏x.
Magnesiæ carbonatis, q. s. M.
Make thirty-six pills. Take two twice daily.

Or:

539. ℞. Fel bovini purificati,
Pilulæ assafœtidæ compositæ, āā gr. xxx.
Extracti aloës, gr. xx.
Saponis duris, gr. x.
Pulveris ipecacuanhæ, gr. viij. M.
Make thirty pills. Take one to two daily, before dinner.

Ferri Carbonas has not, in the opinion of Dr. GRAVES, been duly appreciated as a remedy in habitual constipation. He has succeeded in curing with it alone, a patient who had long been subject to extreme constipation, and who had been reduced to the necessity of taking an immense dose of purgatives almost every week.

Magnesiæ Sulphas, in small, frequently-repeated doses, with the addition of a few drops of diluted sulphuric acid, will sometimes subdue obstinate constipation after the failure of other means.

Nitricum Acidum, in the opinion of Dr. GRAVES, is a very reliable remedy in habitual constipation, and combines tonic with aperient qualities.

Pix Liquida, persevered in for some time, often effectually removes constipation.

Podophyllin is useful when there is torpor of the upper portion of the bowel. It may be continued indefinitely, in small doses. Dr. HORACE DOBELL recommends the following formula as one of the most satisfactory he has ever been tried:

540. ℞. Podophylli, gr. ij.
Essentiæ zingib., ʒ ij.
Alcoholis, ʒ ij. M.

A teaspoonful at bed-time, in a wineglass of water, nightly, or every second or third night.

Rhamnus Frangula and *Rhamnus Purshiana* (*Cascara Sagrado*) are valuable as laxatives in constipation from dyspepsia.

Rheum. Dr. F. W. PAVY recommends the following pill in habitual constipation:

541. ℞. Pilulæ rhei comp., gr. ij–iii.
Pulveris capsici, gr. j. M.

To be taken *with the food*, and repeated daily, as occasion requires.

In the constipation of anæmic females, Dr. ASHWELL recommends the following mixture:

542. ℞. Pulveris rhei,
Magnesii carbonatis, āā ʒ ss.
Confectionis aromaticæ, gr. xx.
Aquæ cinnamomi, f. ʒ ix.
Tincturæ cardamomi compositæ, f. ʒ j. M.

Make a drink. To be taken at bed-time, every three or four days.

Ricini Oleum is one of the best purgatives which can be employed in habitual constipation, acting speedily, without much griping, and causing less subsequent constipation than any other purgative given to remedy this state.

Senna, particularly in the form of confection, is a mild, efficient purgative, causing little excitement, and leaving no subsequent constipation.

Stramonium. Prof. ARMOR (*American Practitioner*) has been in the habit of using stramonium in the form of suppository, and is pleased with the results. Half or three parts of a grain of the extract may be combined with a sufficient quantity of cocoa butter. It is admirably adapted to obstinate constipation of nervous females, who suffer, at the same time, from pelvic irritations from various causes.

**Nux Vomica* or *Strychnia* is often of equal benefit. Dr. COPLAND recommends the following pills:

543. ℞. Extracti nucis vomicæ, gr. iij.
Extracti colocynthidis compositi, ℈ ij.
Saponis castiliensis, gr. xij. M.

Make twelve pills. Take one every night, for a few weeks.

Veratrum Viride, in doses of gtt. iij of the tincture four or five times daily, is said (*Practitioner*, November, 1868,) to be useful in some cases of obstinate constipation.

Electricity. Dr. ALTHAUS and Drs. BEARD and ROCKWELL have reported a number of cases of habitual constipation which yielded readily to faradization of the bowels after the failure of other remedies.

DIARRHŒA, ACUTE AND CHRONIC.

As the term diarrhœa is applied to a condition characterized by fluid fæcal charges accompanied with intestinal pains, its treatment must always have reference to the exciting cause of the discharge. Frequently it is not advisable to check it, as it is a natural effort to carry off irritating matter from the intestinal canal. Indeed, it is often better to assist this effort by gentle laxatives and judicious diet, as for instance on the plan recommended by

DAVID YOUNG, M. D., FLORENCE, ITALY.

This writer (*Practitioner*, March, 1875, December, 1876,) states that in nearly every form of diarrhœa he trusts almost exclusively to diet and one or two forms of castor oil emulsion. For instance:

544.	℞.	Olei ricini,	♏xxiv.	
		Spt. chloroformi,	ʒjss.	
		Sol. morph. mur.,	ʒj.	
		Pulv. gum acaciæ,	ʒijss.	
		Syrupi,	ʒss.	
		Aquam,	ad ʒiv.	M.

A small dessertspoonful every hour and a half till the bowels are quieted.

He adds the following rules:

1. When the diarrhœa is chronic, and the stools contain mucus, he increases the dose of castor oil to from four to six drops.

2. If the pain is very severe, six drops of morphia (Sol. B. Ph.) may be given with each dose, but he has never had occasion to give more.

3. If the mixture is carefully prepared it is pleasant and readily taken, and the taste of the oil is so completely covered that in only two or three cases of the large number in which he had given it, was the mixture suspected to taste like castor oil.

4. The mixture does not keep well, especially in warm weather, but

the addition of four grains of quinine to a three-ounce bottle will keep it fresh for several weeks.

In muco-enteritis, or dysenteric diarrhœa, Dr. YOUNG has derived decided advantage from the employment of *arsenic*. It is especially indicated where the stools are slimy, contain much mucus and blood, and are attended with great prostration of strength. Two drops of the *liquor arsenicalis* (B. Ph.) are given every two or three hours. If the movements occur soon after food, the arsenic should be taken before meals; if not, in the usual way, after food.

DR. THOMAS HILLIER, LONDON.

545. ℞. Olei ricini, f.℥ ij.
Pulveris acaciæ, ℥j.
Tincturæ opii, ♏viij.
Syrupi, f.℥ ij.
Aquæ carui, q. s. ad f.℥ ij. M.
Dose—A tablespoonful for a child six years old.

A useful oleaginous mixture in dysenteric diarrhœa.

W. KEMPSTER, M. D., UTICA, N. Y.

546. ℞. Acidi carbolici, gr. j.
Aquæ, f.℥ j. M.
This is the strength of the standard house solution in the State Lunatic Asylum at Utica, New York. Of this a dessertspoonful is given thrice daily, in case of sluggishness of the bowels accompanied by offensive breath. Diarrhœa produced by eating unripe fruit, or other articles which promote fermentation, is relieved by combining a drachm or two of the solution with the usual remedies. When a fœtid smell emanates from the cutaneous surface, order a warm bath, and then wash the surface with a solution, gr. v–f.℥ j.

Poultices and hot fomentations help to relieve the pain.

Mr. R. P. WHITE, of Dublin, speaks in the highest terms of a *turpentine* emulsion in all cases of severe diarrhœa, even those in typhoid fever.

547. ℞. Olei terebinthinæ,
Liquoris potassæ, āā f.℥ ij.
Mucilaginis acaciæ, f.℥ iv.
Syrupi papaveris,
Syr. flor. aurantii, āā f.℥ viij.
Aquam camphoræ, ad f.℥ viij. M.
Shake well, and take a tablespoonful every four hours.

After the acute stage of the attack is over, the time has come for opiates and astringents.

DR. WILLIAM AITKEN, M. D., EDINBURGH,

Says that one general rule may be acted on in the cure of diarrhœa, which is, that in the adult, whatever be the form of the diarrhœa, if the stools be dark at first, and then become light-colored, purgative medicines are no longer beneficial, and in no instance ought they to be continued longer than is sufficient to remove any irritative substance accumulated in the alimentary canal. Often a tonic is required:

548. ℞. Salicin, gr. v–x.
For one powder. To be taken every four or six hours.

In cases of diarrhœa with clear tongue, which will not yield to opiates, astringents, or stimulants, either singly or combined, and which, probably, depend on a want of tone in the intestine, the above recipe has often stopped a discharge that appeared fast hurrying the patient to his grave.

DR. J. M. DA COSTA, M. D., PHILADELPHIA.

In cases in which there exists persistent irritability of the bowels, influenced by the taking of much food which cannot be digested, and in which there are gastric symptoms in connection with the dysenteric affection, the *subnitrate of bismuth* will be found very serviceable. In order that it shall produce an effect, it is necessary that it shall be administered in sufficiently large doses, not less than 20 grains. The dose may gradually be increased to a drachm.

549. ℞. Bismuthi subnitratis, ℈j.
Acidi tannici,
Pulveris ipecacuanhæ compositæ, āā gr. iij. M.
For one powder. To be taken three times a day, in chronic dysenteric diarrhœa.

SIR J. FAYRER, F. R. C. P., BRITISH INDIA.

This author believes that in the treatment of chronic diarrhœa *diet* is the most important element—more so than drugs. He gives the following rules:

All irritating or indigestible or solid food must be at first prohibited, and only that which is most easily absorbed and assimilated allowed. Milk alone, or, better, diluted with about one-fourth or one-third part of lime-water, given in small quantities and at frequent intervals, say a wineglassful every second or third hour, in some cases more fre-

quently, will generally be found to answer well, and may be continued for a time to the exclusion of all other food. Milk, undiluted, will seldom agree, as may be seen by its causing increased irritation, frequency of action, and the passage of undigested caseine. Beef tea, raw beef juice, or other plain animal broth, free from all extraneous matters; a raw egg beaten up with milk, to which a teaspoonful of brandy may be added, will sometimes be tolerated; arrowroot, tapioca, or other plain farinaceous food, will sometimes, but not always, answer.

Tea and coffee, as a general rule, disagree, and should be avoided. Stimulants, especially for those who have long been habituated to their use, are often needed; the best are a little whisky or brandy diluted with Vals or Vichy or potash water; but these should be laid aside for plain water if they, as they sometimes do, increase the action of the bowels. Or a little very good port wine may be tried; as a general rule, all other wines are unsuitable.

Regularity in the times of administration and in the quantity of nourishment given is most essential. The greatest care should be taken not to give too much of anything at a time, and at once to discontinue whatever appears to disagree.

It is necessary that the patient should be kept warm, and at an equable temperature day and night. The body should be covered with flannel or woolen next the skin, and a flannel bandage should surround the abdomen. Chills and damp are especially to be avoided; exposure to them may seriously aggravate the mischief; during cold weather the patient should not leave the house.

JOHN FORSYTH MEIGS, M. D.

550. ℞. Pulveris opii, gr. vj.
Extracti nucis vomicæ, gr. iij.
Cupri sulphatis, gr. j. M.
Divide into twelve pills. One three times a day, in chronic diarrhœa.

The value of this pill has been proved by army surgical experience.

CHARLES MURCHISON, M. D., F. R. C. S., ETC.

551. ℞. Acidi tannici, ℈ iv.
Tincturæ opii, ♏xl.
Glycerinæ, f.℥ ss.
Aquæ menthæ piperitæ, ad f.℥ iv. M.
A tablespoonful in a tablespoonful of water every four hours.

After the diarrhœa is checked, order:

552. ℞. Acidi nitro-muriatici, f.℥ iss.
Tincturæ opii, ♏xl.
Syrupi, f.℥ ss.
Aquæ, ad f.℥ iv. M.
A tablespoonful in water, four times a day.

DRS. BURKART AND RICKER, STUTTGART, GERMANY.

These writers have lately called attention to what they deem the extraordinary powers of *coto bark*, and its active principle, *cotoïn*, in diarrhœa, intestinal catarrh, and dysenteric disease. The remedy was employed in the form of powder, tincture, and the active principle, cotoïn. The taste of the powdered bark and tincture is particularly disagreeable, increasing the flow of the saliva in a marked degree. In moderate doses, they generally produce a burning sensation in the stomach, and, very frequently, eructations and vomiting, making both these forms of exhibition extremely undesirable. The employment of cotoïn is free from these objections, for very small doses produce the desired effect, without inducing secondary disturbances or disagreeable sensations of any kind.

553. ℞. Cotoïnæ, gr. j.
Aquæ destillatæ, f.℥ iv.
Alcoholis, gtt. x.
Syrupi, f.℥ j. M.
A tablespoonful every hour.

Some of the cases were of long standing, some were severe attacks of cholera morbus, and others had been but little benefited by tannin, opium, or lead acetate. The above mixture produced speedy improvement—generally in a few hours—and complete recovery in from twelve hours to six days.

DR. EDWARD R. SQUIBB, BROOKLYN.

The following is a favorite prescription of this physician, in diarrhœa:

554. ℞. Tincturæ opii,
Tincturæ camphoræ,
Tincturæ capsici, āā f.℥ j.
Chloroformi purificati, f.℥ iij.
Alcoholis, ad f.℥ v. M.
A teaspoonful as required.

RÉSUMÉ OF REMEDIES.

ACUTE DIARRHŒA.

Camphor is regarded by Dr. RINGER as one of the most efficacious of remedies in summer diarrhœa, but it must be employed at the very commencement of the disease, or it will fail of its effect.

Capsicum is regarded by Dr. COPLAND as almost a specific in diarrhœa arising from putrid matter in the intestines, and especially when occasioned by fish.

Carbolicum Acidum has been recommended in the diarrhœa caused by eating unripe fruit, etc. (F. 546.)

**Ipecacuanha* is often of benefit after the other remedies have proved useless.

Leptandrin is valuable when the stools are destitute of bile and the mucous membrane is irritable. In such cases, the stools, under its use, are said to assume their natural color and consistence.

Magnesii Sulphas. A dose at the outset often brings prompt relief.

Oleum Ricini. (F. 544, 545.)

**Opium* is a most valuable remedy in diarrhœa. In cases due to the ingestion of indigestible food, etc., an aperient should be first given, to remove the irritating matter; then, if the diarrhœa persist, opium, in mixture, or pill, or enema, will often arrest it. Dr. WARING recommends, in the so-called summer or autumnal diarrhœa, the combination of laudanum (♏x–xx) with dilute sulphuric acid (♏xv–xx), as often successful.

**Rheum* is often of great benefit, by its property of first removing irritant matters from the bowels, and then acting as an astringent and tonic. The following is an excellent formula for general use, which by itself, will often effect a cure:

555. ℞. Pulveris rhei compositi, ʒj.
Sodii carbonatis, gr. xx.
Tincturæ opii, ♏x–xv.
Aquæ menthæ piperitæ, f.ʒx. M.

Make a drink. If, after its operation, the diarrhœa continues, chalk mixture and opium may be given.

Sodii Bicarbonas, in full dose (℈ ij–ʒj), combined with tincture of ginger (f.ʒss–f.ʒj) and aromatic spirits of ammonia (f.ʒss–f.ʒj) and a little laudanum, is of great service in diarrhœa attended with colic and gastric irritability and flatulence, especially when this is consequent on the indigestion of unwholesome food.

Emetics. An ipecacuanha emetic, repeated once or twice, according to circumstances, often arrests a diarrhœal discharge.

Enemata are often of great service, either mucilaginous or containing opium, ipecacuanha, or astringents. *Cold water enemata* are highly recommended by WINTERNITZ.

SUB-ACUTE AND CHRONIC DIARRHŒA.

Alum, in doses of ʒss–ʒj, daily, or in enema (℈ j–vj), is often of benefit in diarrhœa dependent upon a relaxed condition of the mucous intestinal membrane. The following formula is useful:

556. ℞. Aluminis, gr. x.
Pulveris kino compositi, gr. v.
Confectionis rosæ, q. s. M.

Make pill. Take every sixth hour.

Argenti Nitras is of service in chronic diarrhœa when the stools are watery or mucous.

Arsenic is highly spoken of by Dr. RINGER in chronic diarrhœa. He gives one to two minims of Fowler's solution before each meal.

Bael. A teaspoonful of the liquid extract, twice daily, is recommended by Dr. J. K. SPENDER, in painless chronic diarrhœa. FAYRER and MURCHISON also praise it highly.

**Bismuthi Subnitras,* (See F. 549.,) Professor ALONZO CLARK recommends as particularly excellent in chronic diarrhœa:

557. ℞. Bismuthi subnitratis, gr. v.
Morphiæ sulphatis, gr. $\frac{1}{12}$. M.
This much, two, three or more times daily.

Calcis Carbolas, in one-grain doses, combined with henbane, has been successfully employed by Dr. HABERSHON (*Lancet*, January 4th, 1868,) in diarrhœa attended with flatulent distention of the colon.

Calcis Phosphas, in doses of gr. j–ij, several times a day, is praised by Dr. RINGER as of great value in chronic diarrhœa, effecting both a general and local improvement.

Carbazotate of Ammonia, in grain doses, thrice daily, has proved successful in very chronic cases.

Cascarilla is much used in Germany in the advanced stages of diarrhœa.

**Catechu,* when there is no inflammatory action, is useful (in doses of gr. x–xv of the compound powder, or f.ʒ j–ij of the infusion) in diarrhœa depending upon a relaxed state of the mucous membranes of the intestinal canal.

Cinnamomum, in combination with chalk and opium, is often of benefit in chronic diarrhœa.

Creasotum is occasionally effectual. The following formula may be used:

558. ℞. Creasoti, ♏ j–iv.
Spiritûs ammoniæ aromatici, ♏ xv.
Aquæ, f.ʒ iss. M.
When there is much pain, paregoric may be added.

Or the following:

559. ℞. Creasoti, ʒ iss.
Pulv. opii,
Pulv. capsici, āā ʒ j.
Pulv. krameriæ, q. s. M.
Make sixty pills. One every hour or two until the violent symptoms are relieved.

**Cupri Sulphas,* combined with opium, is often very serviceable. Dr. WARING recommends the following formula:

560. ℞. Cupri sulphatis, gr. $\frac{1}{4}$–ss.
Pulveris ipecacuanhæ compositi, gr. vj. M.
Make powder. Take thrice daily.

Dr. JOHN FORSYTH MEIGS combines it with opium and nux vomica; Dr. TANNER, with opium and gentian.

Cuspariæ Cortex may be given with advantage in the latter stages of diarrhœa.

Ergot, in doses of gr. v, thrice daily, has been employed with marked improvement, when dysenteric symptoms were coming on.

Erigeron Canadensis. Dr. J. W. MOORMAN, of Kentucky, says there is no better remedy in diarrhœa with debility, than the *oleum erigerontis*, gtt. xv, every four hours, till relieved. It is the best given in sugared water, and in full doses. (*American Journal of Medical Sciences*, 1865.)

Ferri Pernitratis Liquor, in doses of gtt. x–xv thrice daily, is a valuable astringent and tonic. Dr. KERR recommends the persesqui-nitrate. To prepare it, he mixes one ounce and a half of nitric acid with seven and a half of water, and puts into the mixture half an ounce of iron wire. The solution is then poured off from the remainder of the wire, and water is added to it, till the whole amounts to thirty ounces. The liquid ought to be transparent and of a beautiful dark-red color.

Ferri et Potassii Tartras. The followiug formula is recommended by Dr. E. GOODEVE, in chronic diarrhœa attended with anæmia:

561. ℞. Ferri et potassii tartratis, ℈ j–ij.
Tincturæ opii, f. ʒ iss–iij.
Aquæ cinnamomi, f. ʒ iv. M.
A tablespoonful in water thrice daily.

Galla, in doses of gr. x–xx of the powder, several times a day, is occasionally useful in chronic diarrhœa. Dr. J. K. SPENDER recommends ʒ j of the tincture thrice daily in painless diarrhœa.

Granati Fructus Cortex, in decoction, is recommended by Dr. WARING in chronic diarrhœa unattended by inflammatory action. It is particularly useful in diarrhœa consequent on debilitating diseases.

Hæmatoxylum, in decoction, in the form of an extract (gr. x–xxx,) is a useful astringent and tonic after active inflammation has subsided.

Hydrargyri Chloridum Corrosivum. In intestinal catarrh, especially in children, the use of the following prescription, with a milk diet, often produces "marvelous" results:

562. ℞. Hydrarg. chlor. corrosivi, gr. $\frac{1}{8}$–$\frac{1}{2}$.
Aquæ, f. ʒ iv. M.
A teaspoonful every two or three hours.

**Kino*, in doses of gr. xij–xx, with or without opium, is a valuable astringent in chronic diarrhœa, especially that connected with follicular derangement. It is also frequently prescribed even when febrile symptoms are present.

Krameria is much employed by Spanish physicians, in chronic diarrhœa, and is especially useful when the stools are mucous and slimy, and when there is no inflammatory action.

Matico, in infusion, is usually of benefit in chronic diarrhœa.

Muriatic Acid, combined with tincture of nux vomica, and given before meals, is found of benefit, by Dr. WILLIAM FOX, in the nervous disorder of digestion, associated with diarrhœa.

Myristica, in mild cases of asthenic diarrhœa, is recommended by Dr. PEREIRA as a substitute for opium, with warm brandy and water (if not contra-indicated) as a vehicle.

Nitricum Acidum Dilutum, in doses of gr. v–xv, combined with laudanum (ɱxv–xx), in a little vegetable infusion, has been recommended in chronic diarrhœa.

Nux Vomica is highly praised by Prof. GRAVES, in obstinate chronic diarrhœa, which resists ordinary remedies, and in that form, especially, which accompanies exhaustion after fevers. It may be combined with opium and sulphate of copper.

**Opium* is frequently given, alone or in combination with other remedies. Dr. SPENDER says it is now and then absolutely necessary, and it should always be prescribed in comparatively small and frequent doses, so as to obtain the least physiological with the most medicinal effect. Let the wine of opium be given to an adult, in the quantity of three or four minims (with an ounce of chloroform water), five or six times in the twenty-four hours; and the remedy ought, invariably, to be left off by degrees. In ordinary *choleraic diarrhœa* or *cholera morbus* of adults, no remedy will so promptly relieve the cramps and pain, and check the purging, as the hypodermic administration of *morphiæ sulphas*, gr. ss.

Plumbi Acetas, by the mouth or in the form of an enema, is often an effectual remedy.

Potassii Chloras is recommended by Dr. COPLAND in chronic mucous diarrhœa, with whitish, grayish, or mucilage-like stools, arising from the absence of bile, etc. Professor BONFIGLI lately urges it in vaso-paralytic diarrhœas. In grave cases of cachexia, connected with great nervous depression, the diarrhœa diminishes, but does not completely cease. In obstinate cases, there are alterations of the vascular parietes (amyloid or fatty degeneration), or ulcerative lesions of the mucous membrane. These require an energetic and prolonged use of the remedy. It is of no use if the diarrhœa is kept up by an active process of the mucous membrane, catarrhal enteritis, etc.

Quercûs Cortex, in decoction, is sometimes serviceable. Acorns, roasted and powdered, have also been used.

Salicin, in cases of chronic diarrhœa dependent on want of tone, is recommended by Dr. AITKIN. It should be administered in a dose of five or six grains, perhaps combined with a grain of ipecacuanha. Let them be mixed into a couple of pills, and taken three or four times a day. This plan seldom fails to appease an obstinate diarrhœa.

Tannin, with opium, sometimes proves of surprising efficacy in cases of chronic diarrhœa which have resisted all ordinary treatment, and which are not dependent on obstructive disease of the heart or liver. It is especially useful where there is an irritable, weakly mucous membrane. It may be given in the form of a pill or mixture.

Terebinthinæ Oleum in Stupes, applied to the whole abdomen and allowed to remain on as long as the patient will endure them, is often of great benefit. Internally, see F. 547.

Zinci Oxidum, in doses of gr. iij–v, thrice daily, has been recommended by Dr. WARING-CURRAN. Dr. BONAMY, of Paris, has employed the method indi-

cated by M. GUBLER, that is to say, 52½ grains of oxide of zinc, mixed with 7½ grains of bicarbonate of soda, and divide into three or four doses, to be taken every three hours. M. BONAMY has not observed any vomiting. He sums up the advantages of the treatment thus: 1st. *Superiority of action;* since all the cases of diarrhœa in which oxide of zinc was employed with success, had resisted other means of treatment; and since the diarrhœa re-appeared as soon as the oxide of zinc was replaced by another agent. 2d. *Rapidity of action;* diarrhœa dating for several months, was favorably modified after the administration of the first dose.

Zinci Sulphas, combined with ipecacuanha and opium, occasionally proves of advantage.

Blisters. A small blister to the abdomen is often very effectual in obstinate sub-acute diarrhœa.

Enemata of cold water have recently been found very useful by Dr. M. J. B. MESSLER. (*American Journal Medical Science,* July, 1878.)

DYSENTERY, ACUTE AND CHRONIC.

ACUTE DYSENTERY.

AUSTIN FLINT, M. D., NEW YORK.

In *sporadic* dysentery, if we have reason to conclude that fæces are retained in the large intestine, it is a rational procedure to first take steps to secure a complete evacuation of such an accumulation. Castor oil is a remedy which has long been employed, and is one well suited to meet the indication in these cases. Salines have been used for the same purpose, and perhaps are to be preferred, because they are far more easily taken, and afford more relief. The next indication is to keep the inflamed intestine perfectly quiet, which is best accomplished by the use of *opium.* Opium may be administered by the mouth, by the rectum, or hypodermically. Perhaps we succeed better in securing quietude of the large intestine by the use of anodyne enemas than by the use of opium, either by the mouth or hypodermically—the effect upon the large intestine seems to be more direct. After a day or two it may be found that the alimentary canal is again more or less loaded, and, if deemed necessary, the salines or the oil can be repeated. A bland diet is necessary, and cold water enemas for the tenesmus.

On the other hand, in *epidemic* dysentery, purgatives are to be

avoided. Salines, which operate by producing a more or less abundant watery transudation, are contra-indicated. So far as medical treatment is concerned, our chief reliance must be placed upon opium. Administer opium early and persistently, and to the extent of absolutely quieting the intestines, but at the same time avoiding the risk of narcotism. It is a noteworthy fact that the quantity of opium which can be administered in these cases, without exposing the patient to danger from over-use of the drug, is sometimes very large.

Astringents may be administered, provided they are well tolerated by the stomach, with a certain amount of benefit—not marked, however—but they should never displace the use of opium.

Supporting measures must also be employed, and with regard to alcoholics, the same is true as with reference to opium—there is an increased tolerance. We cannot go too far, in severe cases of epidemic dysentery, in the use of alcohol, if we do not carry it beyond its supporting effect, and the life of the patient may depend upon its use. *The persistent use of opium and alcoholics is the most essential feature of the treatment of epidemic dysentery.* If the disease be associated with other affections, additional indications may be derived from the latter. For example, if the disease be associated with malaria, the use of *quinine* is indicated, and other indications may be developed by complications with other diseases.

DR. CARL SCHWALBE, COSTA RICA.

In the *Deutsches Archiv für Klinische Medicin*, March, 1875, this writer gives a very judicious treatment of acute dysentery as it occurs in hot climates, by pursuing which he had the good fortune not to lose a case. He advises, whenever a diarrhœa sets in during a heated term, or immediately after a marked fall in the temperature, to suspect the possibility of dysentery, and at once to administer a large enema of *lukewarm water*, 100° Fah., after it has been thoroughly boiled. This should be repeated until one and a half to two gallons have been thrown up, and the colon thoroughly emptied. After the onset of the dysenteric symptoms, these copious clysters should be repeated thrice daily. Against the tenesmus, when very annoying, Dr. SCHWALBE uses:

563. R. Atropiæ sulphatis, gr. j.
Aquæ destillatæ, f. ℥j. M.

Two or three drops every half hour, in water, until the pupil enlarges and the throat feels dry.

When there is much intestinal pain the following recipe proves of value:

564. ℞. Acidi muriatici diluti, f.℥ ij.
Morphiæ sulphatis, gr. ij.
Aquæ destillatæ, f.℥ iij. M.
A teaspoonful three or four times daily.

Mustard plasters should be applied to the abdomen. The diet should be fluid and nutritious. White of egg water, made by shaking thoroughly the whites of four eggs in a pint of boiled and cooled water, is especially serviceable.

PROF. W. C. MACLEAN, M. D., ENGLAND.

Ipecacuanha should be administered in large doses as early in the disease as possible. From grs. xxv to xxx should be given, in as small a quantity of fluid as possible. Some advise the administration half an hour previously of ♏xxx of laudanum, or a few drops of chloroform. The patient should be kept perfectly still in bed, and abstain from fluid for at least three hours. If thirsty, he may suck a little ice, or may have a teaspoonful of cold water. Under this management, nausea is seldom excessive, and vomiting rarely troublesome, usually not setting in until two hours after the medicine has been taken. *Sinapisms* or *turpentine stupes* should be affixed to the abdomen. In from eight to ten hours, according to the urgency of the symptoms and the effect produced by the first dose, ipecacuanha, in a reduced dose, should be repeated, with the same precautions as before. The effects of this treatment are surprising, and soon manifest; the tormina and tenesmus subside, the motions quickly become feculent blood and slime disappear, and often, after profuse action of the skin, the patient falls into a tranquil sleep, and awakens refreshed. The treatment may require to be continued for some days, the medicine being given in diminished doses, care being taken to allow a sufficient interval to admit of the patient taking some mild nourishment suited to the stage of the disease. As the disease abates, the dose should be reduced, but it is well to administer grs. x–xij at bedtime for a night or two, after the stools are, to all appearance, healthy.

Fomentations, turpentine stupes, or chloroform liniment, to the abdomen, lessen tormina and diminish suffering. If a little diarrhœa without the dysenteric odor remain, it may be checked with a small

quantity of an astringent mixture; but *astringents*, in any shape, during the acute stage, are not only useless but dangerous.

The *hot bath* is of great service in the mild forms of dysentery. It should be brought to the bedside, and kept at a high temperature, the patient remaining in until he feels faint. He should then be quickly and carefully dried, put to bed, and given ipecacuanha (gr. xv–xx,) which may require to be repeated in eight or ten hours, the patient abstaining from all fluid for some hours after taking the medicine, and turpentine stupes being applied to the abdomen. This simple form of treatment, if it be resorted to early, will suffice in a great many cases of the mild form of dysentery which follows chills, without much charging the system with malaria.

DR. NATHAN S. DAVIS, CHICAGO.

This teacher states that in the treatment of acute dysentery he has never succeeded with the evacuant treatment, by laxative salines. Nor does he think highly of the method by ipecacuanha in large doses, although in some cases he states that it does produce the happiest effects.

The plan he usually follows in the first stage is to give, if the patient has not had free evacuations at the beginning of the attack, gr. iv–v of calomel, either with or without gr. ij–iij of ipecac., followed in five or six hours by a laxative of castor oil, sulphate of magnesia, or Rochelle salts, as it is safe to assume in such cases that there is more or less fæcal matter retained in the alimentary canal.

The patient is then placed upon some combination that is sufficiently anodyne to overcome the pain and reduce the frequency of the discharges. *Turpentine* has some property that diminishes inflammatory action of the mucous membrane, especially after the first stage. It is not merely astringent or tonic, but it possesses an alterative influence that is valuable in the peculiar condition of the vessels that belongs to these cases after the acute stage.

565. ℞. Olei terebinthinæ,
Tincturæ opii, āā f.℥ iij.
Acaciæ,
Sacchari albi, āā ℥ iij.
Aquæ menthæ, f.℥ iij. M.
One teaspoonful every four hours.

When this emulsion begins to nauseate it should be suspended. In

many instances it may profitably be alternated with an anodyne carbolic acid solution, as:

566. ℞. Acidi carbolici crystal., gr. vj.
Tincturæ opii camphoratæ, f. ℥ iss.
Glycerinæ, f. ℥ ss.
Aquæ, f. ℥ ij. M.
A teaspoonful every four hours.

DR. LIDDELL.

This writer (*Am. Jour. Med. Sci.*, Jan., 1879,) believes that *saline purgatives* are of great value in the following cases: (1) Those in which the bowels are habitually constipated, for example, females and people of sedentary habits, for such cases are generally burdened with intestinal obstructions, which can be got rid of only by repeated doses of purgative medicine. (2) Cases of bilious dysentery. (3) Cases where portal congestion is present. (4) Cases complicated with malarial fever, or with malarial intoxication and ague-cake; and (5) Cases of chronic dysentery. In all cases the doses should be repeated until bilious and feculent matter appears in the stools. In such cases, he exhibits *cream of tartar*, in doses of three and four drachms every three or four hours, until large watery motions, tinged with bile, are produced, and the relief, as to all the distressing and dangerous symptoms of the disease, was usually "something wonderful."

CHRONIC DYSENTERY.

The treatment of this disease can be conducted on two different principles. (1) By medication by the mouth. (2) Medication by the rectum.

We shall first consider the former:

DR. B. E. THOMPSON, OF THE SEAMAN'S HOSPITAL, GREENWICH,

After trying many drugs, finds them all inferior to *ipecacuanha*. (*British Medical Journal*, January, 1876.) He believes the disease is best treated by rigidly keeping the patient at rest in bed, in a supine position; by carefully regulating the temperature of the room to about 62 deg. Fahr.; by restricting the diet to few and simple foods, chiefly milk and mutton; and by administering, at frequent short intervals, every three hours, small doses (3 to 5 grains) of the powdered ipecacuanha. If nausea is produced, the dose is diminished or omitted for a time, as it is very desirable to avoid inducing any disinclination to

food. Alcohol, in any form, very decidedly aggravates the symptoms, and it must be always strictly forbidden.

W. E. WHITEHEAD, M. D., ASSISTANT SURGEON, U. S. A.,

Also recommends *ipecacuanha* in chronic dysentery. He directs the following treatment:

A *hot salt-bath* daily, or several times a week, just before going to bed; such nourishing food as best agrees; flannel next the skin; a well-ventilated, dry and warm sleeping-room; and

567. ℞. Pulveris ipecacuanhæ, ʒ iij.
For twelve powders. One to be taken morning and evening, on an empty stomach.

As improvement takes place lessen the dose of ipecacuanha to ten grains twice a day, and then to eight grains at bedtime. After the ipecacuanha is stopped, it may be followed with advantage by ten drops of the *muriated tincture of iron* morning and night. Other testimony to the value of ipecacuanha in chronic dysentery has been recently given by Dr. A. A. WOODHULL, U. S. A., and others.

MR. R. DONALDSON, BRITISH INDIA.

This writer, in the *Indian Medical Gazette*, June, 1876, recommends the *compound tincture of benzoin* as a most efficient remedy in dysenteric affections. He says that, in Burmah, dysentery is a very common affection, and in the European, as well as in the native, exhibits a marked tendency to become chronic. In many of these cases, ipecacuanha appears to have little or no effect; any persistence in the treatment by large doses of this drug, far from being productive of good, is fruitful of positive mischief. The stomach is rendered so irritable by it, that the patient is unable to retain nourishment; and he then suffers from exhaustion, the combined effect of the disease and innutrition. In these cases, the tincture of benzoin, given in combination with astringents—notably with logwood—has been found extremely useful; often, indeed, acting like a charm; and it may be truly said of it, that its powers of healing diseased mucous membranes equal its performances when applied externally to wounds. The formula recommended is:

568. ℞. Tincturæ benzoini comp., f. ʒ ss.
Tincturæ catechu comp., f. ʒ j.
Tincturæ opii, ♏ x.
Extracti hæmatoxyli, gr. x.
Aquam, ad f. ʒ j. M.
For a draught: to be given thrice daily. If necessary, the remedy may be administered by the rectum.

LUCIUS M'GUIRE, M. D., SAN FRANCISCO.

Our author recommends the use of *iron* in chronic dysentery:

569. ℞. Ferri subsulphatis, ℈ ij.
Glycerinæ, f. ℥ j.
Aquæ, f. ℥ vij. M.
One-half to be given as an injection every two hours.

A single injection will often arrest the discharges almost immediately. The doctor has had occasion to try the Monsell salt a number of times as a *dernier resort* in dysentery, and with uniform success.

MEDICATION BY THE RECTUM.

Some excellent results in chronic dysentery have been reported by

DR. RICHARD B. MAURY, MEMPHIS,

In the Atlanta *Medical and Surgical Journal*, December, 1872, and later in the New York *Medical Journal*, March, 1876. The patient is placed in the left lateral position, used for making uterine examinations, and the interior of the rectum is exposed to view by means of a small Sims', or other appropriate speculum. This reveals one or more superficial ulcerations of the mucous surface. These are carefully cleansed with cotton-wool, and a solution of nitrate of silver, ℥ ij to f. ℥ j of water, is thoroughly and carefully applied to the ulcerated surface. The treatment causes considerable pain, which should be relieved by morphia hypodermically, and the patient be kept in bed. The improvement is immediate, the movements become less frequent, and the sanguineous discharges ceases. In from four days to a week the caustic application should be repeated, which is often sufficient to effect a permanent cure. The following specific directions are given:

Proceed deliberately and carefully, as in any other surgical procedure. Always etherize the patient, and always stretch the sphincter ani. When properly done, these are both perfectly safe measures. The patient being etherized, the operator is enabled to explore the rectum, and make his applications deliberately and thoroughly. Paralyzing the sphincter is not only necessary to complete and satisfactory explorations, but the quieting influence secured thereby to the rectum can hardly be over-estimated. Put the patient in Sims' position for uterine examinations, and use Sims' vaginal speculum for examining the anterior and lateral walls of the rectum, and the bivalve with hinges on one side for examining the posterior wall.

If much disease is discovered on examination, the surgeon may use nitric acid. If ulceration is superficial, and the mucous membrane not much hypertrophied, the nitrate of silver does well. The patient should be required to remain in bed for a week or two, on a milk and meat diet.

DR. H. C. WOOD, JR., PHILADELPHIA,

Recommends large rectal injections of nitrate of silver:

570. R. Argenti nitratis, ℥j.
Aquæ, Oiij. M.
For one injection.

No force should ever be used. The patient should be brought to the edge of a hard bed, his buttocks resting upon a hard pillow in such a way as to elevate the pelvis, and cause the injected fluid naturally to flow downward and inward. A well-oiled, smooth, somewhat flexible, hard tube, with openings in the sides, (an œsophageal tube will answer well,) and with a closed end, must then be gently and slowly introduced from eight to twelve inches into the rectum. The free outer end of this may be fastened to a flexible india-rubber tube, in the end of which a funnel is inserted. This being elevated five or six feet, the water warmed to the temperature of the body is poured in, and by its own weight, with irresistible gentleness, forces its way into the gut. Other writers assert that this extensive irrigation with simple warm water is all-sufficient. (ALOIS MONTI.)

The securing of an even and easily-regulated hydrostatic pressure is an essential feature of this method. *Still more essential is the distention of the rectum with fluid before attempting to pass the tube through the sigmoid flexure.* This precaution secures the smoothing out of the folds of mucous membrane and straightens the curves of the flexure, thus rendering the passage of the tube perfectly safe and easy.

DR. B. H. WASHINGTON, TENNESSEE.

This physician, whose experience in obstinate chronic dysentery has been considerable, is convinced that the treatment by enema and scarification fails unless the ulcerations are strictly confined to the rectum. (*Nashville Journal of Medicine and Surgery*, 1874.)

He directs his patients to use a wet bandage covering the whole stomach and bowels. This is covered with a dry bandage on the outside, so attached that both lie smooth on the person. It should be wet anew in cold water when it grows dry or too warm. Every other

day the patient is dry cupped down the whole length of the spinal column. As the skin is almost always dry and torpid, the patient should be washed down daily with hot water and rubbed with a coarse cloth, until the action of the skin is well stimulated; after which such a bath twice weekly will be sufficient.

He also encourages the patient to drink as freely as possible of pure water, containing gr. xxx–xl of bicarbonate of potash to the pint. Under this treatment, he has found some exceedingly obstinate cases recover completely.

RÉSUMÉ OF REMEDIES.

ACUTE DYSENTERY.

Aconitum, gtt. ij of the tincture of the root, every hour, in acute sthenic cases, has been much praised.

Argenti Nitras, in doses of gr. ss–iss daily, reduced to fine powder, and conjoined with Dover's powder in the form of pill, is highly recommended by Dr. WARING and others, in the advanced stages of acute dysentery.

Belladonna, both internally and externally, is often extremely efficacious.

Bismuthi Subcarbonas, ʒj–ij, suspended in mucilage, f ʒ i–ij with laudanum, ʒ ss, forms an excellent enema. The lower bowel should first be gently washed out with warm water.

Carbolicum Acidum. Considerable success in the treatment of dysentery is reported by Dr. A. M. RAGLAND, of Texas, (*Va. Med. Monthly*, October, 1876,) by the use of the following:

571. ℞. Acidi carbolici, gtt. x.
Syrupi rhei aromatici, f. ʒ j.
Olei limonis,
Olei sassafras, āā gtt. v. M.
A teaspoonful every two or three hours.

If tormina and tenesmus are present, add ten drops of laudanum to each dose.

Creasotum has been found by Dr. J. R. CUSHING, of Chicago, a valuable anti-dysenteric remedy.

572. ℞. Creasoti, gtt. xx.
Acidi acetici, gtt. xl.
Morphiæ, gr. ij.
Aquæ, f. ʒ ij. M.
A teaspoonful every two hours until relieved.

In connection with this, he was accustomed to cover the bowels with cloths saturated with the following liniment:

573. ℞. Aquæ ammoniæ,
Olei sassafras, āā f. ʒ ss.
Tinct. opii, f. ʒ ij.
Olei olivæ,
Olei petrolei, āā f. ʒ ij. M.
For a liniment. (*Chicago Medical Journal*, January, 1875.)

Ergotin, in doses of gr. vj, in emulsion, or in bland enema (gr. xij–xv), has been used with excellent results by Dr. GROSS. (*Practitioner*, November, 1868.) One of the effects noted under this treatment, was the speedy reduction in the quantity of blood voided.

Gambogia. MALGAIGNE and BETZ have found minute doses of gamboge (gr. ¼, three times a day,) valuable in dysentery.

Hydrargyrum, formerly always resorted to in large doses, in acute dysentery, has now fallen into comparative disuse, except as an occasional aperient, and ipecacuanha has taken its place. Particularly in the asthenic and scorbutic forms of dysentery, mercury, in every form, should be avoided. If, in exceptional cases of acute dysentery, it be employed, the following formula, for many years very generally used in Southern India, may be given:

574. ℞. Pilulæ hydrargyri, gr. ij–iij.
Pulveris ipecacuanha radicis, gr. i–ij.
Opii, gr. ¼. M.
Make pill. Take one every four or five hours.

The following is also an effectual combination:

575. ℞. Hydrargyri chloridi mitis, gr. ss.
Morphiæ sulphatis, gr. ¼.
Quiniæ sulphatis, gr. ij. M.
Make pill. Take one every two or three hours.

Iodinium. Dr. PARIS recommends:

576. ℞. Iodinii, gr. ix.
Potassii iodidi, gr. xv.
Aquæ destillatæ, f.℥ ij. M.
To be employed as an enema in dysentery. It is sometimes necessary to administer it twice in the course of the twenty-four hours, and to continue its use several days. One of the principal effects of the iodine enema is to relieve, promptly, the tenesmus.

**Ipecacuanha,* justly called "radix anti-dysenterica," is of the highest value in dysentery. Although, from its introduction, (by PISO, in 1658,) its power in this disease has been more or less recognized, it was not—in consequence of the practice of conjoining it with other remedies supposed to possess similar virtues—until 1858 that its real value was demonstrated by Mr. DOCKER, (*Lancet*, July and August, 1858,) who re-introduced the original plan of PISO and HELVETIUS, of giving it alone, in large and effective doses. The following facts now seem to be established: that acute dysentery can be successfully and speedily treated by large doses of ipecacuanha; that this remedy is more effectual in the acute than in the chronic forms; that large doses (gr. xxv–xxx) may be given with perfect safety, without fear of hyperemesis or other ill effects. The mode of treatment, in the main, now generally practiced, is that detailed by Dr. W. C. MACLEAN, in the article on dysentery, in REYNOLDS' *System of Medicine*, a condensed statement of which has already been given.

Ixora Dandxuca. This East Indian drug comes well recommended. It acts best when cases are seen early. It possesses the advantage of not creating

nausea, while it has an aromatic and agreeable taste. It has also been given in 15 to 30-grain doses, three or four times a day, and may be administered to patients of all ages.

Limonum Succus should form an essential part of the treatment when the state of the gums or other circumstances lead to the belief in a scorbutic taint. A mixture of equal parts of lime juice, decoction of cinchona, and port wine, was employed with good results in the British army, in the first Burmese war.

**Opium* fulfills three important indications: 1. Allaying pain and muscular excitement; 2. Moderating the peristaltic motion of the intestines; and, 3. Promoting the cutaneous secretion. It is considered by Dr. WARING as, on the whole, however, inferior, especially at the onset of an acute attack, to ipecacuanha. A preliminary dose of opium is often of great service in enabling the stomach to retain ipecacuanha, and in preventing its emetic operation. The dose of solid opium may be increased from gr. j to gr. iij–iv, three or four times a day, not only without inconvenience, but with benefit, there being a marked tolerance of opium in this disease. The signs that its administration has been carried as far as is consistent with safety, are nausea and vomiting, tympanitic distention of the abdomen, and scanty stools. *Tormina* and *tenesmus* are best relieved by opiate enemata. Frequently, *morphia*, hypodermically, acts much better than by the mouth, relieving the vomiting, pain, and tenesmus, as if by magic.

Plumbi Acetas, in doses of gr. iij–iv, in combination with Dover's powder (gr. iv–v), may be given with advantage in the advanced stages of acute dysentery, especially when the stools contain much mucus. The following *enema* may often be advantageously employed:

577. ℞. Plumbi acetatis, gr. x.
Acidi acetici diluti, ♏x.
Morphiæ acetatis, gr. ¼.
Aquæ tepidæ, f.℥iv. M.

Potassii Bitartras. In the advanced stages of acute dysentery, when laxatives are indicated, and the stools abound with thick, viscid mucus, cream of tartar seems to exercise a special influence in diminishing the mucous intestinal secretion and in unloading the portal system. It may be given with equal parts of sulphur, or with jalap, in the form of the approved pulvis jalapæ compositus.

Potassii Chloras. Injections of this salt have been strongly advocated:

578. ℞. Potassii chloratis, ℥ss.
Glycerinæ, f.℥ss.
Aquæ, f.℥iij–iv. M.

For an injection. Two or three a day, the patient to retain them as long as possible.

**Quiniæ Sulphas*, in full doses (not less than ℈j, in solution,) should be given in malarial dysentery, and repeated until cinchonism is induced. Ipecacuanha should then be given as directed.

Sodæ Chlorinatæ Liquor. Dr. E. M. MORSE, (*California Medical Gazette*, September,

1868,) has met with marked success by throwing up into the rectum and colon from two to five pints of Labarraque's solution of chlorinated soda, largely diluted, in chronic simple uncomplicated dysentery, by which are meant those cases not kept up by organic disease of the heart, or phthisis pulmonalis, nor dependent on immediate obstruction of the liver or spleen. The right strength for the first enema is twenty parts of water to one of Labarraque's solution.

Sulphur appears to exercise a favorable influence in some cases of chronic dysentery.

Tannin, in combination with opium and ipecacuanha, is often of service.

Zinci Oxidum, in doses of gr. iij–v thrice daily, is recommended by Dr. WARING-CURRAN.

Zinci Sulphas, combined with ipecacuanha and opium, has been employed with success.

Water Belt. Dr. W. C. MACLEAN recommends the use of a water belt over the abdomen for some hours daily. It acts as a fomentation, and the steady, uniform pressure it maintains seems to favor the absorption of the fibrine effused between the intestinal coats. If there be much uneasiness about the anus, a water compress over the part often affords more relief than an opiate enema. The *cold hip-bath* daily, for a few months, is of service.

Mineral Waters. The Oak Orchard Water, of Lockport, New York, and the Rock Alum and similar springs of Virginia, possess astringent and tonic properties often of very decided benefit in cases of chronic dysentery.

EXTERNAL MEASURES.

Turpentine Stupes are highly serviceable in lessening tormina and tenesmus.

**Leeches* to the verge of the anus often afford great relief to the tormina and tenesmus, and, by unloading the portal and hemorrhoidal veins, exercise a favorable influence in the course of the disease.

Cathartics. When given judiciously, mild cathartics are often beneficial, but ill-chosen or ill-timed, they do much mischief. In sporadic cases a full dose of *sulphate of magnesia* or *bitartrate of potassa* at the outset will often cut short the attack.

Bandage. A large flannel roller around the bowels acts in preventing the peristaltic action of the intestines.

Enemata. Large enemata (four or six pints thrown into the transverse colon by means of a long flexible tube per rectum) are sometimes given. Small enemata (f. ℥ iss–ij) containing opium and ipecacuanha, are often useful in allaying tormina and tenesmus. Hot and cold water enemata have each their advocates.

Position. The tenesmus is frequently relieved by placing the patient in the prone position, with pillows under the abdomen, so as to elevate the buttocks and rectum.

Suppositories. Dr. J. H. CARSTENS (*Detroit Review of Medicine*, February, 1875,) considers the treatment of dysentery by suppositories "the most rational and scientific," and instances many successes. His prescription is:

579. ℞. Pulveris ipecacuanhæ, ℥ ss.
Pulveris ergotæ, gr. xv.
Quiniæ sulphatis, gr. iv.
Olei theobromæ, q. s. M.
Make six suppositories. One every two hours.

CHRONIC DYSENTERY.

Alum is much less employed in chronic dysentery now than formerly. It may be given in combination with Dover's powder.

Ammonii Chloridum. Dr. WILLIAM STEWART (*Madras Monthly Journal of Medical Science*) has found chronic dysentery, associated with chronic disease of the liver, yield to a few 20-grain doses of the chloride of ammonium, after ipecacuanha and other remedies had failed.

**Argenti Nitras* is of great service in chronic dysentery. It should be given in the same manner as directed for the advanced stage of the acute affection.

Benzoinum has proved successful in the hands of Dr. CHIPPERFIELD, of Madras, (*Madras Quarterly Medical Journal*, January, 1867,) given as follows:

580. ℞. Tincturæ benzoini compositæ, f. ℥ j–ij.
Tincturæ opii, ♏ xx–xl.
Pulveris acaciæ, gr. xxx.
Aquam carui, ad f. ℥ vj. M.
Dose—One-fourth part every four hours.

**Bismuthi Subnitras* is highly praised in subacute and chronic dysentery by TROUSSEAU and RÉCAMIER.

Carbo Ligni was recommended by Prof. NATHANIEL CHAPMAN, who found it, internally administered, to remove the acrid and offensive character of the stools.

**Cupri Sulphas*, combined with opium, is often highly serviceable in chronic dysentery.

Fermentum has been recommended for removing the fœtor of the stools and diminishing their frequency:

581. ℞. Fermenti, f. ℥ x.
Camphoræ, gr. xxx.
Spiritûs ætheris nitrosi, f. ℥ ss. M.
A tablespoonful every two or three hours, according to the severity of the symptoms.

Ferri Chloridi Liquor, in doses of gtt. iij–vij, well diluted with water and syrup, is frequently employed in France. The same doses in enema, combined with opium, are often serviceable.

**Ferri Nitratis Liquor* is of great benefit, particularly in those anæmic from loss of blood and the depraving influence of malaria.

Ferri Subsulphatis Liquor, diluted in enema, has been recommended.

Hæmatoxylum, in decoction or extract (gr. x–xxx,) is an excellent tonic astringent, but inadmissible so long as any active inflammation exists.

Hydrargyri Chloridum Corrosivum, gr. j to water Oj, f. ℥ j *ter die*, will often be found to relieve and cure the most obstinate cases.

**Ipecacuanha*, in the form of Dover's powder, is often of the greatest benefit in chronic dysentery, given at bedtime in full dose, (gr. x-xij,) or in small, frequently-repeated doses, in combination with nitrate of silver.

Nitro-muriaticum Acidum Dilutum (in lotion of f.℥j to aquæ Oj,) applied to the abdomen, is of benefit, especially when there is hepatic disease.

**Opium* is of great value in chronic dysentery, and may be given combined with nitrate of silver, sulphate of copper, or sugar of lead.

Plumbi Acetas, though less effectual perhaps than nitrate of silver or sulphate of copper, may be employed at an earlier stage than either of those salts.

Potassii Bitartras is one of the best purgatives which can be employed when laxatives are indicated.

DYSPEPSIA.

JOHN SYER BRISTOWE, M. D., LONDON.

The first thing to be done is to seek the origin of the dyspeptic symptoms. See that the *teeth* are in good order; that the patient masticates well; that he gives ample time to eating; that the hours of meals are regular; that the food is wholesome, plain and digestible. Note, also, the condition of the stomach, and decide whether the dyspepsia is primary or secondary to some other affection.

In all cases of chronic dyspepsia, hygienic treatment, moderate exercise, regular hours, ventilated rooms, and change of air and scene, are of extreme importance.

DR. C. F. KUNZE, GERMANY.

The use of narcotics and alcoholics in excess must be abandoned. The patient should take only a small quantity of food at a time. The injurious habit of drinking large quantities of water must be abolished. If there is deficiency of hydrochloric acid in the gastric juice, give:

582. ℞. Acidi hydrochlorici, gtt. x.
Aquæ, f.℥iv.
Syr. simplicis, f.℥j. M.
A tablespoonful every two hours.

If there is fermentation of the contents of the stomach, they should be removed by an emetic or stomach-pump, and the patient take:

583. ℞. Sodii sulphitis, gr. ℥ij.
Aquæ, f.℥iv. M.
A tablespoonful three or four times a day.

Or:

584. R. Benzinæ, gtt. xx.
Aquæ, f. ʒ iij.
Syrupi simplicis, f. ʒ j. M.
For one dose.

DR. HENRY GIBBONS, SAN FRANCISCO.

This physician also strongly commends the use of five drops *chlorhydric* acid in a tablespoonful of water, after eating, when the stomach feels burdened. Not only in his own case, but in a very large proportion of dyspeptic affections among patients, he has found it a most valuable remedy. From three to five drops is the proper quantity, and it may be taken either regularly before or after each meal, or on special occasions—*pro re nata*. It is the best thing he has ever given for cardialgia, or any affection of the stomach arising from excessive acidity. It should not be too much diluted, nor should it be sweetened.

DR. I. BURNEY YEO, LONDON.

In regard to the *flatulent* form of dyspepsia, this experienced practitioner considers that, in the first place, it is necessary to maintain for some time a lax condition of the bowels. In order to get rid of the tendency to the accumulation of gas in the upper part of the intestinal canal, it is absolutely necessary that not even a temporary block should be allowed to exist in the lower regions; hence the value in such cases of a mild course of laxative mineral waters, as Carlsbad, etc., which secures two or three loose evacuations before any food is taken. Even in cases of organic constriction, it often proves of the greatest service. There are some patients with whom no aperient produces so much relief as *castor oil*, the comfort of each day depending on a dessertspoonful of this medicine, taken in the early morning. The Hunyadi water also answers well, and is often efficient in small quantities. No breakfast should be taken until the bowels have been freely relieved.

With regard to food and drink, tea, coffee, cocoa, and all hot and sweet beverages, must be entirely banished from the dietary. In such conditions, tea or coffee will almost immediately disturb the heart's action. Malt and sherry are also under the ban. Sound claret and water, or milk mixed with some alkaline effervescing water, are the safest beverages; but much fluid of any kind, is hurtful. Oatmeal porridge is still better. Animal food should be restricted to roast or

boiled mutton, the lighter kinds of fish, and a little broiled fat bacon. Fruit, jellies, and marmalade, should take the place of butter.

Of drugs, he has found great use in a pill of creasote, carbonate of magnesia, and extract of hop, taken immediately after every meal; and when this has failed, he has seen excellent results from a few grains of ox-gall, made into a pill with powdered rhubarb, and taken after breakfast and dinner.

One of the finest preparations in dyspepsia with flatulence, is the following:

585. ℞. Sodii sulphitis, ℥j.
Tincturæ nucis vomicæ, f.℥v.
Aquæ, f.℥iv. M.
A teaspoonful thrice daily, after meals.

PROF. T. GAILLARD THOMAS, NEW YORK.

586. ℞. Magnesiæ sulphatis, ℥ij.
Ferri sulphatis, gr. xvj.
Acidi sulphurici diluti, f.℥j.
Aquæ, Oj. M.
Two tablespoonfuls in a tumbler of ice-water, every morning upon rising, when a ferruginous tonic, combined with a saline, is indicated.

587. ℞. Potassii et sodii tartratis, ℥ij.
Vini ferri amari, f.℥ij.
Acidi tartaraci, ℥iij.
Aquæ, f.℥xij. M.
Two tablespoonfuls in a tumbler of ice-water, before breakfast. Should this dose be not sufficient, two or three may be taken daily, for the result will prove tonic, and reparative as well as cathartic.

588. ℞. One rennet, washed and chopped.
Vini rubri, Oj. M.
Macerate for twelve days, and then decant, filter, and add:
Acidi nitro-muriatici diluti, f.℥ij.
Tincturæ nucis vomicæ, f.℥ij.
Bismuthi subnitratis, ℥ij. M.
One tablespoonful in a quarter of a tumbler of water, before each meal, as a digestive tonic.

This prescription embraces the tonic properties of nux vomica, and the peculiar restorative influence of bismuth, with a fluid which resembles the gastric juice. In many cases of habitual indigestion, our author has obtained from it the best results.

589. ℞. Quiniæ sulphatis, ℈ij.
Ferri sulphatis, ℈j.
Acidi sulphurici aromatici, gtt. x.
Mucilaginis acaciæ, q. s. M.
Divide into twenty pills. One to be taken three times a day, before each meal.

DR. WILLIAM BRINTON, LONDON.

This writer gives the following useful hints in regard to the *salts of iron*, in dyspepsia. They are generally beneficial, not only in proportion to the anæmia and general derangement of nutrition present, but in proportion to the patient's deprivation of a due share of light, air, and exercise, which is the cause of so much of the dyspepsia of civilized life. Hence, iron is more useful in females than in males; more in the sedentary dyspeptic than in the florid and over-fed. Where great nausea and irritability exist, it should generally be avoided. It should always be given immediately after a meal, excepting after tea. The *effervescing citrate* will generally be borne by the most delicate stomach. Neither this nor any other salt of iron should be given in doses sufficiently large to cause nausea or flatulence. The *carbonate*, *phosphate*, *sulphate*, and *chloride*, form a scale of increasingly irritative preparations, and therefore demand not only a diminished dose, but an increased dilution. Thus, while we may give gr. x of the citrate as a common dose, gr. ij of the sulphate, and ℥vij–viij of the tincture of the chloride, with half a wineglassful of water, are as much as most dyspeptics will safely bear. The *oxide* and other comparatively insoluble preparations should be avoided. The efficacy of the salts of iron, in dyspepsia, often appears to be increased by conjoining them with the *sulphate* or *oxide of zinc*.

Cathartics, according to Dr. W. BRINTON, are of great service in dyspepsia in emergencies; of little service, almost hurtful, as prominent features in treatment, which ought always to aim at such a tonic effect as is incompatible with habitual purgation. They should be given in the smallest doses, on an empty stomach, either before dinner, in the shape of a slowly-acting pill, or early in the morning, in that of a more rapidly-acting liquid. The pill form is preferable, as a rule, especially when the aperient is often repeated, the liquid aperients, especially the saline, often acting injuriously on an irritable stomach. Castor oil, however, is, in many constitutions, an exception to this rule.

DR. ARTHUR LEARED, LONDON.

This author has brought forward some new views on the subject of dyspepsia, (*Brit. Med. Jour.*, May, 1879,) to wit, that the cause of most cases is not defective or impaired secretions, but a diminution of the contractile movements of the stomach. He recommends that the

principal meal should be taken early in the day, before the nervous system has been exhausted by nervous or bodily exertion. *Strychnia* is of great value in impaired gastric peristalsis, but care must be used in its administration, and a dose of $^1/_{20}$ of a grain should be but rarely exceeded. It should never be given in the form of pill.

Thymol has been found useful in checking flatulence by hindering fermentation, and charcoal capsules are recommended for the absorption of the gases when the stomach is unable to expel flatulency in consequence of temporary paralysis from over distention.

M. CHARTERIS, M. D., GLASGOW.

Of the many symptoms of dyspepsia, the more prominent may be met as follows:

For the loss of appetite, a bitter infusion, as:

590.	℞.	Ammon. sesquicarb.,	ʒj.	
		Potass. bicarb.,	ʒiss.	
		Infusum chirettæ,	ad f.ʒvj.	M.

A tablespoonful thrice daily.

For the flatulence, belching and wind on the stomach, we may order a warm carminative, as:

591.	℞.	Tinct. cardamom. comp.,	f.ʒiv.	
		Acid. hydrocyan. dilut.,	♏xl.	
		Spts. ammon. aromat.,	f.ʒij.	
		Tinct. zingib.,	f.ʒiij.	
		Spt. chloroform,	f.ʒij.	
		Aquæ carui,	ad f.ʒvj.	M.

A tablespoonful occasionally.

When the belching is accompanied by a "rotten-egg" flavor, showing the evolution of sulphureted hydrogen, charcoal biscuits should be ordered, and creasote or carbolic acid.

For simple heartburn, black sugar is efficacious, or eating an apple, or some liquor bismuthi. When there is gastrodynia, or cramp of the stomach, a brisk purgative, followed by carminatives with a mustard-poultice, gives relief.

Waterbrash or pyrosis is often brought on by some article of diet, as oatmeal. As a remedy, pulv. kino comp. can be recommended, and Friederichshall or Pullna waters.

The following is the treatment adopted at

THE DEMILT DISPENSARY,

New York, as described by Dr. D. LEWIS, in the *New York Medical Journal:*

When there is constipation, they have found the rhubarb and soda mixture most useful:

592. ℞. Pulv. rhei, ℥j.
Sodii bicarb., ℥iss.
Ol. menth. vir., gtt. iv.
Aquæ, ℥iv. M.
A tablespoonful before meals.

This alkaline mixture probably owes its efficacy to its stimulating action upon the gastric glands—a property of alkalies which has been amply demonstrated by many experimenters. When an additional laxative is necessary, a compound rhubarb pill is ordered at bedtime, or, what is preferable in many cases, the pill of aloes, belladonna, and strychnia:

593. ℞. Ext. aloës, gr. ijss.
Ext. belladonnæ,
Ext. nucis vom., āā gr. ¼. M.
One at bedtime.

In contrast with such cases are those patients who are anæmic, and complain of the symptoms common to that condition—loss of appetite, palpitation of the heart, intercostal neuralgia and headache. In some instances, this condition is a natural sequence of prolonged dyspepsia, but is more commonly dependent upon other causes, such as bad hygiene, overwork, or malarial influences. Tonic treatment is here indicated, and the following prescription is usually effective:

594. ℞. Quiniæ sulph., gr. xij.
Tr. ferri chloridi, ℥iijss.
Aquæ, ℥iv. M.
A teaspoonful in a wineglass of cold water, half an hour after meals. An aloes and belladonna pill is occasionally required at bedtime.

When there is irritability of the stomach (probably gastritis) with nausea and vomiting, a bismuth mixture is often ordered:

595. ℞. Bismuth. subnit., ℥iv.
Acid. nitric. dil., ℥iij.
Tr. nucis vom., ℥jss.
Aq. menth. pip., ℥iv. M.
A teaspoonful after meals. Shake well before using.

Since it has been pretty clearly demonstrated that bismuth acts mechanically by adhering to the mucous coat of the stomach, it is evident that a large dose should be administered. But the very large doses given by LUSANNE, MENNERET, and others (who gave ʒj per diem,) no doubt hinder the excretion of gastric juice, thereby causing the cachectic symptoms which those observers found to follow its prolonged use.

RÉSUMÉ OF REMEDIES.

Aloes, in doses of gr. ij–iv, combined with ipecacuanha (gr. j–ij,) two or three times a week, is useful in the dyspepsia of persons of relaxed habit, or those debilitated by long illness, especially if it be probable that the duodenum is implicated. (F. 593.)

**Argenti Nitras* is useful in many obstinate cases of dyspepsia attended with morbid sensibility and hypochondriasis. The following formula may be used:

596. ℞. Argenti nitratis, gr. ss.
Extracti hyoscyami, gr. ij–iv. M.
Make one pill. Take every night.

The quantity of the nitrate may be gradually increased to grs. ij–iij daily, and this may be continued with safety for six or eight weeks, but not beyond that time. It may sometimes be advantageously combined with small doses of quinine. The diet should be carefully directed. Or the nitrate may be given in solution:

597. ℞. Argenti nitratis crystallini, gr. vj.
Aquæ destillatæ, f.ʒ iij. M.
A tablespoonful to be taken at bedtime, on an empty stomach, and repeated every night, or every second, third or fourth night, according to the severity of the symptoms.

Argenti Oxidum was much employed by Dr. GOLDING BIRD in gastralgia, gastrodynia, and in those forms of dyspepsia attended with irritable stomach and pain after food. He regarded it as a valuable sedative and tonic, possessing all the virtues without the inconveniences of the nitrate. Dr. J. EYRE used it with advantage in pyrosis. It must be remembered that it cannot, in these cases, be combined with creasote, for violent decomposition, attended with heat, and even flame, follows the mixture of these substances.

**Arsenic* is a valuable remedy in *gastrodynia*, particularly when of a neuralgic character. Fowler's solution should be given after a meal, commencing with small doses (♏iij,) and gradually increasing them, adding a few drops of laudanum when large doses are reached, to prevent purging. Dr. RINGER recommends Fowler's solution (♏j–ij,) shortly before each meal, in many forms of chronic dyspepsia. He finds it very effectual in checking the morning vomiting of drunkards.

Aurantii Amari Cortex, in tincture or infusion, is an elegant tonic in dyspepsia.

Assafœtida, in combination with bitter tonics and mild aperients, is useful in dyspepsia attended with hypochondriasis and other mucous affections.

**Bismuthi Subnitras* is of great value in atonic dyspepsia. Dr. W. BRINTON finds it particularly useful in the "morbid sensibility of the stomach" of old writers. Dr. WILSON FOX especially recommends it in the milder forms of gastric inflammation. He finds that in *pyrosis*, when combined with opium, it seldom fails to relieve, but that in order to effect a cure a more direct astringent, like kino, is required. Professor R. J. GRAVES considers it one of the best remedies we possess in gastrodynia.

Boldo, and *boldine*, derived from a Brazilian plant, have been found to act as a stimulant to digestion and exert a favorable influence on torpid liver.

Calcis Aqua, in doses of f. ℥ ij in milk, is useful in dyspepsia connected with acidity of the stomach; also when the urine shows a strong acid reaction, and when vomiting is a prominent symptom.

**Calumba*, in infusion, is a valuable vegetable bitter tonic in atonic dyspepsia. It may be given at an earlier period than other remedies of the same class, and forms an excellent vehicle for other appropriate remedies.

Capsicum is especially useful in the atonic dyspepsia of hard drinkers and long residents in hot climates. The following formula may be employed:

598. ℞. Pulveris capsici, gr. ij–iij.
Pilulæ rhei compositæ, gr. v.
Pulveris ipecacuanhæ radicis, gr. ss. M.
Make two pills. To be taken daily, an hour before dinner.

**Carbo Ligni*, enclosed freshly prepared in gelatine capsules, is a valuable remedy in dyspepsia attended with obstinate flatulence and gastrodynia.

Cardamomum, in the form of the compound tincture, is highly serviceable in the dyspeptic affections of old persons.

Caryophyllum, in infusion, or volatile oil (gtt. iij–v,) is of benefit in atonic dyspepsia attended with a sense of coldness in the stomach and much flatulence.

Cerii Oxalas was much employed by the late Prof. SIMPSON in irritable dyspepsia, attended with gastrodynia, pyrosis and chronic vomiting.

Colocynth is useful in some forms of dyspepsia and gastrodynia, when no inflammatory symptoms are present. The following formula may be employed:

599. ℞. Extracti colocynthidis compositi, ℈ ij.
Pilulæ rhei compositæ, ℈ j.
Saponis, gr. vj.
Olei caryophylli, gtt. iv. M.
Make sixteen pills. Take one or two every half hour.

Ferrum. (See above, page 302.)

Gallicum Acidum has been recommended in dyspepsia arising from a relaxed state of the mucous membrane of the stomach. It is useful in *pyrosis*, unaccompanied by organic disease of the stomach, or of the liver.

Gentian, in the form of tincture in an aromatic water, is a valuable stomachic in atonic dyspepsia and in the dyspepsia of gouty subjects.

Hydrargyri Pilula, in doses of gr. ij–iv, is useful in dyspepsia attended with hepatic derangement, or when the duodenum is supposed to be the seat of the dis-

ease. It may be combined with ipecacuanha (gr. j–ij) and with a sedative. Ptyalism must be avoided.

Hydrargyri Chloridum Mite is sometimes productive of marked benefit in dyspepsia characterized by hepatic derangement. But its habitual use, even as a purgative, is not without detriment, and its constitutional effects are mischievous.

Hydrocyanic Acid, in doses of ♏ij–iv, combined with infusion of columbo, is often signally useful in dyspepsia attended with gastric irritation. Dr. Wilson Fox states that in the irritative dyspepsia of phthisis it is a most effectual remedy.

Ipecacuanhæ, in doses of gr. ss–j, in the form of pill, with gr. iij–iv of rhubarb, taken before meals, often proves serviceable in atonic dyspepsia, especially when the biliary secretion is deficient or vitiated.

Kino is useful in the incipient stages of follicular dyspepsia. It does not appear to constipate the bowels, if diarrhœa be not present. Sir T. Watson recommends it highly in *pyrosis*, in the form of pulvus kino compositus:

600. ℞. Pulv. kino, ʒiv.
Pulveris opii, gr. xv.
Cinnamomi, ʒj. M.
Divide into thirty powders. One thrice daily.

Dr. Wilson also regards it as the best remedy in pyrosis.

**Lactic Acid*, first introduced as a remedy in dyspepsia by Magendie, has been employed with success by Dr. C. Handfield Jones in cases of irritative dyspepsia, when the digestion has been for a long time painful and imperfect. Its use is not advised at the commencement of a severe case, but only after the irritation is somewhat reduced. The dose is ♏xv–xx, in a tablespoonful of water, taken at meal-times. Its use may be extended to all cases where it is desirable to improve the tone and power of the stomach. But it is essential, in order to obtain good effects, that the acid should be pure and of good quality, which unfortunately is frequently not the case with that which is generally dispensed.

Magnesiæ Sulphas, in small doses, has been found very effectual in dyspepsia accompanied by costiveness. The following formula may be used:

601. ℞. Magnesiæ sulphatis, ʒj.
Infusi quassiæ, Oiss.
Spiritûs ammoniæ aromatici, f.ʒij. M.
Drink a wineglassful of this every morning, fasting.

Or the following may be employed:

602. ℞. Magnesiæ sulphatis, ʒvj.
Magnesiæ carbonatis, ʒiss.
Vini aloës, f.ʒvj.
Tincturæ humuli, f.ʒij.
Acidi hydrocyanici diluti, ♏xv.
Infusi cascarillæ, f.ʒvij. M.
Take three tablespoonfuls thrice daily.

Manganesii Oxidum Nigrum, in doses of gr. x–xv thrice daily, has been recommended in certain irritable conditions of the stomach, and forms of dyspepsia.

Morphia, subcutaneously injected, in doses of one-fourth grain, has been used with excellent success by Dr. CLIFFORD ALLBUTT (*Practitioner*, June, 1869,) in those forms of dyspepsia characterized by irritability or erethism, or such as is often associated with hysteria, or which arises from great mental exertion or depression.

Muriaticum Acidum Dilutum, in doses of ♏xv–xx, properly diluted, given immediately before, during, or directly after a meal, is highly recommended by Dr. WILSON FOX in atonic dyspepsia. It may be combined with vegetable bitters. In nervous disorder of digestion associated with diarrhœa, he combines the acid with tincture of nux vomica, and gives before meals.

Pepsine is especially indicated in dyspepsia connected with deficient secretion of gastric juice. It is particularly useful in gastric disturbances following the use of animal food, often enabling a patient who has not dared attempt it, to eat of it with impunity. The severest cases of *gastralgia* are relieved by it. If it fails after three or more doses, it is probable that the dyspepsia does not arise from a defect of the gastric secretion. Dr. WILSON FOX strongly recommends it, not only in atonic dyspepsia, but in irritative states of the gastric mucous membrane. It may be advantageously combined with muriatic acid, at meal times. It may be combined with other medicines which do not impede its therapeutic action; thus, with muriate of morphia, to relieve violent pain of the stomach; with strychnia, to stimulate peristaltic movement; with subnitrate of bismuth, lactate or iodide of iron, etc.

Potassii Sulphuretum, in doses of gr. x, alone or combined with an aromatic, is useful when the mucous follicles are supposed to be implicated.

Potassii Sulphas, in doses of gr. xv–℈ ij, alone or combined with rhubarb (gr. v–x) or aloes, is a safe and efficient aperient in dyspeptic affections.

Potassii Tartras is sometimes employed as a mild purgative in dyspeptic affections, attended with slight febrile action.

**Potassii Iodidum*, in small doses (gr. j–ij), with bicarbonate of potash (gr. vij–x), is recommended by Dr. W. BRINTON, in flatulent dyspepsia, in which, whether from a too starchy diet, deficient or hasty mastication, decayed teeth, the abuse of tobacco, or other causes, the salivary excretion seems either deficient in quantity or faulty (*i. e.*, acid) in quality. Two or three administrations will often induce a marked change.

Quassia, in infusion, combined with carbonate of soda, is recommended by TROUSSEAU, in dyspepsia attended by acidity of the stomach, sour eructations, and marked especially by vertigo and a tendency to syncope. It is peculiarly useful in the dyspepsia of drunkards.

**Rheum* is often highly serviceable, as it is warm and carminative in its nature, speedy, and neither stimulant nor drastic in its action. Eight grains made into pills with soap, and taken every night at bedtime, together with some mild, bitter infusion, and an alkali in the daytime, is a very effectual mode of treatment.. The following mixture is useful:

603. ℞. Aloës, ℥j.
Rhei,
Glycyrrhizæ, āā ℥ss.
Spiritûs lavandulæ compositi, f.℥ss.
Aquæ calcis, f.℥viij. M.

Infuse for twelve hours, and strain. Dose, two tablespoonfuls, two or three times daily.

The following formula is of benefit when acidity is a prominent symptom:

604. ℞. Rhei, ℥iss.
Potassii carbonatis, ℥iij.
Aquæ ferventis, ℥xij. M.

Macerate for twelve hours, strain, and add:

Tincturæ cinnamomi compositæ, f.℥ij.

Dose, a tablespoonful to a wineglassful.

The old plan of chewing a piece of solid rhubarb, is an excellent one, as by this means, no more is swallowed than what is dissolved in the saliva, and this is frequently sufficient to keep the bowels regular, and impart tone to the digestive organs without producing subsequent constipation.

**Ricini Oleum*, in doses of a teaspoonful daily, given at bedtime, is one of the most valuable remedies in dyspepsia attended with inflammation or vascular excitement of the pylorus and duodenum. The nature of the morbid condition of the mucous membrane of the stomach, is indicated by the effects of castor oil. In atonic dyspepsia, it is borne with the greatest difficulty, causing nausea and vomiting; in irritable dyspepsia, it acts severely, and with much griping; but in vascular excitement of the mucous membrane of the stomach, it soothes most admirably, and produces the best effects when it has no aperient action. It may be combined with liquor potassæ, or administered in emulsion, in coffee, or in a mild carminative water.

Sapo, in combination with rhubarb and essential oil, is useful in dyspepsia attended with acidity; also in *pyrosis*, given either alone or with opium.

Senna. A mixture of equal parts of the infusions of senna and gentian is often beneficial in atonic dyspepsia, especially when attended by constipation.

Serpentaria is recommended by Dr. A. T. Thompson, in dyspepsia, when the skin is hot and dry.

Sinapis. White mustard seeds, in doses of two or three teaspoonfuls, two or three times a day, have been advised in some forms of dyspepsia.

**Sodii Bicarbonas*, in full doses (℈ ij–iij), combined with tincture of ginger (♏xxx) and aromatic spirits of ammonia (f.℥ss–j), is very useful in dyspeptic attacks attended with colic and gastric irritability, especially when consequent on the ingestion of unwholesome food. Either in atonic or catarrhal dyspepsia, it answers admirably combined with a bitter; *e. g.:*

605. ℞. Sodii bicarbonatis, gr. x.
Tinct. cort. aurantii, ♏xxx.
Infusum calumbæ, ad f.℥j. M.

Dissolve and mix for a draught.

Sodii Hyposulphis is praised by Sir W. Jenner and Dr. W. Brinton, in flatulent

dyspepsia. In doses of gr. x–xv, in infusion of quassia, it has proved successful in *sarcina ventriculi*.

**Strychnia* or *Nux Vomica* is useful in chronic dyspepsia, in preventing distention by flatus. It is also serviceable in *pyrosis* and *heart-burn*.

Tannic Acid, which may advantageously be combined with dilute nitric acid, is often very serviceable in dyspepsia, the symptoms disappearing under its use, the appetite improving, and the bowels, far from being constipated, often becoming more free.

Taraxacum is much used where the liver is implicated, and in the indigestion of gouty subjects. The following formula may be employed:

606. ℞. Extracti taraxaci, ℥ ij.
Potassii nitratis, ℥ ss.
Spiritûs ætheris nitrosi, f. ℥ j.
Infusi aurantii, f. ℥ vj. M.

Take two tablespoonfuls thrice daily.

Zinci Sulphas is recommended by Dr. Golding Bird in dyspepsia associated with irritability of the nervous system.

Zinci Oxidum has, according to Dr. Wilson Fox, the advantage over the sulphate in irritable conditions of the nervous system associated with dyspepsia, when given at bedtime, in doses of gr. ij–iij, for procuring sleep.

GASTRITIS, GASTRO-ENTERITIS AND ENTERITIS.

These forms of intestinal inflammation are closely associated, both anatomically and with reference to symptoms and treatment. They are marked off from inflammations of the lower bowel (colitis, dysentery,) by the usual presence of vomiting and constipation, the absence of hemorrhagic discharge and tenesmus.

JOHN SYER BRISTOWE, M. D., LONDON.

In the treatment of typical acute gastritis, local measures are of great importance. Mustard poultices or hot fomentations to the epigastrium will answer in milder cases; but in severer ones, from twelve to twenty leeches should be applied. Food should be reduced to the minimum, and small pieces of ice should be swallowed, or iced milk be sipped. *Opiates* in large doses are called for, either hypodermically, which is best, or combined with bismuth or magnesia. Lime-water and minute doses of hydrocyanic acid are soothing. Stimulants are not desirable.

The treatment is much the same for the milder cases of enteritis.

As regards the more severe forms, two principles of treatment may be considered well established. They are: (1) To relieve pain, and prevent the movements of the bowels, by opium. (2.) To avoid the administration of purgatives. Constipation for a few days, or even a week or two, is of little consequence. The opiate is best given by hypodermic injection. Leeches, early in the disease, followed by hot fomentations, will be a valuable measure. For the prostration which rapidly ensues, stimulants and concentrated food are required, but they must be given *by enema*, as the stomach is generally too sensitive to bear them.

DR. JOHN M. WHITE, ALABAMA.

In a number of cases of acute gastritis this practitioner (*Medical and Surgical Reporter*, March, 1877,) has used the following combination with entire satisfaction:

607. ℞. Tinct. veratri viridis, gtt. xv.
Liq. morph. sulphatis (Magendie's,) gtt. xxv.
Acidi carbolici, gtt. iv.
Aquæ menth. piper., f.℥j. M.
A teaspoonful every three hours.

Of course, the employment of ice, leeches, and fomentations should supplement this when possible.

HENRY HARTSHORNE, M. D., PHILADELPHIA.

In the chronic forms of gastritis counter-irritation of the epigastrium with blisters will be useful. Internally, the most valuable remedy is *nitrate of silver*:

608. ℞. Argenti nitratis, gr. v.
Pulveris opii, gr. ijss. M.
For twenty pills. One thrice daily.

Begin with gr. $\frac{1}{4}$ of the silver thrice daily, and prudently raise in a few weeks to gr. $\frac{1}{2}$. Another useful drug is *subnitrate of bismuth*, gr. x–xx, thrice daily. The diet must be bland, and the food taken in small quantities and at short intervals. The patient should not drink much water, but quench his thirst with small pieces of broken ice. When other means fail, an absolute *skim milk* diet will at times succeed.

DR. MILLET, FRANCE.

For the relief of some of the symptoms of chronic gastritis, this author recommends:

609. ℞. Extracti hyoscyami, ℈ ij.
Argenti nitratis, gr. vj.
Bismuthi subnitratis, gr. xxx. M.

Divide into forty pills. One morning and evening, in the variety of gastralgia which intervenes frequently during the course of chronic gastritis. Counter-irritation to the epigastrium.

610. ℞. Extracti belladonnæ, gr. v.
Quiniæ sulphatis, gr. xxx.
Extracti valerianæ, q. s. M.

Divide into fifteen pills. One thrice daily, in gastralgia.

RÉSUMÉ OF REMEDIES.

Acacia. Solutions of gum arabic are valuable emollients.

Argenti Nitras, in chronic gastritis, is praised by many authorities. (F. 608.)

Bismuthi Subnitras has a remarkable effect in relieving pain, vomiting, and intestinal irritation. Dr. William Brinton, of London, recommends:

611. ℞. Bismuthi subnitratis, gr. x–xx.
Pulv. kino compos., gr. v–x. M.

For one dose every four to eight hours.

Calcis Aqua is an important dietetic adjuvant.

Hydrargyri Chloridum Mite. In acute gastritis, Dr. Aitken recommends 3 to 5 grains of calomel, followed by a dose of castor oil.

Opium and its derivatives are indispensable in the treatment of gastro-enteritis. (See above p. 310.)

Sodii Bicarbonas is often called for as an antacid.

Tannicum Acidum is an excellent astringent to prevent excessive purging. A convenient formula is:

612. ℞. Aquæ camphoræ, f. ℥ ij.
Morphiæ acetatis, gr. ij.
Acidi tannici, gr. x–xv. M.

A teaspoonful every two hours.

Veratrum Viride has been used. (F. 607.)

EXTERNAL MEASURES.

Bandaging. A wide flannel bandage around the abdomen acts as a sort of splint to the part, and sometimes gives much relief.

Blisters. A small blister on the stomach or abdomen often gives prompt relief.

Cups, dry or wet, are often of service.

Fomentations. The continuous use of hot water fomentations, *as hot* as the patient can bear them, over the region of the stomach, is of great benefit in acute cases, according to Dr. William Brinton.

Leeches are the most convenient means of abstracting blood when they can be had.

GASTRIC ULCER.

DR. H. LEBERT, VEVEY.

A careful study of the treatment of gastric ulcer is given by this writer in the *Transactions of the International Medical Congress*, Philadelphia, 1876. His rules are:

1. Absolute rest in bed.

2. A milk diet, about two quarts per day in divided amounts every three hours, except at night. If it is badly borne, add one-fourth part lime-water or a little bicarbonate of soda. The milk diet should be kept up about six weeks. After this it may gradually be combined with light, nutritious diet.

For the pain, opiates by enema or subcutaneously are required. Hæmatemesis can be controlled by ice externally and internally, hourly doses of ergot, or of tincture of chloride of iron (gtt. v,) or acetate of lead or alum whey. Iced milk is the best anti-emetic; or effervescent powders with bismuth; or small doses of opiates. Often, when other means fail, *iodide of potassium* will check the vomiting, as:

613. R. Potassii iodidi, ℥j.
Tinct. cinchonæ, f.℥j. M.
Ten to twenty drops several times daily.

Constipation should be prevented by cold enemata, or aloes pills. Perforation demands the most absolute rest and full doses of opiates, (subcutaneously) with ice to the epigastrium. This mode of treatment has occasionally proved successful in this very dangerous complication.

As the patient manifests improvement, a mild ferruginous tonic is indicated. The tincture of the *malate of iron* is one of the best; or the lactate; or the following.

EFFERVESCENT FERRUGINOUS POWDER.

614. R. Ferri lactatis, gr. xlv.
Acidi tartarici, ℥ij.
Sodii bicarbonatis, ℥iij. M.
Keep in a wide-mouthed bottle, well stoppered. Dose, from a half to one teaspoonful in a small wineglassful of water, two or three times a day.

PROF. H. ZIEMSSEN, ERLANGEN.

This writer (*Medicinische Central Zeitung*, April, 1872,) recommends

the use of alkalies, especially Carlsbad water, continued several months. Most vegetable, and fatty, and saccharine matters are injurious. A *milk diet* has proved of benefit in numerous instances; but veal, chicken, ham, white bread and light claret are harmless. Morphia, hypodermically, must be employed to combat the cramps in the stomach.

As regards the consequences of gastric ulcer, especially of stricture of the orifices, the indications are, return of the gastric catarrh, retention of the contents of the stomach with acid fermentation, vomiting after meals, constipation, sinking of the hypogastrium, dilatation of the stomach, which is capable of physical proof, etc. These symptoms require the due application of sounds and of the stomach pump. The so-called system of dry diet may be adopted with advantage, for the obstinate constipation so commonly remaining, even for years, as the consequence of gastric ulcers. M. ZIEMSSEN recommends the use of rhubarb before going to bed, to which, if any pain follows its employment, or if great atony exists, he adds a tenth of a grain of extract of belladonna, or of the extract of nux vomica.

J. M. DA COSTA, M. D., PHILADELPHIA.

615. ℞. Argenti nitratis, gr. v.
Extracti opii, gr. x. M.
For twenty pills. One thrice daily.

The following is an excellent combination for the pain and vomiting, when opium is inadmissible:

616. ℞. Bismuthi subnitratis, ℥ ij.
Acidi hydrocyanici diluti, f. ℥ ss.
Mucilag. acaciæ,
Aquæ menthæ piperitæ, āā f. ℥ ij. M.
A tablespoonful thrice daily.

DR. FENWICK, LONDON.

This author states (*Diseases of the Stomach and Duodenum*) that in ulcer of the stomach, whenever the pain is very severe and is attended by frequent vomiting, we may be sure that inflammation is going on, and the case must be treated as one of subacute gastritis. Perfect rest should be enjoined. A few leeches to the epigastrium are sometimes required; but, generally, the use of poultices, turpentine fomentations, or dry cupping, is alone necessary.

The main point in the treatment is the regulation of the diet. Usually, small quantities of farinaceous food may be given at frequent intervals. Arrow-root, milk, and gruel, agree best. The frequent use of ice often relieves the pain, and obviates the necessity of larger quantities of liquids. Sometimes, as when dangerous hæmatemesis has previously followed a severe attack of pain, the patient ought to be supported by an enema.

For the more acute stages of the complaint, *morphia* and *hydrocyanic* acid, combined with small doses of nitrate of potassium—or, if there be much acidity, with magnesia or soda—are the best medicines.

As the pain lessens and the vomiting becomes more rare, the patient may be allowed to take a little exercise. Rather more liberal quantities of food may be given, but of a liquid nature. Blisters to the epigastrium generally alleviate the sufferings, and the raw surface may be dressed with morphia. When the pain is moderate, bismuth with magnesia and morphia, and lime-water with milk, are beneficial. As the case improves, tonics may be given. If the urine deposits phosphates, the mineral acids, with calumba, may be prescribed. Later, *iron*—the citrate or the reduced, and afterwards the sulphate—may be given. Dr. FENWICK has often prescribed the *nitrate* or *oxide* of *zinc*, and the salts of copper or zinc, with very good results. During convalescence, a little brandy or pale sherry may be given. In very obstinate cases, residence abroad sometimes affords relief.

RÉSUMÉ OF REMEDIES.

Argenti Nitras, though generally considered of value in ulcer of the stomach, is believed by Dr. W. BRINTON to be, as generally prescribed, absolutely inert, so far as the gastric ulcer is concerned. He prefers bismuth. Professor DA COSTA sometimes prescribes the nitrate with opium. (F. 615.)

Arsenic is recommended by Dr. RINGER, who gives one to two minims of Fowler's solution before each meal.

Bismuthi Subnitras is highly spoken of by all authorities. It relieves pain and vomiting, as well as diarrhœa, when present.

Eucalyptus Globulus has been prescribed with great success by Dr. BENJAMIN BELL, of Edinburgh, in formidable cases of gastric ulcer. (*Edinburgh Medical Journal*, February, 1878.)

Cannabis, in extract, often answers admirably as a sedative, and would replace opium entirely, were its effects more uniform.

**Opium* is highly recommended by Dr. W. BRINTON in ulcer of the stomach. In his opinion, its efficacy in this affection is not due to its sedative or anodyne properties, but rather to its supporting the strength, buoying the nervous

system, and checking the waste or expenditure of the tissues generally. When vomiting is excessive, and resists a combination of this powder with bismuth, opium is best borne in a solid form. Thus given, its effects are often very striking. Large and frequently-repeated doses are of great service in perforating ulcer of the stomach.

Plumbi Acetas often allays the severity of the symptoms.

Potassii Iodidi. (F. 613.) Dr. W. BRINTON gives this formula as of the best effect in the flatulent dyspepsia of gastric ulcer:

617.	R. Potassii iodidi,	gr. j.	
	Potassii bicarbonatis,	gr. xv.	
	Tincturæ aurantii,	f. ʒ ss.	
	Infusi calumbæ,	f. ʒ vijss.	M.

For one dose an hour after eating.

Ricini Oleum, in a moderate dose, may often be given in the ordinary way without increasing the pain or vomiting. When the latter is frequent, however, the oil is best given in enema.

**Turpentine* stupes often relieve the pain. When, however, the strength is exhausted by constant vomiting, *dry cupping* is preferred by Dr. W. BRINTON, as a more effectual means of relieving the pain. In comparatively recent cases in the young and well-nourished, *blisters* are to be preferred.

**Enemata.* Life may be prolonged, and even in some cases preserved, in those ulcerous conditions of the stomach in which it is unadvisable or impossible to give food by the mouth, by the persevering use of enemata of beef-tea, milk, raw eggs, cod-liver oil, wine, and, in extreme cases, even diluted brandy or opium. The quantity of each should be as small as possible, and should rarely be repeated in less than three or four hours.

**Ice*, in small lumps and raspings, greatly relieves the pain and vomiting.

Leeches to the epigastrium often relieve the pain, but their use is of doubtful propriety in the weak and cachetic.

Milk Diet. This is referred to above (p. 313); ass' and mare's milk are best, but not often procurable. The milk should always be obtained from the same animal, and used warm, (95° Fah.,) but not boiled. Half a pint every four hours is a fair average. It should not be taken at a draught, but by spoonfuls, slowly, to prevent curdling in the stomach. Crusts of bread or fresh crackers may be soaked in it, or lime-water or soda added to it. Apollinaris water is a pleasant addition. Where the irritability of the stomach is not excessive, arrow-root may be mixed with the milk and boiled to a thin pulp, to be taken cool. Sago and tapioca are generally less easily borne. Rice flour may be used in the same way.

HÆMATEMESIS.

DR. JACCOUD, PARIS.

There is no better treatment than that by *ice*, internally and externally. The mineral acids or alum may be given, but their efficiency is neither as rapid nor certain as that obtained from ice. Dry cups on the limbs and trunk are useful when the hemorrhage is copious.

FREDERICK T. ROBERTS, M. D., M. R. C. P., LONDON.

The judicious rules laid down by this author, in his treatise on *Practice*, are: bodily rest, and nutrition by enema, if the case is severe; small lumps of ice should be swallowed at intervals, and a light ice poultice to the epigastrium, followed by sinapisms, if the vomiting is violent. It is of the utmost importance to check the emetic efforts, and if the means just mentioned are insufficient, recourse should be had to a few drops of dilute hydrocyanic acid in cold mucilage; morphia, internally or by subcutaneous injection; or an enema containing tincture of opium. Should there be signs of sinking, stimulants are called for, and should be given by enema. The most efficient medicines are gallic acid or acetate of lead, in full doses, combined with opium; or oil of turpentine.

RÉSUMÉ OF REMEDIES.

Alum, in doses of gr. viij, in combination with opium, thrice daily, is useful, though inferior to sugar of lead.

Ammonii Chloridum is sometimes employed with advantage.

Argenti Oxidum, in doses of gr. ss–j, thrice daily, is highly recommended by Sir J. EYRE.

**Ergot* and *Ergotine* have been successfully employed by many practitioners.

**Ferri Nitratis Liquor*, in large doses, is very efficacious.

Ferri Chloridi Tinctura, gtt. v, in water, every half hour or hour, is recommended by Dr. LEBERT.

**Gallicum Acidum*. Dr. W. BRINTON recommends the following formula:

618.	℞.	Acidi gallici,	℈ ij.	
		Acidi sulphurici diluti,	♏xl.	
		Aquæ,	f.℥ ij.	M.

Dose, a tablespoonful in a little water.

**Ipecacuanha* often appears to exercise a powerful influence. It should be given in the manner recommended in hæmoptysis.

Magnesiæ Sulphas. Dr. BARLOW considers that, in hæmatemesis and melæna, it is advisable to clear out the bowels before resorting to astringents. For this purpose, he employs the following formula:

619. ℞.	Magnesiæ sulphatis,	℥j–ij.	
	Acidi sulphurici diluti,	♏x.	
	Aluminis,	gr. x.	
	Syrupi papaveris,	f.℥ss.	
	Infusi rosæ compositi,	f.℥xj.	M.

Make a drink. Take every four hours.

Matico has been advised.

**Plumbi Acetas,* in doses of gr. ij–iij, combined with acetate of morphia (gr. ¼–ss), is very useful in controlling hemorrhage from the stomach, whether idiopathic or from ulceration. The auxiliaries are the external application of cold, acidulated drinks, perfect rest, and antiphlogistic diet.

**Sulphuricum Acidum Dilutum,* alone or combined with gallic acid, is a very efficient remedy.

Tannicum Acidum, in doses of gr. iii–vj, three or four times a day, is a useful astringent and tonic, only contra-indicated by the presence of inflammatory symptoms.

Turpentine deserves a trial after the failure of less nauseous remedies.

**Ice,* in lumps, coming in contact with the bleeding vessels, acts as a powerful astringent.

HEPATITIS, HEPATIC ABSCESS.

PROF. WILLIAM A. HAMMOND, NEW YORK.

This eminent clinician is of opinion that obscure abscesses of the liver are far more common than are usually supposed. (*St. Louis Clinical Record*, June, 1878.) They may exist without local symptoms or disturbance of the general health. The treatment, in all such cases, is to open them at the earliest possible moment, and without waiting for adhesions to form between the liver and the abdominal wall. This can readily be done, without any danger, by *aspiration.* There is no risk of peritonitis. The proper place for performing the operation of aspiration, is in one of the intercostal spaces, usually the tenth, a little behind a line let fall from the middle of the right axilla.

DR. WILLIAM AITKEN.

In acute parenchymatous inflammation of the liver, this writer prescribes antimonii et potassii tartras (gr. ⅛–¼) every two or three hours,

providing it can be given within the first three days, when there is much vascular excitement and a full, bounding, unyielding pulse, with a dry, hot skin and scanty urine. General blood-letting may be adopted, if there be evidence of obstruction to venous blood-flow through the right side of the heart. Local depletion, by leeches over the liver and also round the anus, must be at once resorted to, followed by fomentations and linseed-meal poultices, with or without mustard or laudanum, over the hepatic region. Saline purgation and alkalies, with or without colchicum, are also to be freely administered. Hot *turpentine epithems* are most beneficial.

In the chronic form, *iodide of potassium* with *taraxacum*, is of great service. Alcoholic stimulants and fermented drinks must be absolutely forbidden, and the diet restricted to mild nutriment, such as milk, beef-tea, and farinaceous food generally.

PROF. W. C. MACLEAN, M. D., LONDON.

This distinguished surgeon strongly opposes the usual treatment of acute hepatitis by venesection, mercurials, and purgatives, given above by Dr. AITKEN, and recommends in place of it, *ipecacuanha*, in large doses (gr. xx–xxx), repeated every few hours, until the symptoms subside:

620. ℞. Pulveris ipecacuanhæ, ℈j.
Mucilaginis acaciæ, q. s. M.
Make four pills. The whole to be taken every sixth hour, day and night.

Dr. ALFRED A. WOODHULL, U. S. A., has recently published some cases corroborating the value of this treatment. Dr. MACLEAN considers ipecacuanha, in hepatitis, almost as valuable as in dysentery.

J. M. DA COSTA, M. D., PHILADELPHIA.

In chronic hepatitis, a certain amount of drain should be kept up from the portal circulation. For this purpose, very small doses of *podophyllin*, *cream of tartar*, or *Rochelle salts*, now one and now another, are useful. A very good pill is the following:

621. ℞. Podophyllin, gr. vj.
Capsici, gr. iv.
Pulveris rhei, gr. xij. M.
For twelve pills; one on alternate nights.

In order to reduce the state of induration or enlargement of the liver, the *mineral acids* may be employed. Or, when the case is not chronic, the salts of soda, as in the following formula:

622. ℞. Sodii bicarbonatis, ℥ ss.
Infusi gentianæ, f. ℥ vj. M.
A tablespoonful three times a day, after or between meals.

Should this fail, employ *nitro-muriatic acid baths*. *Sulphur-baths* are of advantage; or those of *sulphuret of potassium;* or the use of *sulphur ointment*, followed by warm baths.

SIR RANALD MARTIN, LONDON.

Nitro-muriaticum acidum is employed, both externally and internally, with great advantage in chronic hepatitis, and in the advanced stages of acute hepatitis and congestion of the liver. It is most serviceable in the form of a *bath*, for which the following directions are given (*Lancet*, December 9th, 1865,) by Sir RANALD MARTIN: 1. The proportions of acid are given by the following formula:

623. ℞. Acidi muriatici, f. ℥ iij.
Acidi nitrici, f. ℥ ij.
Aquæ, f. ℥ v. M.

2. Two gallons of water (about ten bottles) may suffice for a bath. 3. To each gallon of water, add f. ℥ iij of the above acid mixture. 4. The bath thus prepared will keep in use for three days, by adding f. ℥ ss of the acid mixture and Oj of water, morning and evening, to make up for the waste by evaporation. 5. A portion only of the bath to be heated for use, after which it is to be added to the remainder, so as to make the whole of a comfortable warmth (96°–98°.) 6. Let both feet be placed in the bath, while the inside of the legs and thighs, the right side (over the liver,) and inside of both arms, are sponged alternately. This should be continued for ten or fifteen minutes, morning and evening. 7. While using the bath, a gentle aperient should be taken every morning. 8. Earthenware or wooden vessels should be preferred for foot-baths, and all the sponges and towels should be kept in cold water, as the acid corrodes them. 9. In urgent cases, a general bath, to envelop the whole body, may be used. 10. If the acid bath create much irritation of the skin, the quantity of the acid may be diminished. 11. The influence of the acid is not in the least degree counteracted by opium, even when exhibited in the largest doses.

RÉSUMÉ OF REMEDIES.

Ammonii Chloridum has for many years been esteemed in hepatic abscess. According to Dr. WILLIAM STUCKERT, of the British Indian Army, (*Medical Times*, April, 1878,) in active congestion of the liver, the special and charac-

teristic action of the medicine will be found to be more marked than in cases of chronic hepatitis. The dose necessary for its full therapeutic effect is gr. xx, and the only condition which contra-indicates its use in cases of hepatitis is the existence of a dry and hot skin. Under such circumstances, its use should not be commenced till the skin is rendered moist and perspirable by the administration of some simple diaphoretic mixture in repeated small doses, say ℥ij liq. amm. acet. with ℥v tinct. hyoscyam. in each dose, every half hour. In congestion of the liver (or acute hepatitis, when the skin has been made moist or perspirable by the above means) the chloride should be at once commenced in 20-grain doses, twice or thrice daily.

Colchicum is advised by Dr. COPLAND, to increase the biliary secretion in chronic inflammation or enlargement of the liver, and to promote the resolution of the former and the diminution of the latter state.

Hydrargyri Bromidum has been administered with relief in chronic hepatitis with enlargement.

Hydrargyri Iodidum Rubrum, in ointment, is recommended by Dr. W. MACLEAN, in malarial enlargements of the liver and spleen, to be rubbed in for ten minutes, in the morning, and the patient exposed to the powerful heat of a fire as long as he can endure it.

Hydrargyri Chloridum Mite. Mercury is much less employed than formerly in chronic hepatic affections, it having been superseded by nitro-muriatic acid and iodide of potassium.

Iodine and its preparations are beneficial in chronic hepatic affections, but their indiscriminate use is to be avoided.

Nitricum Acidum, with sarsaparilla or taraxacum, is often productive of good in chronic hepatitis, especially of old persons, where mercurials have been largely used. Nitro-muriatic fomentations and baths may be employed at the same time.

**Potassii Iodidum*, combined with taraxacum, is of value in chronic inflammation and enlargement of the liver. Dr. COPLAND has found that it is chiefly when enlargement, obstruction or torpor of the liver occurs after periodic fevers, or in the scrofulous diathesis, that iodide of potassium, employed internally or externally, or both, and in conjunction with other deobstruents, as liquor potassæ, or alternated with purgatives, is of most benefit.

**Taraxacum* is an efficient remedy in chronic inflammation of the liver; where mercury is advisable, rendering it more efficient, and under certain circumstances, taking its place advantageously. Sir RANALD MARTIN has found, in indolent enlargements of the liver, accompanied with torpid action of the viscus, that mercury is of little service, and that he has derived more advantage from the following formula, conjoined with a spare diet and the external application of cantharides:

624. ℞. Extracti taraxaci, gr. xxxvj.
Extracti aloes, gr. xij.
Extracti acetici colchici,
Pulveris ipecacuanhæ, āā gr. vj. M.
Make twelve pills. Take two every night.

INTESTINAL WORMS.

TÆNIA—TAPE WORMS.

The varieties of tape worms are often so difficult to dislodge, that the therapeutic resources of the physician are severely tasked. The principal remedies are mentioned below.

PROF. ARNOLD HELLER, KIEL.

Before commencing treatment the intestinal tract should be cleared out by mild laxatives and enemata for two days. The diet should be limited and concentrated. As onions and salt herrings are unpleasant to the worm, the patient may partake freely of these. On the morning of the third day he should take 3 v of *koosso*, and two hours after this an ounce of castor oil. Instead of the bulky koosso itself, its alkaloid, *koossin*, may be used; of this, a dose is gr. xxx.

DR. CARRE, FRANCE.

625. ℞. Pulv. kousso, ℥ vij.
Olei ricini (hot,) ℥ iss.
Strain, and pour on the residuum,
Aquæ bullientis, ℥ iss.

Filter and combine the two percolates by means of yolk of egg in an emulsion, and add gtt. xl ether sulphuric. Sweeten and aromatize. For one dose.

DR. TILLESEN, GREIFSWALD.

This writer (in the *Deutsche Medicinische Wochenschrift*, Nos. 46 and 47, 1876,) speaks of the method of treating tænia in the Greifswald medical clinic. It consists essentially in clearing out the intestine with castor oil and enemata, followed by the exhibition of liquids containing substances supposed to be distasteful to the parasite, such as herring-brine, and so forth. In addition, a considerable amount of water is given, which is supposed to distend the tænia and separate it from the intestinal wall. The increased weight of the parasite, together with the peristalic action of the intestine, suffices to remove the worm. Several cases are reported, and in each the head was brought away.

PROF. MOSLER.

The chief characteristic of this practitioner's treatment is the injection of large quantities of *warm water* into the colon, after the administration of the anthelmintic. The diet is first regulated, food being given which is supposed to be distasteful to the tape-worm—bilberry tea, herrings, sour cucumber, salted meats. The intestine having been, as far as possible, emptied by laxatives, a dose of the extract of pomegranate bark is administered, prepared from the fresh bark, and then a large quantity of warm water is injected into the rectum. The theory is that the worm, previously brought down into the colon, is prevented by the water from attaching itself to the wall, and is brought away by the liquid on its escape. It is asserted that in every case in which this treatment was adopted the head of the worm was removed.

DR. M'PHAIL, VA.

After keeping the patient on a light diet for the preceding twenty-four hours, give from ʒ ss–j of the oil of male fern in ℥ ij of thin mucilage, and ten minutes afterwards, a goblet of sweet milk. Two hours after the above dose, give ℥ j castor oil, combined in mucilage, with ʒ j–iv of spts. turpentine. This always does the work, and with remarkably little discomfort to the patient. (*Virginia Medical Monthly*, 1876.)

SIR THOMAS WATSON, M. D.

This eminent physician gives the preference to *oil of turpentine*, in large doses—f. ℥ ss–ij, in combination with castor oil; or castor oil may be administered afterwards, to assist its purgative effect. The patient should take it in the morning fasting, and no drink should be admitted into the stomach until the medicine begins to operate, lest sickness and vomiting should be provoked. The worm generally is voided dead within an hour or two. The bowels should be kept open with castor oil, so long as the urine retains the violet smell which indicates the presence of turpentine in the circulation.

MR. A. J. SCHAFIRT, WASHINGTON, D. C.

In a number of cases, this pharmaceutist employed no preliminary provisions beyond forbidding the patient to breakfast the day of treatment, and giving him a full dose of Rochelle salts the preceding night. At ten o'clock in the morning, the following was taken at one dose:

626. ℞. Granati radicis, ℥ ss.
Peponis seminum, ℥ j.
Extract. filicis ether., f. ℥ j.
Pulv. ergotæ, ℥ ss.
Pulv. acaciæ, ℥ ij.
Olei tiglii, gtt. ij. M.

The pomegranate-bark and pumpkin-seed were thoroughly bruised, and, with the ergot, boiled in eight ounces of water for fifteen minutes, then strained through a coarse cloth. The croton oil was first well rubbed up with the acacia and extract of male fern, and then formed into an emulsion with the decoction. In each case, the worm was expelled alive and entire within two hours. No unpleasant effects followed. In each case, the worm was passed with the head firmly fastened to the side of its body, at about the widest part, from which it was with difficulty removed, and the worm was twisted and doubled into various knots.

DR. WILLIAM BRINTON, LONDON.

627. ℞. Ext. ether. filicis maris, f. ℥ iss.
Pulv. kamelæ, ℥ ij.
Mucilag. acaciæ,
Syrupi simplicis, q. s.
Aquam cinnamomi, ad f. ℥ iij. M.
Half to be taken at bedtime and half at two A. M.

He believes this superior to all other combinations for the ejection of teniæ.

RÉSUMÉ OF REMEDIES.

Ailanthus Glandulosa. The powdered bark (gr. vij–xx) is an active anthelmintic in tape-worm.

Alumen, given in milk, is a remedy of some avail.

Benzine has been tried with success by Dr. MOSLER and other German physicians. Dose, 60 to 100 drops, in capsules. The after effects are sometimes unpleasant.

Carbolicum Acidum has been used by Dr. RUMBOLD, of St. Louis.

628. ℞. Acidi carbolici, gr. xx.
Aquæ destillatæ, f. ℥ viij.
One-third every two hours.

Others have not found the worm affected by this agent.

Copaiva. Dr. S. CARO has recorded a case (*N. Y. Med. Jour.*, May, 1876,) of the repulsion of a worm by the balsam copaiva, when nearly all other reputed remedies had failed.

Creasotum. This is recommended by Dr. HENRY BRICKWELL, of England, in doses of gtt. j–iij, three times a day for a week, followed by a brisk purge.

Eupatorium Perfoliatum. The decoction of this plant is reported by Dr. H. S. WILKINS (*Medical and Surgical Reporter*, April, 1874,) to have expelled, promptly, a tape worm.

Ether Sulphuricus. Dr. LORTET, in 1867, suggested ether (f. ʒ v at a dose), followed, in two hours, by olei ricini, f. ʒ j. He and various observers since, report successful cases.

Filix Mas is an old and esteemed remedy. The fresh root must be used.

629. ℞. Extr. filicis maris æth.,
Pulv. rad. filicis, āā gr. xxx.

Make thirty pills. Take ten at night, ten the next morning, and an hour after, the remainder. (KRAUS.)

TROUSSEAU'S method was to place the patient on a milk diet for a day; the next morning he prescribed ʒ j of the oleo-resin, in four equal doses, a quarter of an hour apart; the third day, the same quantity, followed by a brisk purgative.

Granati Radicis Cortex. The pomegranate enjoys a wide reputation against tape worm.

630. ℞. Granati rad. cort., ℥ iij.
Sodii bicarb., ʒ j.
Aquæ, Oj. M.

Macerate six hours, and boil to Oss.

Take in the morning, fasting, in three equal doses, following the last with olei ricini, ℥ j. Or:

631. ℞. Extr. granati rad. cort., ʒ v.
Extr. fil. maris æther., ʒ ij. M.

Make thirty capsules. Take them within two hours.

The bark of the pomegranate root is objectionable, on account of the abdominal pain it causes in many persons.

Kameela. This product of the *Rottlera tinctoria* is used in doses of ʒ j–iij. It is an effective remedy, but liable to gripe.

Kousso (*Brayera anthelmintica.*) The reputation first enjoyed by this tænifuge has somewhat diminished of late. It is disagreeable to take, and produces much intestinal distress. The dose is about ℥ ss. According to Dr. ALOIS MONTI, of Vienna, the compressed pastilles of kooso flowers, from Erlangen, are unsurpassed in usefulness. He has found no difficulty in their employment; and ten grammes he thinks infallible. The alkaloid, *koossine*, if quite pure, is more convenient, because the dose required is smaller; two grammes to five grammes, according to the age of the child, are sufficient. With these two, there is no need for any preparatory treatment; and if the head of the tænia does not come away the first time, they may be repeated the next day. Children take them as if they were sugar-plums; and they do not cause nausea or vomiting, nor are they followed by persistent diarrhœa.

Nux Vomica and its alkaloid, *Strychnia*, has been reported upon favorably, both in Europe and America. Dr. A. R. KILPATRICK, of Texas, uses the following:

632. ℞. Strychniæ sulphatis,
Arsenici,
Hydrarg. chlor. corrosiv., āā gr. $\frac{1}{12}$. M.

For one pill. One three times a day.

Dr. MASSE publishes in the *Montpellier Médical*, 1877, some observations on a case in which he procured the expulsion of three tape worms by the administration of the tincture of nux vomica.

Peponis Semina, pumpkin-seeds, are unquestionably both a powerful and a pleasant remedy in tape worm. From 2 to 4 ounces of seeds should be pounded in a mortar, then mixed with milk or water, strained, and the fluid taken on an empty stomach. If the bowels do not act in a few hours, castor oil should be given. The dose should be repeated daily until the worm is expelled.

Pepsina. Full doses of pepsin have been found, by M. BOUCHUT, eminently successful in dislodging and destroying tape worms in children. (*Medical Examiner*, 1878.)

Potassii Picronitras. This has been recommended by some German physicians.

633. ℞. Potassii picronitratis, gr. xxviij.
Pulv. jalapæ, ʒ ix.
Extr. glycyrrhizæ, q. s. M.
Make 30 pills. One three times a day.

It is efficient, but apt to be followed by general malaise.

Saoria, the ripe fruit of the *mæsa picta*, an Abyssinian tree, has long enjoyed a good reputation as a tænicide. The dose is ʒ ss–j, as:

634. ℞. Saoriæ, ℥ j
Zingiberis, ʒ ij.
Cassiæ, gr. xv.
Aquæ, Oj. M.

Strychnia. See *Nux Vomica.*

Terebinthinæ Oleum. Recommended by Dr. WATSON (see above) in large doses. Others prefer ʒ ss, twice a day, continued for some time. Sometimes it is combined with castor oil:

635. ℞. Olei terebinth.
Olei ricini, aa f. ʒ ss.
Mucilag. acaciæ, q. s. M.
Make an emulsion. For one dose, fasting.

ASCARIS LUMBRICOIDES—LUMBRICI—ROUND WORMS.

DRS. MEIGS AND PEPPER, PHILADELPHIA.

These writers consider that as the diagnosis of lumbrici is nearly always doubtful, it is best never to risk the irritating vermifuges unless worms have actually been passed. In slight and doubtful cases they prefer small quantities of *worm-seed oil* to anything else. It may be given in doses of gtt. iv, to children of two years, three times a day for three days, followed on the fourth day by some castor oil or syrup of rhubarb. The following is a good formula to disguise its taste:

636. ℞. Olei chenopodii, gtt. lx–f.℥j.
Mucilag. acaciæ, ℥ij.
Syrupi simplicis, f.℥j.
Aquæ cinnamomi, f.℥ij. M.
Give a dessertspoonful three times a day for three days, and repeat after several days.

In giving the *pink root*, it is best to combine it with some cathartic substances, as in the following formula of Dr. G. B. Wood:

637. ℞. Spigeliæ,
Sennæ, āā ℥ss.
Magnesiæ sulph., ℥ij.
Fœniculi, ℥j.
Aquæ ferventis, Oj. M.
Macerate for two hours in a covered vessel. Dose, a tablespoonful, to a child two years old, once or twice a day, or every other day, so as to procure two or three evacuations in the twenty-four hours.

The *fluid extract of spigelia and senna* is also a very acceptable combination.

PROF. J. LEWIS SMITH, M. D., NEW YORK.

The long-popular American remedy for worms is the pink root, *spigelia marilandica:*

638. ℞. Fluidi extracti spigeliæ f.℥j.
Fluidi extracti sennæ, f.℥ss. M.
One teaspoonful to a child of three to five years.

Or:

639. ℞. Fluid extracti spigeliæ et sennæ, f.℥j.
Santonini, gr. viij. M.
One teaspoonful to a child of five years.

"This is probably the best anthelmintic that can be employed for the destruction of the round worm in uncomplicated cases, and it is also very useful in treating the ascaris vermicularis."

In some cases of protracted intestinal disease, attended by an increased and vitiated secretion, there is nothing so good as *turpentine.* The following is Dr. Condie's formula:

640. ℞. Mucilaginis acaciæ, f.℥ij.
Sacchari albi, ℥j.
Olei terebinthinæ,
Spiritûs ætheris nitrosi, āā f.℥iij.
Magnesiæ, ℈j.
Aquæ menthæ, f.℥j.
A teaspoonful to a child of five years.

DR. EUGENE BOUCHUT, PARIS.

641. ℞. Hydrargyri chloridi mitis, gr. ij.
Santonini, gr. iss.
Sacchari lactis, gr. xv. M.

To be given in one dose, as a vermifuge, in a teaspoonful of honey, to an infant two years old.

DR. GIORDANO, FLORENCE.

642. ℞. Sulphuris loti, ℥ss.
Magnesiæ, ℥j. M.

Divide into four powders. One to be given morning and evening to children who have passed worms, in order to prevent their reproduction.

DR. G. CALDERWOOD, ENGLAND.

Of all remedies for lumbrici, undoubtedly the best is *santonin*. In regard to its administration, this writer remarks (*British Medical Journal*, February, 1875,) that it should always be given for three or four days continuously before a purgative is prescribed. To give it with, or only once before, a cathartic, does not accomplish the work completely. It acts toxically, and must have time to do its work. The worms are passed like other fæcal matter, when dead; and so long as they are alive, no amount of purging will bring them all away.

DR. F. T. ROBERTS, ENGLAND.

This author prescribes an aperient, limits the diet to liquids for a day, and then employs santonin in doses of from one to three grains every morning for two or three days, in sugar or syrup, or made up into lozenges, or with gingerbread. It is more efficacious when mixed with castor oil; and Küchenmeister advises that from two to four grains be dissolved in ℥j of the oil, and ℥j taken every hour until it acts. Troches of santonin, each containing half a grain of the principle, can now be obtained from all druggists.

DR. ROBERTS BARTHOLOW.

643. ℞. Olei chenopodii, gtt. x.
Fld. extract. spigel. et sennæ, f.℥j. M.

For one dose. An excellent combination.

ASCARIS VERMICULARIS—OXYURIS—THEAD WORMS—SEAT WORMS.

DR. T. SPENCER COBBOLD, LONDON.

This helminthologist calls attention to the true residence of the seat worm. (*British Medical Journal*, February, 1874.) He maintains that the entire length of the colon is the territory inhabited by the

threadworm, the cæcum itself constituting the parasites' true head-quarters. Knowing this, therefore, to be the case, and likewise understanding, as we now do, how these entozoa originally gain access to their human bearers, it is clear that we are in a position to treat the threadworm helminthiasis on thoroughly rational principles. Injections cannot be conveniently employed to wash out the contents of the arch of the colon and cæcum, and therefore we must, in the main, rely upon the operation of medicines taken by the mouth. He therefore, employs injections only for the purpose of dislodging such oxyurides as have been driven down to the lower bowel.

When it comes to the question of the choice of drugs, a great variety of medicinal agents may be used with good effect. Some seem to answer better in particular cases than in others. Speaking generally, he gives a preference to active *saline cathartics* repeated for several days in succession, followed by the use of cold water enemata. Small doses of chloric ether and sulphate of iron are eminently serviceable additions, and the same may be said of aloes, with or without assafœtida. In cases where these drugs are objected to, he has employed various active mineral waters with good results. Bitters of all kinds are useful, and patients who object to salines will swallow any reasonable amount of the infusion of gentian and other pure vegetable tonics. As a rule, oxyurifuges should be administered in the form of copious draughts, and the oftener they are repeated, for a short interval, the more effective will they prove in the end. The rapid passage of the drugs through the bowel will, if several times repeated, carry most of the parasites sufficiently low down to be within reach of the clysters; and the prevention of the return of the parasites to the upper part of the colon, is one of the practical points worth looking to. The employment, therefore, of enemata, after the exhibition of remedies by the mouth, cannot fail to prove beneficial.

MR. WILLIAM DATE, LONDON.

644. ℞. Infusi quassiæ, Oj.
Sodii chloridi, ℥ ij. M.
Use as an injection, once a day.

When this fails to dislodge them completely, give:

645. ℞. Ferri sulphatis,
Quiniæ sulphatis,
Pill. aloes cum myrrhâ,
Pill. galbani compos., āā gr. j.
One such pill thrice daily.

This treatment, in a fortnight, will completely destroy the parasites.

PROF. W. H. VAN BUREN, M. D., NEW YORK.

646.	℞.	Acidi carbolici,	gtt. x–xx.	
		Glycerinæ,	℥ j.	
		Potassii chloratis,	ad saturandum.	
		Aquæ,	f. ℥ viij.	M.

Use as an enema, in thread worms, *oxyuris vermicularis*.

It is sometimes necessary to increase the amount of carbolic acid.

DR. F. WEBB, MICHIGAN.

This practitioner has stated (*Michigan Medical Journal*, November, 1871,) that in cases of ascarides, the *hyposulphite of soda*, in doses large enough to produce slight catharsis, given three times a day, has availed to expel ascarides when other vermifuges and various enemata have failed.

Along with whatever other treatment is used for thread-worms, it is important to anoint, with mercurial or other parasiticide ointment, the anus and adjacent parts, from time to time, in order to destroy the ova of the worm, which are frequently deposited external to the rectum.

DR. GUICHON, PARIS.

647.	℞.	Santonini pulveris,	℥ j.	
		Resinæ jalapæ,	gr. ij.	
		Chocolate,	℥ j.	M.

Divide into thirty lozenges. Give one in tne morning, on an empty stomach, to an infant two years old; two or three to older children.

648.	℞.	Aloës barbadensis,	℥ ss.	
		Potassii carbonatis,	gr. xv.	
		Decocti amyli,	f. ℥ x.	M.

To be given as an injection, in ascarides of the rectum.

DR. AITKEN.

649.	℞.	Pulv. scammon. comp.,	gr. iv.	
		Pulv. aromatici,	gr. v.	M.

For one dose, at night.

The day after taking this purgative, the patient ought to be kept on low diet, with solid food. On the day succeeding the purgative, from 5 to 10 grains of the ethereal extract of santonin, or from 3 to 4 grains of santonin itself, may be given. Injections of infusion of quassia, or of steel and quassia and aloes, or a solution of common salt in gruel, or a similar quantity of lime-water, are useful in the expul-

sion of the ascaris vermicularis. Half an ounce of the compound decoction of aloes, taken in the morning, fasting, once or twice a week, and 3 ounces of infusion of quassia, may be taken every morning that the aloes are not taken.

RÉSUMÉ OF REMEDIES.

Adeps. Anointing the anus and sphincter with lard destroys the ova, and is a useful adjuvant, as it is believed that the ova are only set free in the rectum near the anus.

Asarum Canadense. As an internal remedy, the Canada snake-root has been found valuable by Dr. S. S. BOND, of Philadelphia, (*Medical Times*, September, 1874,) and others. It may be given in infusion, or syrup, or children may chew it as they would liquorice-root.

Aqua Calcis, in injections, has been commended.

Argenti Nitras, gr. j–iij to aquæ ℥ j, as an enema.

Ferri Chloridi Tinctura, ℥ ss to aquæ Oj, is said to be a very efficient enema.

Fuligo Ligni. An infusion of soot has been strongly recommended in *ascarides*, by Dr. HEWSON, of Philadelphia. It is made by adding a cupful of soot to a pint of boiling water, and straining. Half or a fourth of this quantity should be thrown up the rectum daily, for one or two weeks.

Hydrargyri Chloridum Corrosivum, gr. j to aquæ Oj, has been used in obstinate cases by Dr. NIEMEYER.

Hydrargyri Chloridum Mite. M. VALLEIX was accustomed to anoint the anus and lower bowel with:

650. ℞. Hydrarg. chlor. mitis, ℈ iv.
Axungiæ, ℥ vj. M.

Dr. E. F. WALKER (*New York Medical Journal*, 1878,) says that a large dose of calomel (gr. x–xxx) gives better results than any of the ordinary drugs in dislodging seat-worms.

Hydrargyri Unguentum. Anointing the anus and sphincter with mercurial ointment is very useful in destroying the worms there located and their ova. It may also be introduced on a bougie.

Potassii Sulphuretum, in the proportion of ℈ ss–j to aquæ Oj, is an efficient injection.

Sulphur. A dose of sulphur taken every morning aids in dispelling the parasites.

Terebinthinæ Oleum, ℥ ss to milk Oj, may be used as an enema.

TRICHINÆ, TRICHINOSIS.

The general treatment of trichinosis is symptomatic, as up to the present we have discovered no specific vermicide for the *trichina spiralis*. The suggestion of *ergot* has been made by Dr. ROHDE, of Berlin. He had a case of trichinosis in which severe bleeding of the nose occurred, and in which he prescribed extract of secale cornutum as a styptic.

The hemorrhage was immediately arrested, and with this, rapid improvement of the general symptoms also occurred. This result led him to prescribe ergot in other cases of the disease, and in all instances distinct improvement followed. He believes, therefore, that we have, perhaps, in ergotin, a means of treatment which, without having any marked effect on the human economy, may prove fatal to trichinæ and their offspring.

Picric and carbolic acid, as well as benzine, which have all, at times, been recommended, have proved entirely useless in pigs, and probably would be equally so in the human subject. Probably the best treatment in the early stage, to cleanse the intestines from the parasite, would be purgative doses of calomel, ℈i–ij, on the plan recommended above for seat-worms by Dr. E. F. WALKER.

JAUNDICE.

ROBERTS BARTHOLOW, M. D., CINCINNATI.

Excellent results have been obtained by this practitioner in malarial and catarrhal jaundice by the use of *manganese:*

651. ℞. Chinoidin, ℥j.
Manganesii sulphatis exsiccatæ, ℈ij. M.
For twenty pills. One three times a day, in malarial jaundice.

652. ℞. Fel bovini purificati, ℥j.
Manganesii sulphatis exsiccatæ, ℈ij.
Resinæ podophylli, gr. v. M.
For twenty pills. One three times a day, in catarrhal jaundice.

In similar cases he also finds the following of great use:

653. ℞. Quiniæ sulphatis, ℈ij.
Ferri sulphatis exsiccatæ, ℈j.
Acidi arseniosi, gr. j. M.
To make twenty pills. One thrice daily, in malarial jaundice.

PROF. WILLIAM PEPPER, M. D., PHILADELPHIA.

In simple jaundice—acute congestion of the liver—the indications are to check vomiting, to relieve the congestion, and to start the bile. To accomplish the first, give hydragogue cathartics, elaterium, bitartrate of potash, etc.; or, if the stomach is too irritable, administer an enema

of croton oil, gtt. ij, in emulsion. The congestion of the stomach and liver can be relieved by counter-irritation, as by a large blister over the epigastrium. This is very effective to arrest the vomiting. By the mouth, give the following:

654. ℞. Hydrargyri chloridi mitis, gr. iij.
Pulveris opii, gr. ij.
Bismuthi subnitratis, ℈ ijss. M.
Make six powders. One to be given every three hours.

This combination powerfully aids the mercurial in relieving the hepatic congestion, and stimulating the gastro-intestinal glands. The diet in such cases should be restricted to milk. (*Medical and Surgical Reporter*, November 27th, 1875.)

PROF. A. GUBLER, FACULTÉ DE MEDECINE, PARIS.

655. ℞. Aloës socotrinæ,
Gambogiæ,
Hydrargyri chloridi mitis, āā gr. xv.
Syrupi, q. s. M.
Divide into ten pills. Order one or two a week, to keep the bowels soluble, in icteric disease of the liver.

MIDDLESEX HOSPITAL, LONDON.

656. ℞. Pilulæ hydrargyri, gr. xxx.
Digitalis pulveris,
Scillæ pulveris, āā gr. v. M.
Divide into ten pills. One morning and evening, in icterus, to eliminate the coloring matter of the bile from the blood.

RÉSUMÉ OF REMEDIES.

Aloes has been used with benefit in jaundice.

Ammonii Chloridum, in doses of gr. xx every five hours, has, in the hands of Dr. ANSTIE, restored the biliary secretion, in a few doses, when it has been suppressed by a powerful nervous shock or mental perturbation. In his opinion, it is one of the most powerful of all biliary functional restoratives.

Benzoicum Acidum has recently attracted attention as a remedy in jaundice due to suppression of the biliary secretion.

Colchicum, in small doses, combined with mild mercurials, or soap, or alkalies, or with magnesia or the neutral salts, according to circumstances, has been prescribed by Dr. COPLAND with benefit. It must be continued for a considerable time, and carefully watched. If there be much debility, or if it produce depression, it should be combined with camphor.

Copaiba. Dr. B. J. MASSIAH (*British Medical Journal*, April, 1879,) says that the cholagogue action of this drug is not sufficiently recognized. In hepatic torpidity, cirrhosis and jaundice, it is a valuable aid. The dose may be ℈j thrice daily.

Ether, from its power of dissolving cholesterine and its anti-spasmodic properties, has been recommended as an internal remedy in jaundice depending on the presence of gall-stones.

Hydrargyri Chloridum Mite. Jaundice sometimes yields rapidly to a calomel purgative (gr. v,) followed by a saline, which, however, prove useless when the affection is connected with obstruction by gall-stones, or organic diseases of the liver.

Magnesii Sulphas. The following formula is sometimes useful in severe forms of jaundice:

657.	℞.	Magnesii sulphatis,	℥ ss–j.	
		Magnesii carbonatis,	gr. xv.	
		Spiritûs ammonii aromatici,	♏xxx.	
		Aquæ,	f. ℥ x.	M.

Make a drink. Take thrice daily.

Nitro-Muriaticum Acidum Dilutum is useful both internally and externally, in the form of a bath. It is contra-indicated if there be inflammatory action present.

**Podophyllin* is often a very reliable remedy in jaundice.

Potassii Chloras, combined with carbonate of soda, is useful in chronic or asthenic jaundice, accompanied by a torpid state of the liver.

Potassii Sulphas is recommended by Dr. A. T. Thompson, as more useful than other saline purgatives in jaundice.

Sanguinaria, in the form of the powder (gr. ij–v,) or the infusion, has been employed with advantage in jaundice and torpor of the liver.

Taraxacum, combined with small doses of colchicum, has been found serviceable in jaundice depending upon hepatic disease.

**Cathartics.* Dr. Gross states that in jaundice depending upon hepatic derangement, after bilious evacuations have been produced, an active aperient, every second or third day, for the space of ten days or a fortnight, should never be omitted, so as to carry off the remains of the disease, and prevent a relapse. This is a simple but successful practice which should not be neglected.

Enemata. Dr. Krull, of Mecklenburg, extols enemata of cold water, 60° Fah., as an excellent remedy in catarrhal jaundice (*Berliner Klin. Wochenschrift*, No. 12, 1877.) He uses one to two litres once a day, to be retained as long as possible.

TORPIDITY AND FUNCTIONAL DERANGEMENT OF THE LIVER.

CHARLES MURCHISON, M. D., LL.D., F. R. S., LONDON.

In the "Croonian Lectures" of 1874, this eminent authority discussed the functional derangements of the liver and their treatment. Commencing with *diet*, he recommends one chiefly of stale bread, plainly cooked mutton, white fish, poultry, game, eggs, a moderate amount of vegetables, and weak tea, cocoa, or coffee. In severe cases, potatoes, rice, sago and fruits have to be given up; milk suits some, not all. The principal meal should be in the morning, and the quantity not beyond the needs of the system. All alcoholic drinks should be prohibited. *Cholagogues:* great advantage is derived from aperient medicines; salines are the best, as sulphate of magnesia, sulphate of soda, tartrate of potash and soda, Friederichshall, Pullna, or other saline water; as to the benefit of mercury, our author says that the skepticism of the most doubting physician would be removed should he unfortunately find it necessary to test its efficacy in his own person. Calomel is the form he prefers. Podophyllin he regards as less certain in its action and more liable to cause griping. Colchicum is a useful adjunct to other aperients. Taraxacum, he thinks, has no specific action, but is useful as a mild aperient, and may be advantageously combined either with alkalies or mineral acids. *Alkalies:* these are next in importance. One grain of carbonate of lithia, or of carbonate of ammonia, nearly equals a grain and a half of carbonate of soda, or two grains of carbonate of potash. It is well to suspend their use occasionally as, when long continued, they derange gastric digestion. *Chloride of ammonium* has a great and well-deserved reputation in hepatic congestion and other functional derangements of the liver:

658. R. Ammonii chloridi purificati, ℥ ss.
Aquæ menthæ piperitæ, f. ℥ iij. M.
A dessertspoonful three times a day.

It may be combined with either alkalies or mineral acids. The last-mentioned remedies, our author considers of minor value, in these complaints. *Tonics* are apt to disagree in many cases of functional hepatic derangement. Neither iron nor quinine acts well. Gentian,

chiretta, cascarilla, serpentaria, and nux vomica, are preferable to preparations of cinchona. *Arsenic* suits some patients. *Opium* is contra-indicated, except in those functional hepatic troubles which arise in diabetes.

RÉSUMÉ OF REMEDIES.

Ammonii Chloridum is worthy of trial when there is want of biliary action.

Hydrargyri Pilulæ. ABERNETHY'S practice, in bilious derangements, of giving, almost indiscriminately, 5 grains of blue pill at night and a senna draught in the morning, is still continued by many practitioners.

**Ipecacuanha*, in small and long-continued doses, is frequently productive of great benefit in functional derangement of the liver.

Euonymin, from the *Euonymus atropurpureus*, and *Iridin*, from the *Iris versicolor*, have been reported upon by Prof. RUTHERFORD, of Edinburgh. He gives of the former, gr. j–ij; of iridin, gr. iv, in pill form. There is little difference in their action, both being feeble intestinal stimulants, increasing the functional activity of the liver, and acting mildly and without depression. (*Brit. Med. Jour.*, June, 1879.) For ordinary and simple cases, the following is a convenient form:

659. ℞. Ex. euonymi fluid., f. ℥ ilj.
Syr. aurantii, f. ℥ j. M.
S. One teaspoonful before breakfast.

If the debility and torpor are somewhat extreme, a dose may be taken before each meal, in which case, half a teaspoonful is almost always amply sufficient.

Iridin is a cholagogue aperient, gentler in its action than podophyllin. It is very useful in a sluggish state of the bowels, arising from torpidity of the liver, or when the stools are pale, particularly in the interval of overt attacks in gouty persons.

Leptandrin is useful in torpidity of the liver, in which case it is said to be a valuable adjunct to podophyllin and iridin.

Nux Vomica and *Strychnia* are valuable hepatic stimulants:

660. ℞. Extracti nucis vomicæ, gr. viij.
Extracti colocynthidis comp., gr. xlviij. M.
For twenty-four pills. One three times a day, in chronic hepatic congestion.

Oleum Olivæ. Dr. E. P. TOWNSEND (*Country Practitioner*, October, 1879,) states that, for many years, he has used olive oil, ℥ i two or three times daily, in cases of chronic hepatitis and torpidity of the liver, with or without jaundice, with undoubted good effect.

**Podophyllin* is now much employed in torpor of the liver.

Sanguinaria has been used with advantage in torpidity of the liver, the powder (gr. ij–v), or infusion, being preferred to the tincture.

Senna, in infusion (f.℥-iij), either alone or combined with sulphate of magnesia (℥ ij-iv), or tartrate of potash (℈ ij-℥ ij), is an efficient purgative in bilious derangements.

**Taraxacum* is a valuable remedy in torpor of the liver.

Turkish Baths are sometimes of great advantage as excitants of the liver.

PYROSIS.

Pyrosis, or water-brash, is not unfrequently connected with organic disease of the stomach; but its most typical form is as a functional disorder, often due to the use of certain ingesta, among which, oat-meal, cheese, and tobacco, may be mentioned. One of the most useful medicines is *bismuth*, which may be combined with compound kino powder.

The following are some of the prescriptions of

PROF. PIORRY, PARIS.

661. ℞. Sodii bicarbonatis, ℥ iss.
Aquæ destillatæ,
Syrupi aurantii florum, āā f.℥ j.
Olei anisi, gtt. j. M.
For one dose, in pyrosis.

662. ℞. Quiniæ sulphatis, gr. xxij.
Pepsinæ, ℈ vss.
Extracti absinthii, q. s. M.
Divide into forty pills. Two before each meal, in functional derangements of the stomach, particularly pyrosis, flatulence, and gastralgia, after eating.

663. ℞. Sodii bicarbonatis, gr. xiv.
Tincturæ columbæ, f.℥ j.
Aquæ destillatæ, f.℥ iij.
Syrupi gentianæ, f.℥ j. M.
To be taken during the day, in the same manner as the above formula.

664. ℞. Magnesiæ, gr. iss.
Bismuthi subnitratis, gr. iv-vij.
Opii pulveris, gr. ss. M.
For one dose; to be taken before eating, in acid dyspepsia and with pyrosis.

RÉSUMÉ OF REMEDIES.

Alum, in doses of ℈ j thrice daily, in the form of an electuary, has been strongly recommended.

Argenti Nitras is an excellent remedy.

Argenti Oxidum has been employed with marked benefit. It must not, in these cases, be combined with creasote, as the combination causes violent decomposition and the development of great heat, and even flame.

**Benzoin.* A fluid drachm of the tincture, with mucilage, is said to be efficacious in many cases.

Bismuthi Subnitras, combined with opium, seldom fails to afford relief.

Carbolicum Acidum has been employed with success by Dr. PODMORE JONES (*Practitioner,* November, 1868,) in the following formula:

665. ℞. Acidi carbolici, gr. j.
Alcoholis, f. ʒj. M.

Twenty-five drops in a wineglassful of water, an hour before each meal.

Gallicum Acidum is of benefit in cases accompanied by organic disease of the stomach, or by disease of the liver.

**Kino Pulvis Compositus* is said by Sir T. WATSON to be an admirable remedy in this affection, in doses of gr. x, thrice daily.

Liquor Ferri Nitratis, in doses of gtt. x–xv, thrice daily, is useful in those cases where tonics and astringents are indicated.

Lupuli Extractum has been found serviceable.

Magnesiæ Carbonas is occasionally an effectual remedy.

**Nux Vomica* is very useful in many cases. Dr. BARLOW recommends the following formula:

666. ℞. Extracti nucis vomicæ, gr. iss.
Argenti nitratis, gr. ij.
Extracti lupuli, gr. xij. M.

Divide into six pills. One thrice daily.

**Opium,* in combination with gentian, frequently affords speedy relief.

Sulphurosum Acidum, in the hands of Dr. LAWSON (*Practitioner,* September, 1868,) has produced the best effects, in doses of f. ʒ ss–j, thrice daily, shortly before meals, in plain distilled water.

VOMITING.

In the treatment of this distressing symptom, it is of the utmost importance to distinguish between vomiting from *cerebral*, from *uterine* and from *gastric* irritation, as the management of the three is essentially different. That from uterine sympathy is not considered here. The principal anti-emetics will be found in the following list:

RÉSUMÉ OF REMEDIES.

Ammonii Citras has been recommended in the vomiting attendant on ulcer of the stomach, but Dr. W. BRINTON considers that the salts of ammonia do more harm than good in these cases.

Ammonii Chloridum is said to relieve the vomiting attendant on scirrhus of the stomach more promptly and uniformly than any other remedy.

Arseniosum Acidum, in the form of Fowler's solution, is advised by Dr. RINGER, in the morning vomiting of drunkards.

Bismuthi Subnitras, especially when combined with hydrocyanic acid, often speedily allays vomiting in connection with stomach diseases.

Calcis Aqua sometimes succeeds when hydrocyanic acid and other remedies fail. It has less influence on sympathetic vomiting than on that connected with functional derangement of the stomach.

Carbonic Acid, in the form of an effervescing draught, is often an effective remedy.

**Chloroform*, in doses of a few drops, is often very useful in obstinate vomiting.

Cinnamomum, in aqueous infusion, is often of benefit in continued nausea and vomiting.

Cocculus Indicus, according to PHILLIPS, is the great rival of nux vomica in nervous vomitings, when attended with a dull and heavy pain in the head, and intolerance of light and sound.

Creasotum is considered by many as an overrated remedy in vomiting. Dr. RINGER considers the principal cause of its failure is due to its being given in too large doses. He obtains the best effects by adding just sufficient creasote to water to make it taste distinctly but not strongly of the medicine, and administering of this a dessertspoonful frequently. He finds it effectual, given in this manner, in allaying nausea and retching, though some consider it to have less power over actual vomiting.

Hydrocyanicum Acidum, given in an effervescing draught, is a very efficient remedy in vomiting arising from any morbid conditions.

**Ipecacuanha* is considered by Dr. RINGER to have few equals in checking some forms of vomiting. In numerous instances he has found drop doses of the wine, administered every hour or thrice daily, according to the urgency of the case, check vomiting of pregnancy, the morning vomiting of drunkards, the vomiting which accompanies general weakness after acute diseases, and

that of acute catarrh of the stomach in children. That form of vomiting after meals in which there is no nausea or pain, or even discomfort, is quickly stopped by these small doses of ipecacuanha. Even in vomiting from cancer of the stomach, he has sometimes succeeded with it after the failure of other remedies. Dr. C. D. PHILLIPS states (*Practitioner*, November, 1859,) that its beneficial operation is clearly discernible in most cases of continued and obstinate retching, or vomiting where the stomach is not primarily affected, but disturbed by sympathy with some other organ or part of the body, whether the primary affection be acute or chronic.

Koumiss, wineglassful doses every half hour, has been found effectual in obstinate cases.

Nux Juglandis. Dr. EDWARD MACKEY has found (*Practitioner*, December, 1878,) a tincture of walnuts very efficacious in hysterical vomiting, that from dyspepsia, pregnancy and anomalous cases. His formula is:

667. ℞. Fresh walnuts, ℥ xxx.
Alcohol, ℥ xij.
Water, q. s. M.
Distill ℥ xvi. Dose, f. ʒ j every four hours.

Sodii Carbonas is beneficial in vomiting arising from acidity of the stomach.

Nux Vomica, in the form of the tincture, is recommended in the vomiting of pregnancy. Dr. DOUGLAS POWEL states (*Practitioner*, November, 1868,) that the tincture in doses of ♏x, will often arrest the vomiting of phthisis. Dr. BARLOW recommends, in vomiting connected with malignant disease of the stomach, the following formula:

668. ℞. Extracti nucis vomicæ, gr. j.
Extracti conii, gr. xij. M.
Make six pills. Take one three times a day.

Sulphurous Acid, in doses of ♏xxx, thrice daily, has been employed by Dr. DRYSDALE, with success (*Lancet*, July 24th, 1869,) in constant vomiting and eructation.

Tartaricum Acidum, in effervescing draughts, sometimes succeeds in allaying vomiting.

Blisters. A small blister over the epigastric region frequently effectually checks vomiting arising from functional or nervous disorder of the stomach, and also that consequent on fevers.

Ice in lumps, or minute quantities of iced brandy and water, or champagne, given every hour, is useful in severe vomiting attendant on pregnancy or uterine disease.

Leeches. Dr. TILT states that in vomiting connected with uterine affections, after the failure of ordinary measures, he has, on several occasions, seen it suddenly checked by the application of six leeches to the pit of the stomach, although there was no sign of inflammation there, and the patient's debility was such as not to justify loss of blood. The same procedure sometimes succeeds in idiopathic vomiting.

V. DISEASES OF THE URINARY SYSTEM.

Albuminuria—Bright's Disease—Diabetes Insipidus—Diabetes Mellitus—Dropsy (Ascites, Anasarca)—Functional Urinary Disorders, (Incontinence)—Hæmaturia—Nephralgia—Nephritis—Uræmia.

ALBUMINURIA.

The presence of albumen in the urine is generally a significant indication of renal disease. It appears in many specific fevers, scarlatina, diphtheria, in congestion of the kidneys from various causes, alcoholism and especially in the various forms of Bright's disease. Its treatment will often depend upon these associations.

DR. F. DE HAVILLAND HALL, LONDON.

In the treatment of acute albuminuria, such as is a frequent sequela of scarlet fever, this author condemns the usual procedure (in England) of "hard purging and sweating" (*Practitioner*, August, 1876.) He has achieved much better results from the following plan:

Directly any albumen was detected in the urine, the patient was ordered the *perchloride of iron*, and was allowed no solid food except a little bread and milk, and as much water as he liked to drink; this treatment, together with keeping the skin gently acting, sufficed in the majority of cases, but in a certain number the urine was almost suppressed, and in some there were uræmic symptoms. Whenever either of these contingencies occurred, he forbade all food for twelve hours, the child to have nothing but water and a drink made as follows:

669. ℞. Acid tartrate of potash, ℥j
Lemon syrup, f.℥j.
Water, Oj. M.

If, at the end of this time, the kidneys were beginning to act, he allowed a little milk, but not more than a pint in the twenty-four hours; if, however, the uræmia continued with little or no urinary secretion, he persevered with the water and bitartrate of potash; and, in severe cases, nothing else has been given for thirty-six hours. Dry

cupping, mustard poultices over the loins, and a purgative, were the only additional remedies employed.

The explanation of the good effects of abstention from solid food, and especially meat, during the course of acute desquamative nephritis, is, that if a patient is entirely deprived of nitrogenous food, the work of the kidneys is lessened and the urine is rendered less irritating, and the mild diuretic action of the bitartrate of potash seems to be useful.

He sums up the treatment of acute Bright's disease in the following words:

1. Milk and water with arrowroot, no solid food. 2. Mild diuretics, such as the citrate or bitartrate of potash with a free supply of water. 3. The skin kept just moist. 4. A daily evacuation of the bowels.

DR. T. LAUDER BRUNTON, LONDON.

This practitioner states that where true albuminuria is present, the indications are:

1. To remove the venous congestion of the kidneys. When this depends on cardiac disease, digitalis is called for; on pregnancy, etc., the prone position lessens it.

2. To diminish the flow of blood to the kidneys. To fulfill this, warm clothing, warm baths, diuretics and purgatives are required.

3. The anæmia consequent on the drain of albumen must be removed by iron, and light, digestible food.

WILLIAM AITKEN, M. D., LONDON.

670. ℞. Acidi gallici, ʒ ij.
Acidi sulphurici diluti, f. ʒ ss.
Tincturæ lupuli, f. ʒ j.
Infusi lupuli, f. ʒ vj. M.
A tablespoonful three times a day.

Said by the author to check the waste of albumen, especially in the more acute and recent forms of albuminuria.

J. M. DA COSTA, M. D., PHILADELPHIA.

671. ℞. Ammoniæ muriat., ʒ ij.
Tincturæ ferri chloridi, f. ʒ iss.
Aquæ, f. ʒ vj. M.
A tablespoonful thrice daily, in anæmic albuminoid degeneration of the kidneys or liver.

This author considers the *muriate of ammonia* one of the best agents

we possess to counteract the tendency to albuminoid degeneration in any organ.

RÉSUMÉ OF REMEDIES.

**Antimonii et Potassii Tartras* is recommended by Dr. BARLOW in the acute forms of albuminuria. He considers it indicated by the nature of the affection, and calculated to equalize the circulation, subdue the inflammatory action and restore the functions of the skin. But he does not employ it to the exclusion of other remedies, as moderate venesection, hydragogue cathartics, the warm bath, and the application of large linseed-meal poultices to the loins.

Aqua. Dr. W. N. DICKINSON, of London, recommends drinking large quantities of pure water, as the safest and best diuretic in this disease. (*Medical Times and Gazette*, June, 1876.)

Arsenicum. In some cases of albuminuria, seemingly dependent on imperfect digestion, Dr. T. L. BRUNTON has derived excellent results from Fowler's solution, gtt. iij, with meals. (*Practitioner*, June, 1877.)

Belladonna will, in the opinion of Dr. HARLEY, prove very serviceable in chronic albuminuria, provided that the kidney has not passed into the degenerative state bordering on fatty degeneration.

Cantharis, internally, has, it is said, been employed with benefit in purely chronic cases, but must be used with great caution.

Digitalis is indicated where there is cardiac complication, but must be used cautiously.

Eucalyptus Globulus. In albuminuria and post-scarlatinal nephritis, Dr. WILLIAM ANDERSON, of Brooklyn, has used with good results, the elixir and fluid extract of eucalyptus (*Proceedings of Kings Co. Medical Society*, Aug., 1879.) He expresses himself very decidedly as to the benefit he has witnessed from it. He gives gtt. x of the fluid extract, in water, every four or six hours.

**Ferri Iodidum* is often beneficial, particularly in old, broken-down constitutions.

Ferri Chloridi Tinctura is one of the most generally useful preparations of iron in albuminuria, possessing diuretic as well as chalybeate properties.

Fuchsin or *Rosanilin Hydrochloride,* has been found to check the secretion of albumen promptly, by M. BOUCHET, of Paris, (*Gaz. des Hôp.* 1879.) He gives gr. j, thrice daily, in aromatic water; in one case gr. iss daily for five days was followed by complete recovery.

Gallicum Acidum, in doses of gr. x, thrice daily, has been successfully employed.

Oxygen, in inhalation, has attracted considerable attention, but the results have been unsatisfactory.

Potassii Bitartras in acute and chronic cases is an efficient diuretic, ℥j to aquæ Oj.

Potassii Sulphas, gr. x–xx, two or three times a day, is said by Dr. DICKINSON to be sometimes invaluable as a habitual laxative.

Potassii Sulphuretum has been recommended in the following formula, to establish free diaphoresis:

672.	R.	Potassii sulphureti,	gr. v.	
		Tincturæ guaiaci ammoniatæ,	f. ℥ss.	
		Liquoris ammoniæ acetatis,	f. ℥ss.	
		Aquæ,	f. ℥j.	M.

For one dose, to be taken at bedtime, followed by a pint of hot whey.

Scoparius. In scarlatinal albuminuria, according to Dr. S. D. BELL (*Transactions Pennsylvania State Medical Society*, 1876,) scoparius has in his hands yielded "invariably the most flattering results." He used it in the form of decoction, made by boiling half an ounce of the tops in a pint and a half of water down to one pint. Of this a tablespoonful to a wineglassful was given every four or six hours, according to the age and severity of the symptoms.

Sodii Carbonas has been recommended in albuminuria, on the ground that alkalescence is a necessary condition of the blood; that the free alkali is soda; that when this constituent is deficient, the result is coagulation of blood in the capillary vessels and ensuing inflammation, and the potash or soda (uncombined or as carbonates,) taken into the stomach, have the power of rendering the urine alkaline and dissolving fibrine. The following formula may be employed:

673. ℞. Sodii carbonatis, ℥ ij.
Liquoris potassæ, f. ℥ ij.
Decocti chondri crispi, f. ℥ viij. M.

A tablespoonful every two hours, in milk. *Tartrate of iron* may be added when anæmia is very marked.

Tannicum Acidum, in from gr. xxx–lx per day, has been advised in the anasarca accompanying albuminuria.

Tiglii Oleum is one of the best hydragogue cathartics which can be given in albuminuria, as it produces copious evacuations with less sickness and discomfort than elaterium.

BRIGHT'S DISEASE.

ALFRED L. LOOMIS, M. D., NEW YORK.

This author is convinced that the diaphoretic and cathartic plan of treatment is wrong, and its apparently good results deceptive, and prefers the following:

In the acute stage of parenchymatous nephritis, whatever may have been the exciting cause, the patient must be kept in bed, in a large, well-ventilated apartment, with a temperature of 75° Fah.; milk should be his only article of diet. Dry cups should be applied over the kidneys, followed by poultices of digitalis leaves, and the infusion of digitalis leaves should be administered at the rate of half an ounce every two hours, for twenty-four hours, after which it may be continued at longer intervals, so long as uræmic symptoms are urgent. When the flow of urine commences, the digitalis should be discontinued, and diluent drinks freely administered to keep up the diuresis. If renal secretion is not restored within twenty-four hours after the

commencement of this treatment, warm baths, or hot-air baths, should be used in addition; and if the symptoms remain urgent, hydragogue cathartics may be given.

In the latter stages, those commonly known as chronic Bright's disease, the plan of treatment is essentially tonic. Iron and cod liver oil are the two great remedial agents, and should be daily administered, if they do not disturb the stomach. Milk should be the principal article of diet, and the patient should seek a warm and equable climate. The milk may be taken cold or hot, from a half pint to a pint at a time. Wine, in moderation, may be taken with the food. No depletory remedies should be employed in this stage, except in times of an emergency, when, from some sudden renal congestion, the remaining healthy portion of the kidney is impaired, and active uræmic symptoms present themselves. At such times, a hot-air bath, hydragogue cathartics, or stimulating diuretics are to be employed, but with great caution.

J. M. DA COSTA, M. D., PHILADELPHIA.

For the treatment of an acute case, following scarlatina:

674.	℞. Pulveris ipecacuanhæ compositi,	gr. iij.	
	Potassii nitratis,	gr. v.	M.
For one powder. To be taken at night.			

And,

675.	℞. Liquoris ammoniæ acetatis,	f.℥ iij.	
	Spiritûs ætheris nitrosi,	♏xx.	
	Syrupi tolutani,	♏xxxvij.	
	Tincturæ digitalis,	♏iij.	M.
For one dose, thrice daily.			

The skin should be made to act freely by means of hot baths and a few drachms of Rochelle salts, administered on alternate days. The diet should be mild and unirritating, all stimulants being avoided.

676.	℞. Tincturæ ferri chloridi,	f.℥ ss.	
	Acidi acetici,	f.℥ ss.	
Mix and add,			
	Liquoris ammoniæ acetatis,	f.℥ v.	
	Curaçoæ,	℥ ij.	M.
Teaspoonful thrice daily.			

This recipe, a modification of BASHAM'S mixture, is useful in chronic

Bright's disease, and in all those cases in which the union of a tonic and diuretic effect is desired.

DR. FELIX VON NIEMEYER, PROF. UNIVERSITY OF TÜBINGEN.

The loss of albumen from the blood being the immediate cause of most symptoms of the disease, the most important task of the physician is to cover the loss of albumen by a diet rich in protein substances and by appropriate medication. Soft-boiled eggs, milk, strong meat broths and roast beef, in as large quantity as the patient is able to digest, are probably the best preventives of the dropsy. Besides this, a moderate quantity of beer or good wine should be prescribed, as by the use of these the waste of tissue is retarded and nutrition promoted. Quinine and iron are the most suitable medicines. Our author has obtained most brilliant results, where all other treatment had failed, by putting the patients upon an exclusive diet of *milk*. They took no medicine whatever, but drank five or six pints of cow's milk daily. After the "cure" had been continued in this manner for about five weeks, some of the patients, who, prior to the treatment, had been in the most wretched condition, had got rid of their dropsy, recovered an appearance of health, and regained so much strength as even to be able to perform hard labor.

If the above measures fail in averting or allaying the dropsy, active diaphoresis is strongly to be recommended. Patients in an advanced state of dropsy often rid themselves of it completely in a few weeks by the daily use of a hot bath, of a temperature of 80° to 100° F., followed by sweating for two hours in woolen blankets. Debilitated patients sometimes, however, suffer so much from this treatment as to compel its discontinuance.

Whatever the theoretical objections to the employment of diuretics may be, yet, in desperate cases, recourse should always be had to them. Squills and other stimulating diuretics must not be employed without the utmost caution. But there are certain salts, particularly *cream of tartar*, which are decidedly beneficial in their effects. The free use of buttermilk, conjoined with the employment of cream of tartar and small doses of Dover's powders, will prove serviceable.

The drastic cathartics should only be resorted to in cases of extreme need, since the patient is liable to be affected by them, and since, by their persistent use, the digestion becomes impaired. Those most frequently employed are colocynth and,

677. R. Elaterii, gr. $\frac{1}{6}$–ss.
For one dose, as occasion requires.

FRANCIS SIBSON, M. D., D. C. L., ETC., LONDON.

In a review of the therapeutics of Bright's disease, (*British Medical Journal*, February, 1877,) this eminent practitioner lays down the following principles:

The employment of *narcotics* in any form, in cases of Bright's disease, directly adds poison to poison, of the like kind, and narcotics are, therefore, to be strenuously forbidden in every case of Bright's disease. This axiom does not rest upon physiological considerations only, which, if rightly interpreted, never can lead us wrong, and are, therefore, the true peculiar guide in the treatment of disease; for we have, also, direct evidence of the deadly effect of narcotics in Bright's disease. Death has occurred again and again, from the subcutaneous injection of moderate doses of morphia in those affected with Bright's disease. Neither opium, chloral, chloroform, hyoscyamus, belladonna, nor stramonium, should ever be exhibited.

For the extreme restlessness, we must give the *bromides* of ammonium and potassium, and Hofmann's anodyne ether; and a few drops of ether may safely be inhaled, as well as in the cases with excessive distress of breathing. The bromide may be pushed to large and extreme doses, and their effect ought to be carefully watched, so that if drowsiness be induced by it, in addition to the poison of the disease, iodide of potassium, coffee, and rousing and anti-narcotic means, may be freely resorted to.

The danger to combat is from the narcotic poison in the blood, which is not eliminated by the kidneys. To meet this indication, the patient should be encouraged to take exercise in the open air, and to keep his faculties active; they should be roused by strong coffee and tea, by the society of friends, and by the business of every-day life.

When the respiration is greatly distressed and suspended by turns, the proper treatment is steadily to eliminate the poison, and, at the same time, to rouse the powers, either by a small quantity of tea, strong coffee, or whiskey; by stimulants externally; and by maintaining the power by means of iron and food. These cases are very formidable, and generally die; but not unfrequently, the patients recover from the emergency, and even live for years. When coma and sopor are present, the hot-air bath and external stimulants, the strongest

coffee, and a treatment analogous to that of deep opium poisoning, but differing according to the necessities of the case, must be pursued; and this sometimes succeeds.

BELLEVUE HOSPITAL, NEW YORK.

The following is a summary of a plan of treatment recommended at the Bellevue Hospital, New York:

Diet. This class of patients should abstain, as much as possible, from meat. The opinion has been expressed that the excessive animal diet accounts for the great prevalence of the disease in America. Milk should be substituted for meat, and should be associated with lime. Butter may be used; eggs, if they agree, and fresh fish in the morning. Fried fats should be carefully excluded, but cream may be taken without stint. Vegetables and fruits are *always* good, but those should be selected which contain the least amount of woody fibre. Rice and potatoes, therefore, may be used; but asparagus, turnips, cabbage, and, notably, beans, which contain woody fibre in large quantities, should be assiduously avoided. Onions may be eaten with impunity, and are rather beneficial.

For the Anæmia. Iron should be administered from first to last, and, by preference, the tincture of the chloride. This preparation is assimilated with difficulty; hence, should not be given alone, but combined with nux vomica, and to this, spirits of nitre may be added, to assist the determination towards the kidneys. For example, ten drops of the tincture of the chloride of iron, ten drops of tincturæ nucis vomicæ, and one drachm of sweet spirits of nitre, may be given three times a day. Cod-liver oil increases the red corpuscles of the blood, because it is digested by the liver, and the product enters into them as an ingredient. The irritability of the stomach may make it troublesome to take, but it should be relied upon as much as in the treatment of phthisis.

To Combat the Disease Itself. We have one agent which may be regarded as a specific against increase of connective tissue in the body, wherever the interstitial inflammation may occur, and that is the bichloride of mercury. It should be given in small doses; $^1/_{20}$ of a grain is the usual amount, and should be combined with a diuretic, to make it act upon the kidneys. For example, $^1/_{20}$ of a grain of the bichloride, 1 grain of digitalis, and 1 grain of quinine, may be given three times a day, with the result of producing a specific action upon the kidneys, and will *raise* the specific gravity of the urine.

Attention to the Condition of the Skin will materially assist the embarrassed kidneys, and to do this, we may have recourse to two things. If excessive œdema is present, the pressure produced shuts off the circulation to a great extent and prevents removal of the fluid by diaphoresis. It is much better than to make punctures in the distended skin of the legs, and let the water drain away at once. No apprehension need be had with reference to this trifling operation, if the limb, when the punctures have been made, is wrapped with cloths wet in a solution of carbolic acid in water, to which has been added essence or oil of cinnamon. The latter is to correct the smell of the carbolic acid, and is also equally antiseptic. The second thing is, to rub the patient all over once a day with sweet oil. If extra diaphoresis is desirable, it can be best obtained by placing a blanket in an empty bucket, pouring hot water upon it, for in this way much less water is required, and then wringing it out and quickly applying it around the body and covering it with a dry blanket. The skin should be well oiled before the blanket is applied.

RÉSUMÉ OF REMEDIES.

Aconitum. Dr RINGER recommends that after scarlet fever, the temperature be taken night and morning, and on the slightest rise being noted, aconite be given, to prevent nephritic inflammation.

Aqua. On the use of water in the early stages of Bright's disease, see (p. 342.)

Arsenicum. According to Dr. S. V. PAP, (*Wiener Medicinische Presse*, No. 13, 1875,) arsenic is useful in most cases. Its beneficial influence is manifested in the lighter forms more rapidly, certainly, and distinctly, than in the more severe forms, with a greater proportion of sugar than four per cent. In the former, the sugar may entirely disappear, which is but rarely the case in the latter. The diminution, or the disappearance of the sugar secretion, also takes place with a mixed diet. The maxim remains undisputed, however, that the amylaceous foods should, at least temporarily, be limited, as far as possible. After the cessation of the use of arsenic, months may pass before the disease returns.

Auri Chloridum. Dr. BARTHOLOW calls especial attention to the use of the salts of gold in chronic Bright's disease, granular and fibroid kidney. He has observed remarkable improvement follow the use of the chlorides of gold in these affections. They are best given in pill form and in small doses, $\frac{1}{30}$–$\frac{1}{20}$ of a grain three times a day. They are, of course, not adapted to the acuter forms of Bright's disease.

Cannabis Indica is spoken of by Dr. RINGER as having a high reputation in acute and chronic Bright's disease, especially when the urine is bloody.

Elaterium is a useful purgative when there is much dropsy, but it is best to combine

it with hyoscyamus, as it sometimes causes exhausting diarrhœa, especially if given after symptoms of uræmic poisoning have set in.

Ferri Chloridi Tinctura. As a chalybeate diuretic this form of iron is not surpassed by any.

Gallicum Acidum. Dr. H. C. Wood, Jr., states in certain forms of Bright's disease, when there was an abnormally large secretion of highly albuminous urine, he has found gallic acid to lessen very materially the albumen.

Guaiacum, in tincture or decoction, is regarded by Dr. Copland as the best diuretic in Bright's disease, especially when the skin is cool as well as dry.

Ipecacuanha, in the form of Dover's powder, (gr. v–viij, thrice daily,) is not only a useful diaphoretic in Bright's disease, but also allays pain and irritability, especially if assisted by a warm bath every other evening, or oftener.

Jaborandi has been suggested on theoretical grounds in this disease. A largely increased elimination of urea by the skin is one of the results of its administration.

Potassii Iodidum is said by Dr. Ringer to prove sometimes of signal service, even when the dropsy has been extensive and the urine very scanty.

Scoparius, in decoction, combined with nitric ether, is recommended by Dr. Barlow, when the renal secretion is very deficient. A pint of the infusion may be given. (See p. 344.)

Tannicum Acidum has been proved by experiment to diminish the loss of albumen in Bright's disease. Its value, however, in a remedial sense, is yet uncertain.

Diuretics. Drs. Bright, Osborne, Watson and others, condemned the use of diuretics, particularly those which are stimulating, in inflammatory dropsy attendant on granular disease of the kidneys. Dr. Christison believes, however, that they can be used without risk, and advises the following formula:

678. ℞. Pulveris digitalis, gr. j–ij.
Potassii bitartras, ʒj–ij. M.
Ter in die, ex aq.

Diuretics may sometimes be employed, with good results, by the *endermic* method.

Skimmed Milk. From six to eight pints should be used daily, and the diet restricted to it. The good effect should be seen inside of a week.

EXTERNAL MEASURES.

Camphorated Vapor Baths. At the Queen's Hospital, Birmingham (England), these baths are used with good effects for the relief of Bright's disease. They are also said to produce very free perspiration, and are given every evening, in the following manner: The patient is seated upon a cane-bottomed chair, with a large blanket pinned around his neck; ½ an ounce of camphor is placed upon a tin plate, under the chair, and above the flame of a small spirit-lamp, by the heat of which, the camphor is slowly vaporized. This plan of treatment is also employed in some cases of convalescence from

acute or sub-acute rheumatism, when the action of the skin is defective, and when some pain and stiffness of the joints remain.

Electricity. Dr. H. J. PRATT, of Colorado, reports a case of Bright's disease, where the galvanic current applied over the dropsical abdomen, and general faradization, resulted in relief of the dropsy, and in a diminution of the amount of the albumen.

DIABETES INSIPIDUS, POLYURIA, POLYDIPSIA.

PROF. A. BOUCHARDAT.

The Hygienic Treatment. This is always essential to success. The excretions should be regular and complete; the bladder thoroughly emptied every six hours, at least. Exercise should be taken regularly, and to a considerable amount; chilliness, after it, being carefully avoided. A sponge-bath should be taken every morning, followed by long and quick flesh rubbing. The following may be added to the bath, to increase the action of the skin:

679. ℞. Potassii carbonatis, ʒ ijss.
Essentiæ lavandulæ, gtt. xxx.
Tincturæ benzoin., f.ʒj. M.

The diet is of the utmost importance.

Food should be taken sparingly, well cut, and thoroughly masticated. Tomatoes should be forbidden, and also asparagus and beans, if their use cause renal pain or slight deposit in the urine. Meats of all kinds may be allowed, but only moderately; still more sparingly must we allow eggs, fish, lobsters, shrimps, shell-fish, and old cheese; milk is often useful. Almost all seasonable vegetables are good, particularly spinach, endive, lettuce, artichokes, celery, carrots, parsnips, and potatoes. The last-named are useful, and should take the place of some of the bread with the meal. Radishes may be advantageously used daily. The daily use of cresses or salad is indicated. All fruits, if the stomach bear them well, may be served daily. Olives, almonds, walnuts, hazelnuts, and pistachio nuts, must be served moderately. Good chocolate is allowable. If coffee provokes urinary secretion, it may be advised. Brandy and liquors should be avoided; very little beer allowed; and for alcoholic drink, a light white or red

wine, diluted freely with water. White, sparkling wines are contra-indicated, as well as gaseous drinks, as soda-water. On waking, going to bed, and with meals, sufficient watery drink should be taken to give about three pints of urine. This watery drink should consist of pure water, or, better still, a litre of water in which is dissolved one or two teaspoonfuls of powdered Seignette salt (tartrate of potash and soda.)

DR. J. M. DA COSTA.

One of the very few cases of complete cure from this generally fatal disorder, is reported by this author in the *Transactions of the College of Physicians of Philadelphia*, 1875. The treatment was by *ergot*, f. 3 j of the fluid extract being given at the outset, thrice daily, increased, in a few days, to f. 3 ij, three times a day. The cure was accomplished in about two months, and was permanent.

In the volume of the *Transactions* for the following year, Dr. JAMES TYSON reported a case in which he administered ergot with temporary benefit, but not with actual success. He then prescribed *gallic acid* (gr. xv) four times a day, with rapid and he believed permanent improvement.

PROF. A. TROUSSEAU, PARIS.

In some instances, Professor TROUSSEAU derived advantage from *valerian;* it should be administered in full doses, extracti valerianæ, gr. xv, thrice daily.

Dr. BOUCHARD considers that the action of valerian is to spare waste of tissue; and in support of this view, he mentions that certain Indians of Lower California and Mexico are accustomed to go through a course of it for a month, before they enter upon a severe expedition, so that they may be better able to bear fatigue. He gives it in frequent small doses, and gradually increases the amount taken, until he has, in some cases, reached a dose of 30 grammes in twenty-four hours. (*Medical Times and Gazette*, May 23d, 1874.)

DR. HENRY KENNEDY, LONDON.

This gentleman (*Practitioner*, February, 1878,) relates five cases all substantially cured by *dilute nitric acid*. He commences with f. 3 j to a quart of water, this amount to be taken in divided doses daily; and if necessary increases the acid to the daily amount of f. 3 vj. He has had no failures with it.

RÉSUMÉ OF REMEDIES.

Atropia has been tried, but though it diminishes the urine, the thirst continues. (Dr. RENDUER, France.)

Belladonna. Dr. JOHN M. SCUDDER, of Cincinnati (*Eclectic,*) claims that belladonna merits the name of a specific in this disease.

Creasotum has been employed with some advantage.

Ergota has been highly praised by Dr. DA COSTA (above.)

Gallicum Acidum, combined with opium, is spoken of by Dr. H. C. WOOD, Jr., as the most generally successful remedy in this disease.

Jaborandi. This drug was used in this disease by Professor T. LAYCOCK, of Edinburgh, in 1875. Its efficacy is doubtful.

Nitricum Acidum. Almost a specific (see above.)

Opium, with tannic or gallic acid, is valuable.

Valeriana was introduced by TROUSSEAU. Its effects are valuable. (P. 352.) The doses must be large and increasing to ʒj–ij of the powder thrice daily. Failures are attributed to its too timid use.

DIABETES MELLITUS.

PROF. A. BOUCHARDAT, PARIS.

The Dietetic Treatment. This is indispensable to success. Some writers are exceedingly stringent, but M. BOUCHARDAT has proved, by the comparison of the articles of food which a diabetic may take without prejudice, that it is quite possible to keep up a sufficient degree of variety in the character of the meals. The list of articles which it permits is about as follows: All sorts of meat, roasted, stewed, and even dressed with spices, but not with flour; fresh-water fish and marine fish, in eating which the want of bread is less felt than in eating meat; oysters, mussels, crabs, lobsters, etc.; eggs in all forms known to the culinary art; rich, good cream, but no milk; of vegetables, spinach, artichokes, asparagus, green beans, the different varieties of cabbage; of the salads, water-cresses, endives, lettuce; of fruits, strawberries and peaches. Although the loss of sugar is augmented by a very free supply of liquid, and decreased by a privation of it, yet it is not advisable to forbid the patient to quench his thirst.

J. M. DA COSTA, M. D., PHILADELPHIA.

680. ℞. Pulveris opii, gr. ss.
For one pill, thrice daily.

The *opium treatment*, Dr. DA COSTA has found to be productive of the most good in his hands. He cannot explain the *rationale*, but he does know that it has the most influence in lessening the thirst, the excretion of sugar and the general waste of flesh. The only objection to its use is the risk which is run of accustoming the patient to taking this powerful drug.

681. ℞. Ammoniæ carbonatis, ʒij–iv.
Aquæ cinnamomi, f.ʒ vj. M.
A tablespoonful three or four times a day. This, in addition to a moderately restricted diet, forms a very good treatment.

682. ℞. Tincturæ ferri chloridi, gtt. xx–lx.
For one dose, in water, thrice daily.

This will often do good when nothing else proves of service. The *pepsin* and *rennet treatments* amount to nothing. Dr. DA COSTA has tried them faithfully, and merely lost time.

Diet. Although substances containing a great deal of sugar, and still more those containing a great deal of starch—which is readily converted into sugar—are poisonous to diabetic patients, yet it is not advisable to put them on a strictly animal diet. Such a regimen is irksome in the extreme, and will not be followed out. After all, it is not the saccharine substances which go into the body that cause diabetes; they merely add to it. It is simply impossible to avoid giving food capable of being converted into sugar.

Bran bread is perfectly unobjectionable; but a small quantity of ordinary bread should be permitted. Cakes made from *almond-flour* are favorites with English physicians. Fruits should be interdicted, and potatoes sparingly used.

Bran-baths (two or three handfuls of bran in the bath) are very serviceable in relieving the dryness of the skin, which is so troublesome.

683. ℞. Infusi cascarillæ, Oj.
A wineglassful three or four times a day.

The use of this light bitter lessens the thirst. Of course, water must be allowed beside; but the infusion will take the place of a good deal of water.

PROF. S. D. GROSS, M. D., PHILADELPHIA.

A very successful treatment suggested by this eminent surgeon is recorded in the *Medical and Surgical Reporter*, August 5th, 1871, and

March 16th, 1872. The drugs used are opium, tannic acid, and ergot internally, and the application of ointment of veratria to the spine. The following prescriptions may serve as illustrations of the manner in which they may be used:

684. ℞. Acidi tannici, gr. v.
Opii pulveris, gr. ss. M.
To be taken three times a day, between meals, and tincturæ ergotæ, f.℥j, in water, before each meal.

685. ℞. Veratriæ, ℈j.
Unguenti cetacei, ℥j. M.
For an ointment. A piece the size of a cherry, to be well rubbed along the spine morning and evening.

The patient should be directed to abstain as much as possible from animal food, to confine himself to a simple vegetable diet, and to procure lager beer or ale to drink instead of water. If either of these becomes nauseous, he can use weak tea or whiskey and water.

The tannic acid should be increased gradually until twenty or thirty grains, three or four times a day, are administered. The quantity of opium and ergot need not, however, be increased in like proportion. The combination may be:

686. ℞. Acidi tannici, ℈j.
Opii pulveris, gr. j.
Tincturæ ergotæ, f.℥iij. M.
This quantity three or four times a day.

Under the judicious use of this treatment, even severe cases of this very grave disease have recovered in three or four months, and have remained free from relapses.

DR. J. HOAG, INDIANA.

This writer claims, in the *Journal of Materia Medica*, September, 1874, to have achieved uniform success with the following treatment: The patient is forbidden all fruits and vegetables save bread of unbolted wheat flour, and this in the most limited quantities. Tea, coffee, liquors, and all drinks except pure water and milk diluted with lime-water, at meals, are also forbidden. The diet should be fresh meats, cream, cheese, butter, soft eggs, fish, oysters and small quantities of bran bread. The entire body is sponged daily with an alkaline bath, and the following ordered:

687. ℞. Antimonii sulphureti, ℈j.
Pulveris ipecacuanhæ et opii, ℈ij.
Ammoniiæ carbonatis, ʒj.
Pulveris opii, gr. x. M.

Make twenty powders. One to be taken morning and night.

Also:

688. ℞. Tincturæ cinchonæ, f.ʒj.
Tincturæ ferri chloridi, f.ʒiv.
Tincturæ digitalis, f.ʒj.
Spiritûs lavandulæ compositi, f.ʒj. M.

A teaspoonful daily, at noon.

DR. ORSON MILLARD, MICHIGAN.

689. ℞. Tincturæ ferri chloridi, f.ʒij.
Olei morrhuæ, f.ʒiv.
Acidi carbolici, f.ʒiss. M.

A teaspoonful before each meal. Said by this writer (*Michigan University Medical Journal*, January, 1872,) to bring about the disappearance of the sugar promptly in uncomplicated cases.

THE MILK DIET TREATMENT.

This is either absolute or modified. Dr. A. S. Donkin, of Dublin, (*Dublin Journal of Medical Science*, November, 1875,) prefers the former as the only one of real value. He u-es *skim-milk*, and his rule is that the skim-milk *regimen must be exclusive;* that the quantity of skim-milk—*properly prepared by the careful removal of the cream*—beginning with four, five, or six pints on the first day, must be increased more or less gradually, according to circumstances, to eight, nine, ten, eleven, or twelve pints in the twenty-four hours, according to the age, sex, size, and condition of the patient. No rule as to quantity can be laid down to suit individual cases; it must be regulated to suit the requirements of each, *but in no instance should it exceed twelve pints.* Not more than seven or eight pints should be taken in the natural fluid condition. When a larger quantity is necessary, the surplus should be made into curd by the essence of rennet, and taken at separate meals. The skim-milk may be taken cold, or warmed to a temperature of 100° or so, but it must not be boiled, because a temperature of 212° alters the physical properties of caseine, and greatly impairs its therapeutic properties. The specific gravity of the skim-milk used should never be below 1035; that of the best quality is 1040. The daily allowance must be divided into regular meals. The constipation which this diet generally produces must be carefully remedied by the

frequent administration of castor oil, or of some mild saline aperient. The author does not parade this method of treatment as a panacea; his experience of it has led him to the conclusion that if there is no progressive reduction of the specific gravity of the urine and of the sugar it contains after the expiration of a week (all rules having been observed,) it may as well be discontinued.

On the other hand, Dr. GEORGE W. BALFOUR gives pure milk. From two to three months is the period usually stated as sufficient to cause the complete disappearance of sugar from the urine; and then the diet may, if desired, be rendered more solid by the detraction of some of the milk, and the addition of butcher's meat and green vegetables. It is doubtful, however, whether diabetic patients, even though apparently cured, can ever return to ordinary diet. Present experience of such cases is too limited to afford any data at all in regard to this. When the milk diet is employed in the cure of other forms of ill-health, it is often conjoined, after the first few days, with a small amount of solid food; and what such patients relish most is plain bread with salt, or a salt herring, the mawkish sweet taste of milk inclining them this way. In diabetes, the thirst present usually makes it better to give the patient his full allowance of milk, and let him divide it over the day as he pleases.

RÉSUMÉ OF REMEDIES.

Alkalies and Alkaline Waters have, according to Professor SEEGEN, proved themselves the best remedies in diabetes. The natural waters, such as Carlsbad, in Europe; in the United States, Bedford Springs, Perry Springs, Congress Springs, Bethesda or Waukesha, etc.

Ammonii Carbonas is regarded by Dr. BARLOW, (*Guy's Hospital Reports*, vol. X,) in doses of gr. v–viij, with a few drops of tincture of opium, in a light, bitter infusion, every six hours, as a most efficient remedy. Animal food, together with cruciferous vegetables, as greens, brocoli, turnip tops, etc., should, at the same time, be freely taken.

Ammonii Citras, conjoined with the use of Dover's powder or ipecacuanha, is considered by Dr. W. PROUT as one of the best of diaphoretics in diabetes.

Ammonii Phosphas is recommeded by Dr. BASHAM (*British Medical Journal*, April 10th, 1869,) combined as follows:

690. ℞. Ammonii phosphatis,
Ammonii carbonatis, āā gr. x.
Spiritûs ammoniæ aromatici, ℥xxx.
Aquæ, f.℥j. M.

Add this to the juice of a fresh lemon, and order to be taken thrice daily. Its use must be persevered in.

Arsenicum renders good service when the patient is thin, and assimilation defective; but in fat subjects it should not be exhibited. (BARTHOLOW.)

Belladonna, in full doses, in connection with sulphur baths, has been recommended by Prof. GUENEAU DE MUSSY.

Calcii Sulphidum has been recommended in diabetes by Dr. RINGER, gr. $\frac{1}{8}$ thrice daily. It has also been very favorably reported on by other physicians, and deserves a careful trial.

Carbolicum Acidum has been used successfully in Germany.

691. ℞. Acidi carbolici, gr. xv.
Aquæ menthæ piper., f.℥ x. M.
One-third of this quantity in divided doses, each day, increased gradually to one-half the quantity daily.

Codeia is preferred by Dr. F. W. PAVY (*Guy's Hospital Reports*, 1870,) to opium and morphia, as being equally effectual in controlling the disease without exerting the same narcotic effect. The proper commencing dose is gr. $\frac{1}{2}$, thrice daily, which may be gradually increased to gr. ij–iij.

Creasote has been recommended by Sir T. WATSON and Dr. T. H. TANNER. It will, in some instances, remove the extreme thirst, especially when the quantity of sugar is small.

Cuprum. Finely pulverized copper, gr. $\frac{1}{6}$–$\frac{1}{3}$, twice daily, with meals, has been found by Dr. GRAZZINI to diminish the saccharine excretion. (*London Medical Record*, December, 1878.)

Ferrum. Preparations of iron are nearly always useful:

692. ℞. Tincturæ ferri chloridi, f.℥ vj.
Acidi nitro-muriatici, gtt. lxxx. M.
Twenty drops three times a day.

Glycerinæ has been administered in Germany.

693. ℞. Glycerinæ puræ, f.℥ vj–viij.
Acidi citrici, ℥ iss.
Aquæ, Oij. M.
To be drunk at intervals through the day.

Hydrogen Peroxide has been tried successfully by Dr. JOHN DAY. (*Lancet*, January, 1868.)

694. ℞. Tinct. hydrogen. perox. ether., f.℥ ss.
Aquæ, f.℥ j. M.
This amount three times a day.

Jaborandi has, of late, been employed with success, in some cases of this disease.

Nux Vomica, gr. j, increased to gr. iv of the extract, has been found successful by Dr. E. ZARZANA. (*Gaz. Med. di Roma*, December, 1878.)

Opium and its preparations are well borne, and very valuable in diabetes. From gr. vj–xij, daily, are required to produce a decided impression. Yet it cannot be said to be curative. Of the various alkaloids, Dr. F. W. PAVY (*Guy's Hospital Reports*, vol. XV,) finds that opium, morphia, and codeine, all possess the power of checking the elimination of sugar in the urine. Of the

three, he considers codeine to be the best. Dr. PAVY begins with ½ a grain of the last, and gives it, by gradually increasing doses, to the extent of 10 grains three times a day. He says it is superior to all other medical agents in its controlling influence over the disease, none other giving the same immediate and striking effects. It should be given in full doses, and persevered in, diabetic patients being very tolerant of its use. It produces its best effects in old cases occurring in the aged.

Phosphoric Acid, largely diluted, lessens the inordinate thirst more effectually than any other acidulated drink.

Potassii Bromidum. Dr. AUSTIN FLINT (*American Practitioner*, January, 1870,) relates three cases treated by bromide of potassium, in doses of 15 to 20 grains, three times a day, combined with ordinary diabetic diet. In each, there was a rapid diminution of thirst, a decrease in the specific gravity of the urine, and an improvement in the general health.

Quiniæ et Morphiæ Bromidum. This combination has been used in diabetic phthisis, by Dr. BENJAMIN W. RICHARDSON, of London. He states that, under its influence, the quantity of sugar and of urine notably decreases, the cough is lessened, the appetite and digestion are improved, and the recurrent hectic is held in abeyance more certainly than by any other remedy with which he is conversant.

Quiniæ Sulphas will diminish the sugar in most instances.

Rheum is praised by Dr. COPLAND, not only as a useful aperient in diabetes, but as a promoter of the digestive and assimilative processes.

Sodii Citras. Recent journals have called attention to a recommendation by M. GUYOT DARMECY, of citrate of soda in the treatment of diabetes, given in daily doses of ½ drachm to 1 drachm. Analysis has shown that sugar disappears from the urine when this salt is used with the food instead of common salt.

Sodii Phosphas is regarded by Dr. W. PROUT as one of the few saline purgatives admissible in this disease.

Sodii Salicylas. Dr. MULLER WARNER, in the Berlin *Klinische Wochenschrift*, January, 1877, gives the following conclusions: 1. Salicylate of soda can completely remove the symptoms of diabetes mellitus, yet its action does not appear to be lasting in many cases. 2. The symptoms of diabetes are made to disappear the quicker by salicylate of soda, the greater the dose in which it is used and the longer it is borne by the patient. 3. The first action of medium daily doses (ʒ ij–ʒ ijss), on diabetes, appears gradually to abate, while large doses (ʒ iv in a day) act on patients progressively. 4. Salicylate of soda can be borne in chronic diabetes mellitus, in large daily doses, for a long time, without special disturbance of the general condition.

Bethesda Water. *The Bethesda* water, from Waukesha, Wis., has a wide and well-deserved reputation in this disease. Its use should not be neglected.

DROPSY.

FREDERICK T. ROBERTS, M. D., M. R. C. P., LONDON.

This esteemed authority remarks that far too little heed is usually given to the question of *rest* and *position*, in the treatment of dropsy. The part affected should be maintained in an elevated posture, the legs, for instance, if anasarcous, placed higher than the body. *Pressure* should be applied by bandages or adhesive strips, and is a very valuable adjunct. All external dropsical parts should be kept clean and dry. A decided diminution of drinks and liquid articles of food, is adapted to dropsical accumulations in serous cavities. The only *diaphoretic* he considers of much practical value, is some form of bath which promotes perspiration, such as the warm, vapor, hot-air, or Turkish bath. They are most valuable in renal dropsy. The best *purgatives* are extract of elaterium, (gr. $\frac{1}{6}$, gradually increased to gr. ss,) jalap, (℈j to ʒj), and cream of tartar (ʒj to ʒij.) For a diuretic, the following:

695. ℞. Extracti elaterii, gr. v.
Pulveris scillæ,
Pulveris digitalis, āā gr. xx.
Extracti hyoscyami, gr. xxx.

To make twenty pills. One to be given every other night.

PROF. NATHAN S. DAVIS, M. D., CHICAGO.

It is well ascertained that, in a pathological sense, dropsy is not a disease, but a symptom directly dependent either on inflammation, mechanical obstruction of blood vessels, or altered composition of the blood. Its rational treatment must, therefore, be guided by an appreciation of these causative changes. Where, as in many cases, we are called upon to strengthen a weak heart and produce efficient action of the kidneys, we can accomplish this by combining digitalis and scutellaria, as:

696. ℞. Fxtracti fluidi scutellariæ, f.ʒ ijss.
Tincturæ digitalis, f.ʒ j.
Tincturæ hyoscyami f.ʒ ss.
Potassii nitratis, ʒ iij. M.

A teaspoonful three hours.

Where there is dyspnœa from effused fluid, a blister to the chest aids in relieving this symptom. When diuretic remedies do not act efficiently in such cases, the system will respond to their action promptly by the use of a proper nerve tonic, as:

697. ℞. Strychniæ sulphatis, gr. $\frac{1}{16}$.
Ferri citratis, gr. iij. M.
For one pill. One three times a day.

DR. WALSHE.

This author believes that the abstraction of a small quantity of blood, either by venesection or by cupping of the chest, facilitates the action of hydragogue remedies when a clogged condition of the heart's cavities co-exists with pulmonary congestion and anasarca of more or less acute course, and the general vigor is as yet unimpaired to any serious degree. Of hydragogue purgatives, elaterium, gamboge, bitartrate of potass., and the pulvis jalapæ comp., are the most valuable of the class. The following is a useful formula:

698. ℞. Extracti elaterii, gr. $\frac{1}{6}$–$\frac{1}{2}$.
Creasoti, gtt. j.
Extracti hyoscyami, gr. ij. M.
For one pill. To be repeated as required.

Diuretics, uncertain in their effects, are often rendered much more active by preliminary cupping or dry-cupping of the renal regions. Of the numerous diuretic agents, the *infusion of digitalis* has appeared to Dr. WALSHE the most active, and no amount of apparent weakness of the heart is, *per se*, an absolute contra-indication to its use. Hydragogue purgatives often prevent the action of more direct diuretics; and small doses of blue pill occasionally, at bedtime, are very useful adjuvants.

Diaphoretic drugs are of very little utility, but the free diaphoresis produced by the vapor or hot-air bath is sometimes strikingly beneficial. If there be any tendency to bronchitis, bronchial discharge should be encouraged by the free use of expectorants. Removal of anasarcous fluid by mechanical means becomes necessary, if medicines fail in controlling its increase; and if inflammatory changes in the skin appear imminent, scarification is dangerous, being not unoften followed by erysipelas, while *acupuncture* over the insteps, or at the upper and inner parts of the thighs, is not attended with the same danger.

C. MURCHISON, M. D., F. R. S., ETC., LONDON.

699. ℞. Pulveris scillæ, gr. iss.
Pulveris digitalis, gr. ss.
Pilulæ hydrargyri, gr. ij. M.
For one pill, two or three times a day.

This is a pill which has enjoyed a long and merited reputation for treatment of dropsy, in the Middlesex Hospital.

Diuresis will also sometimes be induced by fomenting the abdomen with an infusion of digitalis of about four times the usual strength.

700. ℞. Potassii acetatis, gr. xx.
Spiritûs ætheris nitrosi, f. ℥ ss.
Decocti scoparii, f. ℥ iss. M.
To be given with each dose of the above pills.

At the same time, an ointment composed of equal parts of blue ointment and ointment of belladonna is to be applied over the abdomen. This treatment is a successful one in cases of ascites due to cirrhosis.

ROBERT J. GRAVES, M. D., DUBLIN.

701. ℞. Potassii nitratis,
Potassii carbonatis, āā ℥ j.
Tincturæ scillæ,
Tincturæ digitalis, āā gr. xxx.
Mellis despumati, f. ℥ ij. M.
For an electuary. To be taken in teaspoonful doses, in the course of three or four days, in order to increase the activity of the kidneys, in various forms of dropsy.

702. ℞. Oxymellis scillæ, f. ℥ iss.
Potassii bitartratis, ℥ iij. M.
Dose, a tablespoonful, as a diuretic, in various forms of dropsy.

DR. GUIBERT, PARIS.

703. ℞. Tincturæ scillæ,
Tincturæ digitalis,
Tincturæ colchici, āā f. ℥ iij.
Linimenti camphoræ, f. ℥ vj.
Aquæ ammoniæ, f. ℥ iss. M.
To be rubbed well into the abdomen and thighs in dropsy.

DR. PORCHER, PARIS.

704. ℞. Sodii sulphatis,
Potassii bitartratis, āā ℥ j.
Spiritûs ætheris nitrosi, f. ℥ ijss
Syrupi, f. ℥ j.
Aquæ, f. ℥ vss.
A tablespoonful twice daily, in dropsy accompanied with an active, full circulation. It procures an abundant alvine evacuation, and often, at the same time, a copious secretion of urine.

705. ℞. Tincturæ cantharidis, f.℥ iss.
Spiritûs ætheris nitrosi, f.℥ vj.
Syrupi aurantii corticis, f.℥ j.
Aquæ fœniculi, f.℥ viij. M.

A tablespoonful two or three times a day, in different forms of dropsy.

PROF. A. GUBLER, FACULTÉ DE MÉDECINE DE PARIS.

706. ℞. Tincturæ digitalis,
Extracti ergotæ fluidi, āā f.℥ ss
Acidi gallici, ℈ j.
Potassii bromidi, ℥ ij.
Aquæ lauro-cerasi, f.℥ ij.
Syrupi, f.℥ iij.
Oxymellis scillæ, f.℥ iv. M.

A tablespoonful in water, or a diuretic infusion, two or three times a day, in various forms of dropsy.

707. ℞. Scillæ pulveris,
Digitalis pulveris,
Scammonii, āā ℈ iv.
Syrupi, q. s. M.

Divide into one hundred pills. From one to five a day, in various forms of dropsy.

ST. MARY'S HOSPITAL, LONDON.

708. ℞. Elaterii, gr. iss.
Extracti hyoscyami,
Extracti gentianæ, āā gr. ix. M.

Divide into ten pills. From one to three as a drastic purgative in certain forms of dropsy.

HENRY WILLIAM FULLER, M. D., LONDON.

709. ℞. Scillæ pulveris,
Digitalis pulveris, āā ℈ j.
Potassii nitratis, ℥ v. M.

Divide into fifteen powders. One or two a day, in various forms of dropsy.

710. ℞. Potassii sulphatis,
Potassii bitartratis,
Potassii nitratis, āā ℥ iss.
Digitalis pulveris, gr. xv. M.

Divide into twenty powders. From one to three a day, in œdema of the lower limbs. Repeated purgatives.

DR. W. R. BASHAM, LONDON.

711. ℞. Liquoris ammoniæ acetatis, f.℥ j.
Acidi acetici diluti, f.℥ ijss.
Tincturæ ferri chloridi, f.℥ ij.
Aquæ, f.℥ viij. M.

Mix the acetate of ammonia and acetic acid first; then add the iron. The resultant should be of a bright sherry-red color. Dose, two tablespoonfuls three or four times daily. This is the original "Basham's mixture," which has stood the test of the fullest experience.

DIURETICS AND CATHARTICS.

Diuretics are of much service in dropsical affections. In *passive dropsies* they may be combined with tonics and mild stimulants. Their operation is greatly aided by previous depletion, if the patient be not much debilitated. Dr. J. HOPE finds diuretics of the highest service in *dropsy connected with disease of the heart*, especially when accompanied by a scanty secretion of high-colored urine. He recommends particularly in these cases, digitalis, squills and acid tartrate of potash. The dyspnœa, palpitation and cough decrease as the quantity of the urine increases. In *inflammatory dropsy attendant on granular disease of the kidneys*, the use of diuretics, particularly those of a stimulating character, is generally condemned. The administration of diuretics by the *endermic method* is sometimes effectual in removing dropsies. The diuretics usually employed in the treatment of dropsies are digitalis and digitalin, sweet spirits of nitre, juniper, acetate of potash, nitrate of potash, cream of tartar, squills, broom tops. The following formulæ have been recommended:

712. ℞. Digitalin, gr. ¾.
Pulveris scillæ,
Pulveris scammon., āā gr. lxxv.
Mucilaginis, q. s. M.
Make one hundred pills. Of these two, then four, and lastly six, are to be given daily, according to the effect produced.

713. ℞. Potassii nitratis, ℥ iij.
Baccar. juniper., ℥ xv.
Vini albi, Oiss.
Dose. f. ℥ iij daily.

714. ℞. Potassii bitartratis,
Juniper baccar. contus., āā ℥ ss.
Aquæ ferv., Oi. M.

This infusion is considered by Prof. STILLÉ to have few superiors in the idiopathic forms of general dropsy.

715. ℞. Scoparii (seeds), ℥ ij.
Alcoholis, f. ℥ viij. M.
Macerate for ten days. Dose, f. ℥ j–ij thrice daily.

If it cause diarrhœa, 5 or 6 drops of laudanum may be added; if the patient is much debilitated, iron or quinine may be added. This formula is of service in all forms of dropsy excepting ovarian.

Cathartics, particularly elaterium, gamboge, and cream of tartar, are of great service in dropsical affections, but they are to be used with

great caution when the patient is nearly debilitated, and, as a rule, to be avoided in dropsy connected with heart disease. Dr. CHRISTISON recommends gamboge, in doses of gr. v–vij, every other day, finely powdered and combined with cream of tartar, as a certain and easily-managed cathartic in reducing dropsy. *Colocynth* may be employed in dropsical affections connected with disease of the liver, but is inferior to elaterium. *Croton oil* is sometimes useful when given with great caution, in small and only gradually-increased doses, but is inadmissible if the patient is old or debilitated. *Elaterium* is a very efficient cathartic in dropsy, anasarca, and œdema, arising in connection with disease of the heart. Dr. J. HOPE gives it in the form of a pill, in the doses of gr. $\frac{1}{8}$–$\frac{1}{4}$, combined with capsicum, to prevent griping, and with a grain of calomel, to prevent its emetic effects. One of these pills should produce six or eight watery evacuations, and may be repeated two or three mornings in succession, or every second or third morning, according to the patient's strength. The dose of elaterium may be carried, with caution, to 2 grains. The effects of this remedy, according to Dr. HOPE, are sometimes truly astonishing, removing an extreme universal anasarca in three or four days; but, as it is apt to be violent in its operation, it should be given to strong subjects only. The following formulæ are also valuable:

716. ℞. Elaterii, gr. ij.
Extracti gentiani, gr. xx. M.

Divide into four pills; order one every hour, till it causes free evacuations. Repeat every two or three days, for a fortnight, and then suspend for a short time.

717. ℞. Elaterii, gr. j.
Extracti colocynthidis compositi, gr. xl.
Extracti hyoscyami, gr. xij. M.

Divide into twelve pills. Take one every night.

718. ℞. Pulveris jalapæ compositi, gr. xx–xxx.
Potassii bitartratis, gr. v–x–xv.
Olei carui, gtt. ij.
Aquæ, f.℥ iss.

For one dose; to be repeated, so as to keep up an unremitting discharge from the bowels.

This formula is recommended by Dr. CHAPMAN.

RÉSUMÉ OF REMEDIES.

Ammoniæ Murias and *Benzoas* are useful in dropsy dependent upon hepatic disease, and also in ovarian dropsy. Dr. COPLAND recommends these combinations with warm, diuretic effusions.

**Asclepias Syriaca.* This plant, *vulgò* milk-weed, has a specific power in dispelling dropsical effusions. It was first brought forward by Dr. JEWETT, in an article in the *New York Medical Society's Transactions* for 1869, and later, Dr. HUTCHINS reported to the Kings County Society, very remarkable results from its use. For instance, in forty-eight hours, a man described as frightfully distended, was reduced to a skeleton, and any disposition to re-accumulation of water was rapidly relieved by an infusion of this drug. If not carefully given, it may produce vomiting or diarrhœa, both of which are to be avoided. Dr. JEWETT's mode is to put ½ ounce in a pint of gin, add an infusion of 2 ounces of juniper berries in a pint of water, and give from 1 to 4 teaspoonfuls, as the stomach will tolerate it, every four hours, until the effect is obtained. He expresses unbounded confidence in it, after an experience of thirty years, but he warns us that, although the *root* is officinal in the United States Dispensatory, it is only the *bark of the root* which is active. A fluid extract is prepared, the dose of which is 10 drops. It has been erroneously referred to, in various articles, as *Apocynum Cannabinum.*

Armoraciæ Radix. Horse-radish was much employed as a diuretic, by SYDENHAM and the older physicians, in dropsical affections.

Blatta Orientalis. A derivative obtained from the cockroach, has been introduced from Russia. In doses of gr. ij–iv, its diuretic action is well marked, and it has secured the testimony of a number of observers.

Caffein. The citrate of caffein, gr. iv–viij has been used by Prof. GUBLER with good results, in cardiac dropsies.

Cannabis Indica has been used (m̃xx of the tincture every four hours) as a diuretic in dropsy.

Chenopodium Anthelminticum. Dr. SAMUEL R. BURROUGHS, of Houston, Texas, in a report on the "Indigenous Medical Resources of Texas," in the *Transactions of the Texas State Medical Association*, 1877, makes the following note: "The chenopodium anthelminticum root, split or cut to pieces, and put into an ordinary bottle filled with vinegar, to which has been added 2 or 3 drachms of carbonate of iron, will relieve anasarca when a sequel to scarlatina, or when dependent on any functional derangement."

Copaiba. Dr. S. WILKS (*Lancet*, March 21st, 1873,) speaks with the greatest confidence of the resin of copaiba as a diuretic. It is particularly useful in cases of dropsy from cardiac or hepatic disease. Fifteen or twenty grains in mucilage and flavored water should be given, three or four times a day.

**Digitalis* is much employed in dropsical affections, alone or combined with squills, mercury, carbonate of ammonia or tincture of the chloride of iron. Sir H. HOLLAND recommends a combination of digitalis and tincture of the chloride of iron in the dropsy following scarlet fever. The same combination is useful in many other forms of dropsy attended with anæmia. Diuresis is sometimes induced by the external application of digitalis to the abdomen, either by fomentation with an infusion of about four times the usual strength, or by frictions with an embrocation of equal parts of tincture of digitalis and soap liniment, or by poulticing with a warm linseed poultice, to which a fluid ounce of the tincture has been added.

Ferri et Potassii Tartras has been found useful as a tonic and diuretic in cases of anasarca connected with disturbed action of the heart, in which it would be dangerous to give any stimulating tonic.

Phosphoricum Acidum Dilutum, diluted with oil and acid, as an embrocation over the abdomen, has been employed with benefit in some cases of dropsy.

Rheum, in small doses, or in infusion as a vehicle for the saline diuretics, squills, juniper or colchicum, is regarded by Dr. COPLAND as a useful medicine in dropsies.

Sinapis is sometimes beneficial, because of its diuretic and stimulant qualities. It is best given in the form of whey, made as follows:

719. ℞. Bruised mustard seeds, ℥ ss.
Boil in Oj of milk and strain. The whole to be taken daily in divided doses.

Terebinthinæ Oleum, in doses sufficient to act freely on the bowels and kidneys, is occasionally useful in ascites, unconnected with renal disease or with great gastric irritability or inflammatory action.

Urtica Dioica. An infusion of the root of the stinging nettle is considered by Dr. MARIS, of Philadelphia, the very best diuretic he is acquainted with.

EXTERNAL MEASURES.

Acupuncture is the introduction of needles into the body to relieve or cure disease, and is often needful in dropsical affections. It is performed by running five or six fine steel needles, two or three inches long, right into the dropsical part. The needles are furnished at the blunt end with a knob of sealing-wax or ivory. They should be introduced by a slight pressure combined with a semi-rotary motion between the thumb and forefinger, and withdrawn with the same motion. Ordinarily, no fluid escapes on the withdrawal of the needles, but occasionally a drop of blood follows. Gentle pressure will suffice to restrain any hemorrhage, which exceptionally may occur. The pain is quite trifling and often scarcely noticed. The needles may be introduced into muscular, aponeurotic and tendinous parts, but not into serous cavities. They should be inserted to the depth of one-fourth of an inch to two or three inches, according to the thickness of the muscles.

In regard to the period of sojourn of the needles in the part, Dr. ELLIOTSON remarks that one needle allowed to remain an hour or more is often more efficacious than several speedily withdrawn. The pain sometimes ceases instantly. The operation may require repetition several times; usually, however, twice is sufficient.

Abdominal Compression. When there is any tendency to absorption in ascites, it will be greatly accelerated by tightly bandaging the abdomen with a flannel bandage.

FUNCTIONAL URINARY DISORDERS.

INCONTINENCE OF URINE.

This affection is most frequent in children, although adults are not free from it. One of the most popular remedies is *belladonna*, or its alkaloid, *atropia*, administered in sufficient doses to exert the physiological effect of the drug.

PROF. S. D. GROSS, PHILADELPHIA.

In the nocturnal incontinence of children, there should be a bland and unirritant diet, late suppers should be avoided, no drink taken after supper, and the bladder emptied on retiring. The position in bed should be upon the side or belly, to prevent the urine from irritating the neck of the bladder. The internal remedies of most use are as follows:

720. ℞. Strychniæ, gr. j.
Pulveris cantharidis, gr. ij.
Morphiæ sulphatis, gr. iss.
Ferri pulvers, ℈j. M.
Make forty pills. Give one three times a day to a child ten years old.

The cold shower-bath once or twice a day is a valuable auxiliary.

DR. BRÜGELMANN, COLOGNE.

Our author relates (*Berliner Klinische Wochenschrift*, February 10th, 1873,) a case of well-marked incontinence of urine in a girl aged thirteen, very nervous, and distinctly anæmic, where the administration of syrup of *iodide of iron* afforded marked relief in eight days. After persevering with it for another fortnight, she was completely cured.

DR. ROBERT FARQUHARSON, LONDON.

This writer, in a study of the action of drugs on incontinence, (*Practitioner*, July, 1879,) divides cases of incontinence into three classes.

In the first class, debility and anæmia are the exciting causes. The patients are pale and weak. In such, small doses of *iron* will act better than anything else, and will effect a cure in the lighter cases.

The second class include those in which the debility is generally

congenital and dependent on an excessive irritability of the bladder. The drugs most potent in these cases are *ergot* and *belladonna*. Of these, Dr. F. prefers the latter. It must, however, be vigorously pushed, up to the full development of its physiological effects, which, when this drug is given to young persons, need never excite any apprehension. He has given the tincture in doses of f. 3 ij, to a boy of nine, f. 3 ijss, to a girl of thirteen, etc.

The third class may be called a sort of choreic condition of the bladder, sometimes associated with skin diseases, often more or less intermittent. In such, sulphate of zinc, arsenic, strychnia and iron may be used, singly or in combination, with possible good results, but on the whole the treatment is far from satisfactory. Galvanism and blisters to the spine occasionally are efficacious. The dietetic plan, recommended by some, of withholding all meat, is rejected as useless by our author. Santonin, praised by RINGER, he has tried without effect.

In children who sleep heavily, Professor FONNSAGRIVES has occasionally observed that a cup of strong coffee in the evening prevented them from wetting the bed; he believes that this, and also belladonna, act simply by causing them to sleep less profoundly, and then they do not lose control of the sphincter muscles of the bladder.

DYSURIA.

PROF. J. B. FONNSAGRIVES, PARIS.

The forms of dysuria of functional origin are derived from neuralgia, paralysis or torpor of the muscles of the bladder and its neck. Hysterical subjects are quite liable to them. In nervous affections of the neck, the plan adopted by CIVIALE is the best; this includes catheterism of the urethra, vesical injections at first of warm water, then of cold, douches on the hypogastrium of warm and cold water, followed by revulsives to the same spot, and light purges.

Where the dysuria is owing to nervous atony or partial paralysis, Prof. F. believes the best results are to be had from *electricity* and *strychnia*. The former may be employed in either of the three methods recommended by DUCHENNE, (described in most works on medical electricity.) When these means fail, he would resort to injections of very weak solutions of *tincture of cantharides*, gtt. j–iij, in half a tumbler of warm water, a method successfully employed by LISFRANC.

HÆMATURIA.

SAMUEL FENWICK, M. D., LONDON.

Hæmaturia occasionally appears without obvious cause, or follows a slight chill or other exposure. When the urine is decidely tinged, an ice-bag may be applied to the loins. The patient must be kept at rest, and if severe he is better in bed. Sound port wine is one of the most useful astringents. Ergotin may be injected subcutaneously. The acetate of lead is of but slight efficacy in these cases. Internally, gallic acid may be prescribed, or one of the following combinations:

721. ℞. Extracti ergotæ fluidæ, ♏xiv.
Acidi gallici, gr. x.
Aquæ cassiæ, f.℥j. M.
For one dose.

722. ℞. Aluminis, ℥iss.
Syrupi simplicis, ℥vj.
Infusum rosæ acidi, ad ℥viij. M.
One to two tablespoonfuls as required.

The discharge of bloody urine is a symptom of so many diseases as well as local injuries, that it can only be referred to here in general terms. Internally, one of the most efficient remedies is *ergot*.

DR. CHARLES HORION, PARIS.

723. ℞. Ergotæ pulveris, gr. xv.
Acidi tannici, gr. iij.
Digitalini, gr. ½. M.
Divide into ten pills. Give five a day, in hæmaturia. Prolonged cold injections into the bladder, cold compresses to the perineum and pubis.

DR. W. LANGE, ERLANGEN.

724. ℞. Extracti ergotæ fluidi, ♏xxv.
Acidi tannici, gr. xxx.
Aquæ destillatæ, f.℥vj.
Syrupi, f.℥j. M.
The whole to be given in tablespoonful doses, in the course of the twenty-four hours, in hæmaturia. Cold compresses to the hypogastrium, ice by the mouth, cold enemata.

PROF. S. D. GROSS, M. D., D. C. L., PHILA.

725. ℞. Olei terebinthinæ,
Acidi sulphurici diluti, āā f.℥j.
Acidi gallici, gr. xxx.
Mucilaginis acaciæ, f.℥ss.
Aquæ, f.℥j. M.
A dessertspoonful every three hours.

In all cases, ice to the hypogastrium and in the rectum or vagina is serviceable; rest in the recumbent posture, the pelvis elevated, and the room cool, are important accessories.

Dr. W. ATLEE gave the fluid extract of ergot in doses f. ʒ ss–j, and continued it daily at bedtime for a considerable period.

RÉSUMÉ OF REMEDIES.

Alumen injected into the bladder, in a solution of the strength of gr. xx to aquæ Oj, sometimes arrests the discharge in hæmaturia, after the failure of ordinary remedies. As an internal remedy in hæmaturia, alum is less effectual than gallic acid.

Argenti Nitras, in very weak solution, injected into the bladder, in hæmaturia arising in connection with vesical tumor, is recommended by Sir H. THOMPSON.

Ferri Chloridi Tinctura, in doses of ♏x–xx, several times a day, is a valuable remedy in hemorrhage from the bladder.

**Gallicum Acidum*, alone or combined with sulphuric acid, opium or digitalis, is an excellent astringent in hæmaturia. Dr. W. Brinton recommends the following formula:

726. ℞. Acidi gallici, gr. x.
Acidi sulphurici diluti, ♏x.
Aquæ, f. ʒ j. M.
For one dose.

Guaiaci Tinctura, ʒj, twice daily, has been used with success by Dr. JOHN N. UPSHUR, of Va. (*Half-Yearly Compend.*, July, 1879,)

**Ipecacuanha* is a valuable remedy in hæmaturia. It should be given in the manner recommended for hæmoptysis.

Krameria, in scruple doses of the extract, is highly commended by Sir T. WATSON, after all ordinary remedies have failed.

**Matico*, in infusion, doses ʒ ij, every two or three hours, is regarded by Sir H. THOMPSON as equal to gallic acid or lead in hæmaturia.

**Plumbi Acetas*, in doses of gr. ij–iv, combined with gr. ss–j of opium, is a well-known and effectual remedy.

Tannicum Acidum, in the form of a pill, is an effectual astringent in hemorrhage from the bladder.

Terebinthinæ Oleum is employed with benefit where there is debility, relaxation and anæmia. Prof. BARTHOLOW commends the following formula:

727. ℞. Olei terebinthinæ, f. ʒ iij.
Extracti digitalis fluidi, f. ʒ j.
Mucilaginis acaciæ, f. ʒ ss.
Aquæ menthæ piperitæ, f. ʒ j. M.
A teaspoonful every three hours.

NEPHRALGIA, (RENAL COLIC.)

Nephralgia, as a symptom, may be regarded as expressive of a gravelly or lithic acid diathesis; it arises from the irritation of gravelly particles of lithic acid, (amorphous,) or of crystalline grains of lithic acid or lithates, detained in the renal tubes, and, till washed out by the urinary stream, giving rise to a distinctive group of symptoms.

Bearing this pathological fact in mind, the remedial agency of *diluents*, of alkaline *citrates* and *tartrates*, or any agent which, while it dilutes the urine and increases its quantity, also renders the uric acid more readily excreted, will readily be admitted. Nephralgia, arising from the above causes, is recognized without much difficulty, and its temporary relief easily and promptly obtained. The potash salts, as effervescing citrates, mild mercurial alteratives and saline purgatives, especially the Carlsbad or Friederichshall waters, speedily effect the desired relief.

As nephralgia is symptomatic of a gravelly irritation of the urinary passages, so, if the gravelly condition continues unrelieved, nephralgia becomes the sign of a calculous disease of the kidney. The general treatment of *Lithiasis* is a question which is considered under "Surgical Therapeutics."

The immediate treatment of nephralgia must be by *opium* in large doses, preferably either by enema or by the hypodermic injection of morphia. Dr. F. KING, of Georgia, has observed that *ipecacuanha*, gr. xxx, at one dose, will sometimes relieve both the irritability of the stomach and the pain in such cases. (*Half-Yearly Compend.*, Jan., 1878.)

Active counter-irritants over the seat of pain also aid in giving relief.

See further in "Surgical Therapeutics," under "Lithiasis."

NEPHRITIS.

ALFRED L. LOOMIS, M. D., NEW YORK.

Incipient nephritis, or active renal congestion, can, in most cases, be speedily relieved by the following treatment: First, place the patient in bed, in a room with a temperature above 75° Fah., then apply a dozen dry or wet cups over the lumbar region. Let the patient drink freely of diluent drinks, and administer one or two drastic purgatives. Induce moderate diaphoresis, and avoid carefully all stimulants.

In passive renal congestion, which is generally associated with some cardiac disease, *digitalis* is the most serviceable remedial agent.

DR. AUSTIN FLINT, NEW YORK.

In cases of acute tubal nephritis, this practitioner has derived great advantage from the free use of *water*, or milk and water, when there is a demand for nourishment. His plan is to administer the fluid in small quantities very frequently, a teaspoon or a tablespoonful every few minutes, so that from four to six ounces are taken hourly, or more if it can be given without disturbing the stomach.

A similar plan is highly recommended by Dr. W. H. DICKINSON. He combined with copious draughts of water, repeated doses of digitalis (inf. digit. f. ʒ j to f. ʒ iv *ter die*,) the real object being to increase the secretion of water at the kidney itself, and thus flush out the choked-up tubules. In the majority of cases thus treated, the urine will increase, the dropsy diminish, and the patient pass into convalescence without the occurrence of the various secondary evils which tend to swell the mortality of the disease.

RÉSUMÉ OF REMEDIES.

Belladonna is recommended by Dr. J. HARLEY in acute nephritis.

Colchicum, conjoined with magnesia, is useful in the nephritis of gouty subjects.

Opium is a remedy of great value, when assisted by diluents, the hip-bath, and large flaxseed poultices over the lumbar region.

**Baths.* The hot bath, or the hot hip-bath, is a useful soothing remedy.

Enemata of three or four quarts of water, at blood heat, will, it is said, sometimes cut short an attack of nephritis. The first injection usually brings away with it much fæcal matter; the second, to be given immediately after the return of the first, is usually retained without difficulty.

**Poultices.* Large light flaxseed poultices not only afford present relief, but arrest the progress of the disease.

URÆMIA.

PROF. M. CHARTERIS, M. D., GLASGOW.

The objects of treatment are to increase the flow of urine, and awaken the action of the skin. Hence, diuretics and diaphoretics are in order, as:

728. ℞. Tinct. scillæ, f. ℥ ij.
Liq. ammon. acetat., f. ℥ ij.
Decoctum scoparii, ad f. ℥ vj. M.
Two tablespoonfuls thrice daily.

And:

729. ℞. Liq. ammon. acetat., f. ℥ j.
Spts. ætheris nitrici, f. ℥ ss.
Tinct. hyoscyami, f. ℥ iij.
Aquam camphoræ, ad f. ℥ vj. M.
A tablespoonful every three hours.

During the convulsions, chloroform should be inhaled; or chloral may be injected hypodermically. In sudden attacks in plethoric persons, as sometimes in pregnancy, free venesection has much to recommend it, and should not be dismissed as absurd simply because it was the panacea of our forefathers.

DR. ALFRED L. LOOMIS, NEW YORK.

Of diuretics in acute uræmia *digitalis* stands first; but it must be given in large doses, f. ℥ ss of the infusion of the leaves every three hours for twenty-four hours, or until the diuretic effect is produced. During the convulsions, chloroform should be given by inhalation. When they cease, *morphia*, hypodermically, is demanded. This will control the muscular spasms and aid the processes of elimination. The injections may be given every two hours until these effects are produced, both in puerperal and non-puerperal cases. The dread which has so often been expressed of opium in uræmic conditions is groundless; as are also the alleged "accumulative" effects of digitalis.

DR. LIONEL S. BEALE, ENGLAND,

Lays down the rule that in blood-poisoning occurring in the course of renal disease, or when there appears any tendency to this condition, we

must never give sedatives. A very little opium may destroy life in chronic renal affections. The treatment that must be adopted is free purgation and the administration of sudorifics, and where there is reason to think the kidneys will respond, diuretics, such as certain tartrates, citrates, acetates, carbonates, or nitrates; but irritating diuretics, such as cantharides, juniper, and the infusion of broom, should not be given. The frequent use of the *hot-air bath* will often keep off renal coma for a long time. This may be given by placing the patient inside of a frame, with his head out, covering the frame with blankets, and heating the interior by means of a spirit lamp, the chimney of which can be covered with an iron tube emerging between the blankets.

Headache and nausea are often early symptoms of uræmia, and should at once be treated with sudorifics and purgatives, as elaterium, gr. $\frac{1}{4}$; this drug acts satisfactorily, but must be given with caution for fear of hypercatharsis. The vomiting may be relieved by small doses of creasote, hydrocyanic acid, ice, or carbonate of soda. All patients showing any tendency to uræmia require careful watching and should be visited frequently.

PROF. J. M. DA COSTA, M. D., PHILADELPHIA.

This teacher remarks (*Med. and Surg. Reporter*, April, 1879,) that his observation has taught him that in many cases uræmic poisoning is present in spite of the fact that the secretion of urine is quite free. In all cases of Bright's disease, where the patient is attacked with persistent vomiting, with a clean tongue, accompanied by headache, dullness, dilated pupils, and diarrhœa, there is probably incipient uræmic poisoning, no matter what the quantity of the secretion may be.

In such cases, an excellent agent is *benzoic acid;* gr. xx may be given every third hour, largely diluted with water. This acid prevents the accumulation of the urinary salts in the blood; it is a diuretic in the sense that it influences the excretion of solid material.

Such cases also require free purgation. Pills containing one drop each of croton oil, may be conveniently used for this purpose. The *vapor-bath* is also valuable, which may be given in bed by placing hot bricks, wrapped in damp towels, around the patient, under the covers; or a warm bath may be substituted if the patient is able to take it. Dry cups to the loins should not be neglected, as they aid in stimulating the kidneys.

When the benzoic acid begins to disagree with the stomach, as it probably will after three or four days, some other acid may be substituted, as the muriatic, gtt. x, three or four times a day, in an appropriate vehicle.

VI. DISEASES OF THE BLOOD.

Anæmia—Cerebro-Spinal Meningitis—Dengue (Break-bone Fever)—Gout—Hemorrhagic Malarial Fever—Intermittent Fever (Ague, Chills)—Milk Sickness—Purpura Hemorrhagica—Rheumatism, Acute—Rheumatism, Chronic—Typhoid Fever—Typho-Malarial Fever—Variola—Yellow Fever.

ANÆMIA.

JULIUS POLLOCK, M. D., M. R. C. P., LONDON.

In a large number of cases, especially in women, this writer (*Medical Times and Gazette*, 1877,) extols the following combination:

730.	℞.	Ferri ammonio-citratis,		gr. v.	
		Rhei extracti fluidi,		gtt. v.	
		Infusi quassiæ,			
		Aquæ menth. piper.,	āā	f.℥ij.	M.

For one dose, thrice daily.

Dr. P. insists on the rhubarb, as it greatly assists the action of the iron when the stomach is out of order. Bromide of potassium, gr. x, can be added to the mixture if the patient is nervous. The diet should be light and simple. Pepsin with the meals may often be employed with advantage. A moderate amount of exercise out of doors, when the weather permits, should be insisted upon, but anything like fatigue must be avoided. A tepid bath in the morning and a rub-down afterwards with a rough towel is a good thing. By-and-by, in a few weeks, more or less, the steel and rhubarb mixture may be left off, and fifteen drops of the solution of perchloride of iron given after each meal in a wineglass of water.

Under the very best and most careful treatment, the improvement in anæmia is not unfrequently slow and tedious, and, to prevent disappointment, it is as well to caution patients and their friends that they are not to expect, as a rule, any very rapid change. Once get the patient on the road to health, however, and time and perseverance will do the rest.

DR. HUGUENIN, PARIS.

In *pernicious anæmia*, when iron given internally can no longer be absorbed, Dr. HUGUENIN (*Gazette des Hôpitaux*, August 26th, 1876,)

makes use of the subcutaneous method of its administration. The formula for the injection of iron is as follows:

731. ℞. Ferri pyrophosph., Ammon. sulph., āā 5.00–ʒj½. Aquæ destillat., 50.00–℥j½. M.

So that a subcutaneous syringe holds three centigrammes of iron, or half a grain. Soon after the injection, redness of the skin, œdema, and often even heart symptoms are seen, but they soon disappear.

Dialyzed iron, fer Bravais, has claimed a high position in the treatment of anæmia, both by the mouth and by hypodermic injection. Dr. J. M. Da Costa has used a daily injection of ♏xv–xxx, at first diluted, later undiluted, if no irritation of the skin is produced. With the best preparations of the so-called dialyzed iron, there is not much danger of abscess. French physicians have expressed doubts as to its value, believing it is not absorbed.

PROF. JOHN B. BIDDLE, M. D., PHILADELPHIA.

732. ℞. Quiniæ sulphatis, gr. ij. Ferri sulphatis, gr. j. Strychniæ, gr. $\frac{1}{60}$.
For one pill thrice daily.

An excellent tonic combination, frequently prescribed by our author.

THOMAS K. CHAMBERS, M. D., LONDON.

TONIC BATH.

733. ℞. Acidi muriatici, f.℥–ij. Aquæ calidæ, C.xxx.
In a wooden bath, the patient to remain in it for from ten to twenty minutes.

Dr. Chambers has found this bath to confer muscular strength, even when employed alone. When used in cases of anæmia, while iron is being given internally, it gives an impetus to the improvement of the patient; more iron is taken up, and the blackening of the fæces ceases.

J. M. DA COSTA, M. D., PHILADELPHIA.

TONIC INHALATION.

734. ℞. Ferri lactatis, gr. j.–ij. Aquæ destillatæ, f.ʒj.

For one inhalation. To be administered (by means of any form of steam atomizer throwing a fine spray) two or three times a day. Useful in anæmia, when iron given by the stomach is not assimilated. Also in cases of gastric ulcer, when the constitutional effect of this agent is called for, while it is desirable to spare the stomach.

735. ℞. Ferri pyrophosphatis, ℥j.
Aquæ bullientis, f.℥ss.

Mix and add,

Extracti gentianæ fluidi, f.℥ss.
Curaçoæ, f.℥iss.
Vinim, q. s. ad f.℥iv. M.

Teaspoonful thrice daily.

This preparation, known as *elixir gentianæ ferratæ*, is much used and highly esteemed in this city.

PROF. EASTON, UNIVERSITY OF GLASGOW.

The following formula of our author has become very popular in England since its first publication in AITKEN'S "Practice of Medicine," as a general tonic in anæmia and cachexia. It is known as the *Syrupus Ferri, Quiniæ et Strychniæ Phosphatum:*

736. ℞. Ferri sulphatis, ℥v.
Sodii phosphatis, ℥vj–℥j.
Quiniæ sulphatis, gr. ccxij.
Acidi sulphurici diluti, q. s.
Aquæ ammoniæ, q. s.
Strychniæ, gr. vj.
Sacchari albi, ℥xiv.
Acidi phosphorici diluti, f.℥xiv.

Dissolve the sulphate of iron in one ounce of boiling water, and the phosphate of soda in two ounces of boiling water. Mix the solution and wash the precipitated phosphate of iron till the washings are tasteless. With sufficient dilute sulphuric acid dissolve the sulphate of quinia in two ounces of water. Precipitate the quinia with ammonia water and carefully wash it. Dissolve the phosphate of iron and quinia thus obtained, as also the strychnia, in the diluted phosphoric acid; then add the sugar and dissolve the whole, and mix without heat.

The above syrup contains about 1 grain phosphate of iron, 1 grain phosphate of quinia, and $^1/_{32}$ of a grain of phosphate of strychnia in each drachm. The *dose* might, therefore, be a teaspoonful three times a day.

The amount of phosphate of quinia might be increased according to circumstances; and if 8 grains of strychnia were employed in place of 6, as in the above, the phosphate of strychnia would be in the proportion of $^1/_{24}$ of a grain in every fluid drachm of the syrup. A much larger dose should scarcely be ventured upon.

PROF. S. D. GROSS, M. D., PHILADELPHIA.

737. ℞. Tincturæ ferri chloridi, f.℥ j.
Quiniæ sulphatis, gr. xx. M.
Twenty drops thrice daily, in sweetened water, through a tube.

He prefers the tincture of chloride to all other preparations of iron.

Prof. CHARLES D. MEIGS considered *reduced iron* (ferrum redactum) to be the most efficient of the chalybeates, in 2-grain doses three times a day, after each meal, on a full stomach.

DR. JOHN FORSYTH MEIGS, M. D., PHILADELPHIA.

738. ℞. Ferri et quiniæ citratis, ℈ iv.
Extracti gentianæ fluidi,
Spiritûs lavandulæ compositi, āā f.℥ iij.
Alchoholis, f.℥ vj.
Aquæ, f.℥ ivss. M.
A tablespoonful thrice daily.

PROF. ELLERSLIE WALLACE, M. D., PHILADELPHIA.

739. ℞. Ferri pyrophosphatis, ℥ ij.
Curaçoæ, f.℥ ss.
Aquæ, f.℥ ijss. M.
A teaspoonful four times a day.

RÉSUMÉ OF REMEDIES.

Arsenicum. In *progressive pernicious anæmia*, Dr. BYROM BRAMWELL (*Med. Times and Gazette*, Sept., 1877,) has succeeded after the failure of iron, cod-liver oil, etc., with liquor arsenicalis, ♏ij, three times a day.

Ferrum, in all its forms, has been largely employed, and numerous formulæ are given above. A few are here added.

Ferri Mistura Aromatica. The following formula is an excellent one:

740. ℞. Pale cinchona bark, powdered, ℥ j.
Calumba root, in coarse powder, ℥ ss.
Cloves, bruised, ʒ ¼.
Fine iron wire, ʒ ss.
Macerate in peppermint water, f.℥ xij, for three days, agitating occasionally. Filter, add peppermint water, q. s. ad f.℥ xijss; then add compound tincture of cardamoms, f.℥ iij; and tincture of orange-peel, f.℥ ss, and preserve in a well-stoppered bottle. Dose, f.℥ j–ij.

Ferri Peroxidum Hydratum. Dr. S. ASHWELL recommends the following formula as one which will often agree when other ferruginous compounds cause irritation:

741. ℞. Ferri peroxidi hydrati, gr. viij.
Pulveris ipecacuanhæ radicis, gr. j.
Hydrargyri cum cretâ, gr. ij. M.
Make one powder. Take one twice a day.

Ferri Sulphas is a very effective salt of iron in anæmia. It may be combined with gentian; with quinine and strychnia; with a sedative, as conium; with an aperient, as rhubarb or aloes; with hops, as advised by Dr. S. ASHWELL.

742. ℞. Ferri sulphatis, gr. j–ij.
Extracti humuli, gr. ij–iij. M.
Make pill. Three to be taken daily.

Magnesii Oxidum Nigrum has been employed with success in simple anæmia, instead of iron.

**Oleum Morrhuæ* is a valuable remedy in all forms of anæmia, its efficacy being increased by combination with a ferruginous salt.

Oxygen. Mr. HAYEM, of Paris, has observed that, in anæmia, when oxygen is inhaled in the quantity of 10 litres daily, after two or three inhalations, there is a marked improvement in the appetite, digestive troubles disappear, and in a week or two, the patient takes a substantial diet, and gains weight. But it is necessary that this treatment be backed by iron tonics, to alter the quality of the blood corpuscles and make the improvement permanent. (*Lancet*, September 6th, 1879.)

Phosphorus is valuable in combination. (F. 735, 736.)

Potassæ Liquor, in *pernicious anæmia*, sometimes succeeds when all other means fail. If improvement is not prompt, it should not be pushed.

CEREBRO-SPINAL MENINGITIS.

This disease, known also as "spotted fever," "epidemic meningitis," etc., is more frequent in children than adults, but by no means confined to those of tender years. In its epidemic forms, it is frequently very fatal at all ages. The following is the treatment pursued by

DR. NATHAN S. DAVIS, CHICAGO.

743. ℞. Tincturæ physostigmatis, f. ℥ j.
Extracti fluidi ergotæ, f. ℥ iss. M.
Half a teaspoonful every two hours.

The *Calabar bean* is used very freely by Dr. DAVIS, in this disease, and with more apparent effect in controlling it, than any other remedy he has tried. The pulse becomes slower, the respiration more regular, the patient quieter, the pain less intense. If the disease assumes a chronic form, with transient and wandering, but with severe neuralgic pains, a fretful condition of mind, variable appetite, debility, and disturbed sleep, he has obtained very decided and permanent relief from

744. ℞. Tincturæ physostigmatis, f.℥j.
Tincturæ opii camphoratæ, f.℥iss. M.
Half a teaspoonful three times a day; and at bedtime, a moderately full dose of Dover's powder and quinia.

PROF. FELIX VON NIEMEYER, M. D., TUBINGEN.

In the treatment of *acute meningitis*, it is not generally proper to bleed from the arm, but *leeches* may be applied to the brow and behind the ears, and, if the strength of the patient permit, the application may be repeated. The shaven head may be covered with *cold compresses*, and an active *purge* of calomel and jalap administered, viz.:

745. ℞. Hydrargyri chloridi mitis, gr. ij.
Extracti jalapæ, gr. viij. M.
Divide into two pills, and order both to be taken.

In the latter stages of the disease, if there be coma and other signs of cerebral palsy, apply a large *blister* to the nape of the neck, and rub the following pustulating ointment on the head:

746. ℞. Olei tiglii, ♏xv.
Adipis, ℥ss. M.
One-fourth part to be rubbed into the skin every eight hours, until an abundant eruption is produced.

Still more efficacious than these derivatives, are *douche-baths*—pouring cold water over the head from a pitcher held some distance above it. The patient almost always recovers consciousness as this is being done, but it must be repeated at intervals of a few hours, to secure a permanent result; with each successive employment, the number of pitcherfuls is to be increased. Frictions with *mercurial ointment*, and continued doses of *calomel*, are much employed.

PROF. J. LEWIS SMITH, M. D., NEW YORK.

This author, in speaking of this disease, especially as it appears in children, disapproves of blood-letting, even by leeches. The one drug he relies upon, is *bromide of potassium* in doses of gr. v–vj every two, three, or four hours, to a child of five years, according to the urgency of the case. After the first week it should be given less frequently, and finally omitted. Small doses of hydrate of chloral are best to relieve the pain. Quinia is of no service. Bismuth, in large doses, controls most effectively the nausea. Frequent counter-irritation along the spine by dry cups or an irritating liniment is useful from the first,

and also vesication of the nucha later in the disease. Sustaining measures should be commenced early.

PROF. WILLIAM FULLER, M. D., MONTREAL,

Urges strongly (*Canada Medical Record*, September, 1877,) *hot water* to the head, instead of cold, and the use of *morphia*. The plan he adopts when he suspects meningitis is: 1. To regulate the temperature, that is, keep the patient cool but equally warm all over. 2. Unload the bowels by a mild purgative, remove worms, etc., if any cause of irritation is present. 3. Quietude and soothing medicines, the use of which is indicated by flushings and irregular cutaneous circulation, which are the premonitory symptoms of spasms or coma; should the latter symptoms, spasms or coma supervene, he increases the dose. 4. Frequent bathing the head with warm water. The points he insists upon are: 1. That coma is, in most instances, not due to the pressure of effusion, but to irritation. 2. That *opiates* are not contra-indicated in meningitis, even when coma is present, or threatened, if there are irregulatities of cutaneous circulation or spasms, and that opium actually, by relieving irritation, dissipates the coma. 3. That warm water is more agreeable, more soothing, and more efficacious than ice-caps.

DR. J. B. HAMILTON, NEW YORK.

In the *New York Medical Journal*, February, 1875, this writer gives his treatment as follows: For the first twenty-four or forty-eight hours:

747. ℞. Extracti ergotæ fluidi, ℥ j.
Spritûs ammoniæ aromatici, ℥ ij. M.
A teaspoonful in a little water every four hours.

748. ℞. Potassii acetatis, ʒ xij.
Aquæ camphoræ, f. ʒ vj. M.
A tablespoonful every two hours, until diuresis is produced.

In addition to these remedies, direct a warm bath, followed by wrapping in flannel, or rubbing with dry mustard, every three, four, or six hours, according to the urgency of the case. Stimulants may be necessary from the outset.

As soon as the symptoms show any amelioration, the ergot mixture may be diminished in frequency, and at the third or fourth day discontinued. Quinine in large doses will then be found of advantage, and

a more stimulant diuretic, as spiritûs ætheris nitrosi, may be substituted for the potassa acetate; and for the sequelæ nothing has proved more serviceable than *iodide of potassium*, as occasion demanded. This writer considers the bromide of potassium treatment "utterly worthless."

DR. WILLIAM READ, BOSTON, MASS.

One of the most rational and also successful methods of treatment of this disease is described by Dr. READ (*Medical and Surgical Reporter*, vol. XXX, page 469.) He usually commences with a full dose of castor oil, or other mild laxative, and then prescribes:

749. R. Ergotinæ (Bonjean's,) gr. x.
Extracti belladonnæ, gr. j–ij. M.
Make ten pills. One every three hours.

Croton oil is applied to the nucha until a copious eruption is produced, and if the spine is tender it is blistered. Concentrated nourishment is ordered.

PROFESSOR VON ZIEMSSEN, GERMANY.

The treatment of this physician comprises leeches behind the ears, and ice-bags to the head, neck and back; the inunction of fifteen to thirty grains of mercurial ointment twice daily; frequentiy rinsing the mouth with chlorate of potash solution, to prevent stomatitis; and especially *morphine*, in full doses, gr. $\frac{1}{3}$–ss, hypodermically in adults. Quinine is useful only in those rare cases where the temperature ranges very high. It is then required in doses of gr. xv–xxx. In a later period of the disease, *iodide of potassium* is of great service in producing absorption of the exudation.

RÉSUMÉ OF REMEDIES.

Antimonii et Potassii Tartras has been exhibited in repeated fractional doses with benefit. It is contra-indicated if the patient be very young, if there have been prodromic symptoms, and if the inflammatory condition be not well marked.

Belladonna has been considered by many to be strongly indicated in this disease. (F. 749.)

Ergota has unquestionably a good record in cerebro-spinal meningitis. (F. 749.)

Hydrargyrum. In regard to the use of mercury in acute meningitis, authorities differ. Dr. RUSSELL REYNOLDS has never seen any good results from its administration. Dr. J. S. RAMSKILL recommends it as a valuable remedy, and states that the system should be quickly brought under its influence, by

combining with its internal admininistration (in small and frequently-repeated doses), the use of inunctions in the groin and axilla.

Opium is a most valuable agent in epidemic meningitis, when administered at the outset of the attack, in cases in which the inflammatory predominates over the septic element. (See p. 383.)

Physostigma. (See p. 381.)

Potassii Iodidum is highly esteemed in the later stages. A typical English plan of treatment would be hydrargyrum cum cretâ, gr. j, every four hours, and gr. ij of the iodide, with gr. iij of the bromide of potassium, thrice daily. (Dr. J. Cross.) On the value of the bromide, see above.

Terebinthinæ Oleum, in stupes, or as an enema, seems occasionally to benefit in the early stages of the disease.

DENGUE (BREAK-BONE FEVER.)

PROFESSOR GREENSVILLE DOWELL, M. D., TEXAS.

The treatment of this physician (*Yellow Fever and Malarial Diseases*, Philadelphia, 1877,) is to open the bowels with citrate of magnesia, and keep them soluble. This is absolutely necessary. Then:

750. ℞. Hydrarg. chlor. mitis,
Pulv. ipecac. et opii,
Quiniæ sulphatis, āā gr. iij. M.
Por one powder. Two to three powders a day, for two or three days.

If there is much debility and a low pulse:

751. ℞. Tinct. cinchonæ,
Tinct. gentianæ,
Tinct. calumbæ, āā f.℥ ij. M.
Tablespoonful every two hours, in a little water, until four doses are taken, every morning.

If, on the contrary, the pulse is hard and full, and the fever sthenic, tincturæ aconiti fol., gtt. v–xv, may be given every few hours. When the tonsils are enlarged, and the mouth and fauces show a papulous eruption, the following is useful:

752. ℞. Tinct. capsici,
Tinct. guaiaci, āā f.℥ j.
A teaspoonful in a cup of water, as a gargle.

Relapses are common, and convalescence usually tedious. The above-mentioned tonic is advisable in such cases.

SIR. J. FAYRER, M. D., K. C. S., ETC.

This distinguished practitioner, speaking of the treatment of dengue, as he has observed it in India, (*The Practitioner*, Dec., 1876,) expresses his opinion that neither emetics nor active purgatives are necessary. They do no good, but increase the weakness and aggravate the suffering by the muscular movements necessarily induced. Moderate action of the bowels, followed by a warm carminative aperient, with an occasional dose of calomel, rhubarb, or colocynth, especially if they remain confined, to which there does not appear to be any peculiar tendency, though the alvine evacuations are dark, and often slimy and confined, at the outset; salines, such as the acetate of ammonia, citrate of potash, with nitro-æther, combined with aconite, are good in the pyrexia. In cases of very high temperature, 105°, 106°, 107°, cold sponging is beneficial.

Belladonna seems to confer great relief in this disease; 10 to 15 drops of the tincture may be given, and two or three such doses, given at intervals of an hour, will sometimes produce excellent effects, and give much relief. The extract may be given, if prepared in doses of $\frac{1}{3}$ of a grain; or the juice, in similar doses to those of the tincture.

For the pains and nocturnal restlessness, *morphia* or Dover's powder may be given; and, as external applications, liniments containing opium, belladonna, and chloroform, are serviceable, rubbed on the spine, back, and joints.

Tonics, and a carefully-regulated nutritious diet, are also indicated, and all spoliative or depletive measures must be avoided. The tonics must be of the bitter vegetable kind, such as gentian and calumba; with these may be combined a small quantity of quinine, with some mineral acid; and, in some cases, the dilute phosphoric acid, combined with nux vomica or small doses of strychnine, may prove useful.

As to wine, good claret is probably the best, but others may be given if preferred.

Quinine is given more for its tonic than its antiperiodic effects; though, where there is a tendency to relapses, the judicious administration of 5 or even 10-grain doses may be beneficial in arresting them. *Bromide of potassium* is recommended by some authorities, and especially when convulsions occur in children. Alkalies, colchicum, and other remedies in use in rheumatism, have been found to have little, if any, effect in relieving the pains of dengue.

For the irritation of the skin, which is sometimes very troublesome, he recommends the application of *camphorated oils*. Warm baths also are likely to confer relief on this symptom.

PROF. F. PEYRE PORCHER, M. D., SOUTH CAROLINA.

This experienced physician believes that break-bone fever can always be treated successfully, if taken early, by a single mercurial purge combined with quinine as an antipyretic, as:

753. ℞. Hydrarg. chloridi mitis,
Quiniæ sulphatis, āā gr. xv. M.
Take at once.

This is to be followed by a saline purge. To this is added the early, assiduous and repeated sponging of the head, arms and hands with ice-cold water to reduce and keep down the temperature; with the use also, at the beginning of the fever, of mustard sinapisms and foot-baths. The only subsequent treatment consists in the enjoining of rest and quiet, and the employment of a mild alkaline mixture with a little morphia, with nourishment carefully administered. A little tinct. of aconite might be beneficially added to the mixture.

744. ℞. Potassii acetatis, ℥j.
Morphiæ sulphatis, gr. j.
Tincturæ aconiti, f. ℥ ss.
Aquam, ad f. ℥ vj. M.
A tablespoonful every two or three hours.

For *Résumé of Remedies*, see under "Intermittent Fever."

GOUT.

DR. HENRY W. FULLER, LONDON.

For the purpose of clinical instruction, Dr. FULLER divides cases of acute gout into two classes, namely: 1. Cases in which the excretory organs are originally sound and functionally active—cases in which the attack of gout is due principally to excess and indiscretions of diet; and 2. Cases in which the excretory organs are in some way disordered, and fail in performing their eliminatory functions—cases in which the patient is not necessarily guilty of indiscretions of diet, but in which the liver and kidneys fail in their action, either as the result of functional disorder, or of organic change in their structure.

The first class of cases correspond with those which pass under the name of asthenic gout; the tongue is usually furred, the urine loaded, and the bowels are commonly torpid. In these cases, until the acute symptoms have subsided, Dr. FULLER restricts the diet to liquids, administers a saline draught containing sulphate and carbonate of magnesia, and a few drops of colchicum wine; occasionally gives an aperient pill containing calomel, aconite, and opium, and wraps the joints in finely-carded wool, or in flannels steeped in a solution of soda and laudanum. As the acute symptoms subside, a more generous diet is permitted, and some light, bitter tonic, such as tincture of gentian or calumba, is added to the mixture.

The second class of cases have more affinity with what is termed atonic gout: the tongue is often clean and the urine clear—sometimes of low specific gravity—and the bowels are regular. In these cases, Dr. FULLER does not restrict the diet to the same degree; he allows a little meat without vegetables, and, also, if desired, a glass of sherry or a little spirits and water. He acts freely on the skin by means of the hot-air bath; administers an aperient in the morning, containing taraxacum and sulphate of magnesia, and, during the day, he gives a warm stomachic draught, containing ammonia and a few grains of soda in a light bitter infusion. Occasionally, a dinner pill is prescribed, containing rhubarb and a grain of colchicum; and in some instances—characterized by pale, clear urine—a draught containing quinine, the mineral acids, and taraxacum, is substituted for the mix-

ture just referred to. In these cases, as soon as the acute symptoms have subsided, a drachm of the syrup of phosphate of iron is given each morning before breakfast.

DR. H. SALTER, LONDON.

The *local treatment* of this author is all that is peculiar. It consists in the application of the following lotion:

755. ℞. Potassii iodidi, ℥j.
Potassii bicarbonatis, ℥j.
Aquæ bullientis, Oj. M.
To this a little tincture of opium may be advantageously added.

Double lint, saturated with this lotion, is applied to the part affected, and covered with oil-silk; to that is put a layer of cotton-wool, and the whole swathed in a flannel bandage. The lint should be taken off from time to time, and re-dipped in the lotion. The relief that the patients experience from this application, is very great. With or without this lotion, there are three other things on which Dr. SALTER insists, in the local treatment of a gouty joint—perfect physical rest, protection, and preventing the part affected being too dependent.

PROF. S. D. GROSS, PHILADELPHIA.

756. ℞. Vini colchici radicis, f.℥j.
Morphiæ sulphatis, gr. j. M.
For one dose, at bedtime, in gouty affections of the joints.

This treatment should be preceded by purgation or venesection, if indicated, and be followed in the morning by a gentle laxative. These doses are recommended by our author as the most efficient, and as seldom disappointing the most sanguine expectations. Where there is a full, bounding pulse, indicating excessive arterial action, then the following will come into play:

757. ℞. Tincturæ aconiti radicis, f.℥j.
Morphiæ sulphatis, gr. ij.
Antimonii et potassii tartratis, gr. j.
Aquæ, f.℥iss.
Syrupi zingiberis, f.℥ss. M.
A teaspoonful every three hours.

Veratrum viride may be substituted for the aconite, in the same, or double the dose. The action of these potent remedies should, of course, be carefully watched, and kept within proper limits. Together

with the above means, the following should be employed, to neutralize the acid state of the blood:

758. ℞. Potassii bicarbonatis, ʒ j.
Sodii bicarbonatis, ʒ ij. M.
For six powders. One to be taken every six hours, in a wineglassful of water.

As a local application, nothing will be found better than:

759. ℞. Tincturæ opii, f. ʒ j.
Linimenti saponis, f. ʒ ij. M.
To be rubbed in twice a day, and constantly kept in contact with the affected joint, by means of a piece of flannel covered with oiled silk. A fly-blister may be used, if the disease manifests a disposition to linger.

PROF. A. B. GARROD, KING'S COLLEGE, LONDON.

760. ℞. Lithii carbonatis, gr. iv.
Aquæ rosæ, f. ʒ vj. M.

This solution is to be warmed, and then imbibed by means of charpie or a piece of sponge, and applied on the seat of pain, and covered by a sheet of gutta-percha. Two or three times a day, the application is to be wet with the solution, in order to keep it always moist. Internally, the carbonate of lithia, in doses of gr. iij–vj, or the citrate, in doses of gr. v–x, in aërated water.

761. ℞. Fraxini foliæ, ʒ ss.
Aquæ, Oj.
The leaves are to be boiled in the water during ten or fifteen minutes, then strained and sweetened. To be taken in fractional doses during the day, an hour before the meals, in chronic gout.

The leaves of common ash, though much extolled in France and Germany, in the treatment of gout and rheumatism, have not succeeded in the hand of our author, in acute gout; when taken for a long time, and in large quantities, in the form of decoction of the leaves, they have, probably, some influence in keeping off the attacks in chronic gout.

DR. HENRY G. PIFFARD, NEW YORK.

In the treatment of the gouty dyscrasia, the two principal indications are, 1, to depurate the blood, and, 2, to promote oxydation.

1. Depuration of the blood is to be effected by calling into more vigorous action, either the kidneys, bowels, or skin. If the trouble is due to defective renal activity, a point which may be determined by

careful estimation of the amount of nitrogen daily discharged in the urea, uric acid, etc., we must treat these organs with some leniency, and be careful not to urge them too much, since, by undue stimulation, we may increase the difficulties under which they are laboring. We shall be obliged, therefore, to depend upon the skin and bowels to fulfill the first indication. The functional activity of the skin is increased by exercise, bathing, and warmth, and is most rapidly and vigorously influenced by the hot-air or Turkish bath.

If the bowels are to be stimulated, we may employ various cathartics, the most useful in this connection being the ordinary *senna* and *salts*, given in sufficient doses to produce one or two loose evacuations daily. Professor HARDY, of Paris, praises very highly an infusion of *wild pansy, viola tricolor*, combined with senna, in about the following proportions:

762. ℞. Violæ tricoloris, ℥j.
Sennæ, ʒss.
Aquæ bullientis, Oij. M.
For an infusion. Filter when cold.

One-quarter to one-half of this quantity is to be taken daily, and the amount to be diminished gradually, as the necessity for its employment lessens. Professor HARDY states that he has given this purgative for two or three months at a time without ill effect.

In place of these remedies we may employ some of the natural mineral waters, as those of Seidlitz, Pullna or of Friederichshall. The native waters which seem to approach most nearly to these in composition, are the Estill and Crab Orchard Springs, in Kentucky.

It is, however, but rarely that active purgation is required. If the kidneys are perfectly healthy, we may call upon them to perform the work, and leave the bowels alone. To increase the renal activity we have recourse to diuretics. The ones especially serviceable in this connection, are *vinum colchici, infusum digitalis, balsam of copaiva, propylamine, carbonate of lithia*, Vichy water and *wine of green coffee*. The latter valuable preparation is prepared as follows:

VINUM CAFFEÆ VIRIDIS.

763. ℞. Ground, unburned coffee, one pound.
Good sherry wine, one quart.
Digest for two weeks. Filter through flannel, press the residue, and add wine to make a quart. Dose, f.ʒj–ij per diem.

These remedies, one and all, exert a marked influence in increasing the action of the kidneys, and are among our chief reliances in general gouty and rheumatic conditions. They may be used singly or combined, and for a considerable period. The alkalies, however, have a tendency to impoverish the blood. A good plan, if we anticipate a prolonged use of them, is to intermit their employment for one or two weeks out of each month, giving iron, if necessary, in the intervals.

If incomplete oxydation is owing to an excessive amount of nitrogenized food, we must rely chiefly on dieting. Meat should be cut off to a greater or less extent, and in place of it a larger quantity of bread, vegetables and fat should be consumed.

If, on the other hand, the patient has been accustomed to but a moderate quantity of meat, it will be necessary to institute measures specially designed to promote oxydation. The use of preparations of *iron* here takes the first place. But in addition to this we must endeavor to supply a full amount of oxygen by exercise in the open air, a well-ventilated bed-room, and the like. In addition, we may attempt to furnish oxygen directly to the blood, by inhalations of the pure gas, or partly oxonized. Further, we may employ certain medicines which contain oxygen largely, and are believed to be capable of giving it up to the blood, as for instance, the *chlorate of potassium*. Finally, if the liver be torpid, we may have recourse to the occasional or frequent use of those drugs which have the reputation of hepatic stimulants, as *mercury, podophyllin,* etc.

MINERAL WATERS.

The prolonged and moderate use of the natural mineral waters has been spoken of as one of the most efficient corrections of the arthritic dyscrasia. They must be used with a proper discrimination, if good effects from them are expected.

The waters chiefly employed for this purpose contain either alkaline carbonates, chlorides or sulphates.

The *Vichy* waters, rich in carbonate and bicarbonate of soda, appear to be well adapted for strong subjects in whom the functions of the liver and digestive organs are at fault; but are contra-indicated when there is a tendency to the formation of chalky concretions about the joints, and in debilitated constitutions.

Waters containing an abundance of chlorides, such as those of *Wiesbaden*, are less debilitating and more stimulating than those of

Vichy; they are consequently better adapted for cases in which the circulation is sluggish, and the secretions deficient; also, in cases of rigidity from thickening of the textures.

The springs, rich in sulphates, a typical example of which is those of *Carlsbad*, act with considerable force on both the bowels and kidneys. They are often very useful in cases accompanied by deficient action of the bowels with a congestive state of the liver; but should be avoided by weakly patients.

In addition to these, the waters containing *lithia* are claimed to have a peculiar and almost specific power in removing the chalky concretions of urate of soda so frequent in this diathesis. In Europe, the springs of Baden-Baden, and in the United States, the *Gettysburg* water have acquired particular reputation in this direction.

In all cases the waters should be commenced cautiously, small quantities being taken at a time, with care not to oppress the stomach by the presence of too much liquid; and whenever there are symptoms of exciting febrile disturbance in the system, their use should be suspended.

RÉSUMÉ OF REMEDIES.

Aconite. Professor GROSS recommends tincture of aconite root, with morphia and antimony, when there is excessive arterial action.

Ammonii Phosphas has been recommended, in ʒj doses daily, highly diluted. Dr. GARROD has derived much benefit from the long-continued use of this salt in chronic conditions of the gouty habit.

Cajuputi Oleum, in doses of gtt. v–vj, frequently repeated, is serviceable in retrocedent gout.

***Colchicum*, in gout, has been compared to cinchona in ague, but unfortunately, unlike the latter remedy, it does not prevent a return of the disease. Dr. A. B. GARROD states that often an almost magical change is produced by a single large dose, without the least increase in any of the secretions, the effect showing itself in the rapid decrease of the pain, and other symptoms of the joint inflammation. (F. 756, 764.)

Fraxini Folia. Ash leaves, in infusion, have been used by Dr. A. B. GARROD with advantage, but, as he remarks, the amount of the infusion given daily being considerable, the action of the diluent must not be forgotten. (F. 761.)

Guaiacum is considered by Dr. A. B. GARROD as especially useful in the asthenic gout of old subjects. It may be given continually, for a long time, without injury. This remedy is much employed in Germany.

Lithii Carbonas is a valuable remedy. So, also, are the natural lithia waters of Baden-Baden. (F. 760.)

**Lithii Benzoas.* The benzoate is probably superior to all other preparations of lithium in the treatment of the uric acid diathesis. It is readily soluble

in water, and the benzoic acid, by its transformation into the nitrogenous hippuric acid, counteracts the secretion of the uric acid. Instead of the rather insoluble urates, which are generally regarded as the cause of the gouty affection, appear the readily soluble hippuric alkalies and earths, which are excreted from the organism with the urine.

Magnesii Carbonas, dissolved in an excess of carbonic acid, is an excellent manner of exhibiting magnesia, which is often of great service in chronic gout.

Manna is an excellent aperient, in the following combination:

764. ℞.	Mannæ,	ʒ iss.	
	Vini colchici,	♏xx.	
	Potassii tartratis,	ʒ ij.	
	Tincturæ cardamomi compositæ,	f. ʒ j.	
	Infusi sennæ compositi,	f. ʒ x.	M.

For one draught.

Muriacticum Acidum Dilutum is strongly recommended by Dr. J. F. DUNCAN (*Medical Press*, May 2d, 1866,) as acting more directly upon the primary cause of the disease, the presence of lithic acid in the blood, and holding out a greater prospect of effecting a real cure than any antacids. He directs the following mixture:

765. ℞.	Acidi muriatici diluti,	f. ʒ iss.	
	Spiritûs chloroformi,	f. ʒ ij.	
	Tincturæ colchici,	f. ʒ j.	
	Infusi cascarillæ,	f. ʒ vj.	M.

Two tablespoonfuls every three hours.

Oleum Olivæ is strongly recommended by Dr. J. SPENCER RAMSKILL, of London

Potassii Iodidum is frequently indicated in chronic gout. When fluid effused into the joint cavities is slow of absorption, the iodide often acts to great advantage.

Potassii Nitras is recommended by Prof. BENNETT, of Edinburgh, in acute gout.

Quiniæ Sulphas. From his experience in a half a dozen cases, Dr. C. W. SCHŒNEMAN (*Pacific Medical Journal*, May, 1879,) believes that quinine will cut short an attack of gout. He gives:

766. ℞.	Quiniæ sulphatis,	gr. iij.	
	Sodii bicarb.,	gr. xij.	M.

This amount every two hours during the day.

No other medication is needed, though the joint may be painted with tincture of iodine.

**Rheum*, taken regularly between the attacks, often wards off a return. At the period of an impending paroxysm, Professor GRAVES, of Dublin, advises the following:

767. ℞.	Pulveris rhei,	ʒ j.	
	Aurantii corticis,	ʒ ij.	
	Pulveris aloës c. canella,	ʒ ij.	
	Spiritûs vini gallici,	Oiv.	M.

A tablespoonful of the strained liquor, in water, night and morning.

EXTERNAL APPLICATIONS.

Aconitia, applied locally, over the seat of the pain, is an excellent palliative.

Alcohol. Sir C. SCUDAMORE recommends a tepid lotion of one part of alcohol and three of camphor mixture.

Cajuputi Oleum, externally, is of much benefit.

Colchicum, locally, to the affected part, is highly praised by Dr. LAYCOCK.

Iodoform, externally applied, has succeeded in the hands of some practitioners, in relieving the pain.

**Iodine*, locally used, is a very valuable remedy. The following formula is said to afford, sometimes, almost instant relief:

768. ℞. Iodinii, ℈ ij.
Alcoholis, f. ℥ j.
Aquæ, f. ℥ vj–f. ℥ j. M.

Dr. J. PEREIRA says that no external remedy gives such relief as iodine, but that the skin of different individuals is most unequally susceptible to its influence; in some it excites great pain, while in others it produces scarcely any. It is especially useful when effusion into the synovial membranes or sheaths has taken place.

Morphia. A solution of morphia, applied by means of lint, often affords great relief:

769. ℞. Morphiæ muriatis, gr. viij.
Aquæ, f. ℥ j. M.

Pressure. A number of recent writers have borne strong testimony to the value of gentle and equable pressure over the affected limb, in gout. Some diachylon should be spread on felt, and over this, a flannel bandage be firmly and equably applied. The great art in this treatment is to have the pressure evenly distributed.

Sinapisms to the inflamed part often afford speedy relief. They are also useful in retrocedent gout, in inviting a return of the disease to its original seat.

Sodii Phosphas. The finely-powdered bibasic phosphate of soda, sprinkled over moistened spongeo-piline, and applied so as to envelop the whole of the affected part, affords immediate relief in many cases.

Sulphur. The exposure of the bed-clothes to strong sulphur fumes, before they are spread over the patient, is recommended to induce copious perspiration and relief of pain.

Tabaci Folia. The application of moistened tobacco leaf often affords great relief.

Veratria, in ointment, is of occasional service, and is recommended by Sir C. SCUDAMORE:

770. ℞. Veratriæ, gr. xxx.
Unguenti, ℥ j. M.

Zingiber. A ginger plaster placed over the epigastrium, relieves the pain of gout in the stomach.

HEMORRHAGIC MALARIAL FEVER.

DR. R. D. WEBB, ALABAMA.

The indications of treatment are—to arrest the paroxysms; to relieve the nausea and restlessness, so as to facilitate the administration of medicines, and add to the comfort of the patient; to sustain the patient by appropriate food and stimuli; to assist the emunctory functions of the liver and skin; and, in the latter part of the disease, to promote the action of the kidneys, so as to avoid the accumulation of deleterious matters in the blood, and to prevent a recurrence.

He usually commences with a mercurial purge, and follows with a full amount of quinine, gr. xxx, in four doses, one every two hours, if the stomach will retain it. If it will not, the drug should be used hypodermically. Chloral hydrate and bromide of potassium, by enema, will lessen the gastric irritability; or small doses of morphine may be given for that purpose. Of the objections to quinine, on the ground that it increases the blood in the urine, Dr. WEBB says: "I have ever looked upon the mere fact of blood in the urine as of minor importance, and have never directed remedies specially to the arrest of this symptom. I believe it to be dependent upon the condition of the nervous system, and, by directing my remedies to the source of the evil, I expect to remove the *cause*, and the *effect* will cease. This, I believe, is best accomplished by the use of quinine; and if, in its administration, the hæmaturia is temporarily increased—as I have no no doubt it is, at certain times—I do not, upon this account, hesitate to use it. I regard it here, notwithstanding this temporary increase, as the great hæmostatic, by its power of removing or counteracting the condition upon which the hæmaturia, in common with other symptoms, is dependent. (*Hemorrhagic Malarial Fever.* A Monograph. Selma. 1876.)

DR. THOMAS J. PUGH, LOUISIANA.

This writer states that he became dissatisfied with quinine and mercury in this troublesome form of malarial poisoning, and now uses instead:

771. R. Vini ergotæ, f.℥j.
Tinct. ferri chloridi, gtt. xx.
Olei terebinthinæ, gtt. v.
Spiritûs etheris nitrici dulcis, gtt. xx. M.
This amount, in a gill of water, every two hours, until the urine clears.

After this omit the ergot and oil turpentine, but continue the iron and nitre, and add to them a preparation of nux vomica—the fluid extract—in five-drop doses, every four hours, until the patient is safe from a recurrence of the disease, and then direct it every eight hours, or before meals. The danger in this disease is not from an excessive flow of bloody urine, but rather from a suppression of urine. (*Atlanta Med. and Surg. Jour.*, Jan., 1877.)

For *Résumé of Remedies*, see under "Intermittent Fever."

INTERMITTENT FEVER (AGUE, CHILLS.)

THE PERSONAL PROPHYLAXIS OF MALARIA.

The general belief that the cinchona alkaloids are reliable prophylactics against the malarial poison, is so far from correct that it should be renounced. It is even dangereous, for it has been well established by the observations of the English surgeons in West Africa and elsewhere, that when long used as a preventive, it not only loses its prophylactic, but also its therapeutic powers. (See Surgeon GORE's *Medical History of the West African Campaign*, page 164.) The best prophylactics are a generous diet, plenty of work, mental and physical, but not to exhaustion, avoidance of night air and wet, proper clothes, and a cheerful disposition. The eucalyptus, in the form of infusion or extract, and infusion of box leaves, have been lately advocated on respectable authority.

The free use of pepper in the food, and the habit of taking a small cup of strong coffee on rising, may be favorably mentioned. During the night, doors and windows should be closed, and an open fire should be lighted in the evening and early morning. The drinking water should be filtered, or thoroughly boiled before using.

From the experience of English surgeons in India, (*Indian Medical Gazette*, March, 1871,) *quinoidine* is the alkaloid of bark that ranks highest in prophylactic qualities. Three grains daily was the amount

prescribed. Small and regular doses of *strychnia* have been highly praised as a prophylactic by Dr. C. W. WAYLEN, of the East India Service.

PROF. S. M. BEMISS, M. D., NEW ORLEANS.

This writer (*New Orleans Medical and Surgical Journal*, Sept., 1876,) states that in the treatment of malarial fever, three objects must be held in view: 1. To restore to the blood its normal constituents. 2. To rid it of impurities; and 3. To ward off malarial paroxysms.

For the first of these, *iron* suggests itself. A combination from which great benefit is often obtained, is:

772. ℞. Ferri redacti,
Quiniæ sulphatis, āā ʒss.
Acidi arseniosi, gr. j. M.
Make fifteen pills. One two or three times a day, with the meals.

Another is:

773. ℞. Ferri et quiniæ citratis, ℈j–ʒss.
Infusi gentianæ, f.ʒiv. M.
A tablespoonful two or three times a day.

Or:

774. ℞. Quiniæ sulphatis, ℈j.
Tinct. ferri chloridi, f.ʒij.
Aquæ cinnamomi, f.ʒvj. M.
A teaspoonful two or three times a day in sweetened water.

Where there is much tendency to serous effusion, the following is an excellent formula:

775. ℞. Ferri ammonio-sulphatis, ℈ij.
Quiniæ sulphatis, ℈j.
Acidi sulphurici diluti, f.ʒj.
Aquæ cinnamomi, f.ʒvij. M.
A teaspoonful in sweetened water twice daily.

The second indication includes measures of treatment so often called for, that the medical attendant should constantly observe for the presence of symptoms justifying a resort to them. These symptoms are a coated tongue, with vitiation of the sense of taste; a muddy skin; cephalalgia, or vertigo; slight feverishness; and urine, for the most part, highly colored and heavy. These symptoms contra-indicate the employment of analeptic remedies. Eliminants and alteratives should be appealed to. Mercurials are our most efficient remedies. From

1 to 5 grains of calomel may be given, combined with bicarbonate of soda and white sugar, or with the soda alone. These small doses may be repeated at intervals varying from four to forty-eight hours, according to the urgency of the case. In certain cases, it is desirable to avoid the nausea and free catharsis, liable to be produced by calomel and soda. A very efficient, as well as mild mercurial dose, will be found in the combination of 3 grains, severally, of blue mass, compound extract colocynth, and castile soap; make two pills, and give at one dose. Restorative and eliminant remedies may be combined, as:

776. ℞. Magnesii sulphatis, ℥ j–ij.
Ferri sulphatis, ʒ ij.
Acidi sulphurici diluti, f. ʒ j.
Syrupi aurant. cort., f. ℥ vij.
Aquam, ad f. ℥ vj. M.
A teaspoonful, in water, twice daily.

The third indication is best subserved by the preparations of cinchona. These may be given habitually, as, for example, from 3 to 5 grains of quinine in 1 or 2 ounces of coffee daily.

The alimentation of anæmic malarial patients, is a most important consideration. They should be liberally supplied with carefully-selected and well-prepared animal food, to which such vegetables and fruits may be added as are regarded suitable to their condition. Digestion may be aided by acid solutions of pepsin, or by mineral acids, diluted in some bitter infusion. The list of promoters of digestion is incomplete if we omit alcoholic drinks, or, for many patients, coffee and tea. A good prescription is the following:

777. ℞. Tinct. cinchonæ comp., ℥ iv.
Dessertspoonful, in water, after each meal.

Whenever considered indicated, from 5 to 8 drops of nitro-muriatic acid may be added to each dose. Alcohol may also be given, in the form of wine or beer.

In violent forms of *congestive chill*, or *algid pernicious malarial fever*, Dr. Bemiss states that opium, chloroform, belladonna, chloral hydrate, and bromide of potash, prove more or less valuable, according to the idiosyncrasy of the patient, or the circumstances under which they were used. Opium is the most valuable of the agents, and may be combined with other drugs, as an adjuvant. It is better to use it in moderate doses, and repeat these at short intervals. Twenty drops of

laudanum, with ½ a teaspoonful of chloroform, is an efficient prescription. One-sixth of a grain of morphia, with 1/40 of a grain of atropia, may be injected subcutaneously. Nitrite of amyl is highly recommended. These remedies may be used at any stage of the chill, without fear of prejudicing the subsequent career of the case.

PROF. GREENSVILLE DOWELL, M. D., TEXAS.

During the chill, put the patient to bed, and keep the skin warm with sinapisms to the stomach, hot bricks or bottles to the feet and hands, blanketing, etc. Little else can be done.

During the fever, give cold water freely, and small quantities of sweet spirits of nitre and tincture of aconite. If the pain in the head is severe, a mercurial is indicated:

778. ℞. Hydrarg. chloridi mitis,
Extracti taraxaci,
Pulveris rhei, āā gr. xij. M.
Make six pills. Give three at once, and the other three in three hours.

This combination usually acts well, without an additional laxative. About six hours before the next chill, he prescribes:

779. ℞. Quiniæ sulphatis,
Extracti sarsaparillæ, āā gr. xij. M.
Make six pills. One every hour, until all are taken.

If the patient is not seen until an hour or two before the expected chill, the whole amount should be given at once. Where there is a tendency to dropical effusion and enlarged spleen, he prescribes:

780. ℞. Quiniæ sulphatis,
Ferri lactatis, āā gr. xij.
Ext. digitalis, gr. iij. M.
Make six pills. One every hour.

In cases of long standing, the following combination hardly ever fails to break up the chills:

781. ℞. Quiniæ sulphatis, ℥j.
Acidi arseniosi, gr. ij.
Extracti sarsaparillæ, ℥ss. M.
Make thirty pills. One every two hours, until five are taken each day, continuing, daily, until all are taken.

If required, after ten days of rest, these pills may be repeated. When the tongue is foul, and covered with white fur, the quinine should be combined with a stimulant, as:

782. ℞. Quiniæ sulphatis, gr. xviij.
Olei piperis nigri, gtt. iij.
Extracti sarsaparillæ, gr. xij. M.
Make six pills. One every hour.

Piperine may be used instead of the oil.

DR. A. R. HALL, INDIA.

The use of *emetics*, in intermittent fever, should not be neglected. Often, the anti-periodic will not act until the stomach is thus emptied. Dr. HALL also states (*The Practitioner*, May, 1875,) that, in India, it is customary to give an emetic at the commencement of the cold stage, when shivering first begins. *Sulphate of zinc* (gr. xxx), followed by copious draughts of hot water—say three or four pints, if the patient can be induced to swallow them—will generally induce free vomiting, and cut short the paroxysm at once. *Ipecacuanha* may also be employed, but the depression it leaves behind it is much greater than the zinc.

DR. J. B. SCRIVEN, LAHORE, INDIA.

This English surgeon reports very favorably of the *nitric-acid bath*, in malarial disorders. (*Lancet*, November, 1876.) He has used it with the best effect, in a vast number of cases. For children, it is an extremely pleasant remedy, though it often produces a slight irritation of the skin. They generally sleep soundly after it, and rapidly improve in health. It is always necessary to continue the baths daily for at least a fortnight—often for a month or six weeks. With adults, of course, it is less manageable, but not less efficacious.

As pure nitric acid is very expensive, it may be well to add that he has found the impure acid, which is very cheap, and readily procurable, quite good enough for the acid bath. It contains a little hydrochloric acid and iron. A wooden tub should, of course, be used in preference to a metal one, or, in the absence of this, an earthen vessel.

PROF. M'LEAN, M. D., INDIA.

This distinguished authority speaks in the highest terms of *Warburg's tincture*. His words are:

"I have treated remittent fevers of every degree of severity, contracted in the jungles of the Deccan and Mysore, at the base of mountain ranges in India, on the Coromandel Coast, in the pestilential highlands of the northern division of the Madras Presidency, on the

malarial rivers of China, and in men brought to Netley Hospital from the swamps of the Gold Coast, and I affirm that I have never seen quinine, when given alone, act in the manner characteristic of this tincture. And, although I yield to no one in my high opinion of the inestimable value of quinine, I have never seen a single dose of it, given alone, to the extent of 9½ grains, suffice to arrest an exacerbation of remittent fever, much less prevent its occurrence, while nothing is more common than to see the same quantity of the alkaloid in Warburg's tincture bring about similar results."

The following is the formula, as made known by Professor McLean:

783.	℞.	Aloës (socotr.,)		℔.j.
		Rad. rhei (East India,)		
		Sem. angelicæ,		
	a.	Confect. damocratis,	āā	℥iv.
		Rad. helenii (s. enulæ,)		
		Croci sativi,		
		Sem. fœnicul.,		
	b.	Cret. præparat.,	āā	℥ij.
		Rad. gentianæ,		
		Rad. zedoariæ,		
		Pip. cubeb.,		
		Myrrh. elect.,		
		Camphoræ,		
	c.	Bolet. laricis,	āā	℥j.

The above ingredients are to be digested with 500 oz. proof spirit in water-bath for twelve hours; then expressed and 10 ounces of disulphate of quinine added; the mixture to be replaced into the water-bath till all the quinine be dissolved. The liquor, when cool, is to be filtered, and is then fit for use.

a. This confection, which consists of an immense variety of aromatic substances, was once officinal, and is to be found in the London Pharmacopœia, 1746.

b. Dr. Warburg states that this ingredient was added to correct the otherwise extremely acrid taste of the tincture. Many other substances were tried, but none answered so well as prepared chalk.

c. This is the Polyporus laricis (P. officinalis, Boletus purgans, or larch-agaric,) "formerly," says Pereira, "used as a drastic purgative, and still kept by the herbalist."

The tincture is of a deep brown color, has an aromatic and slightly terebinthinate odor, and an intensely bitter and warm aromatic taste; a noteworthy point about it is that there is nothing spirituous in either taste or smell, and it seems as if the alcohol employed in its manufac-

ture were entirely saturated, and, so to speak, extinguished, by the substances taken up. The tincture evaporates readily, leaving a copious brown residue.

DR. J. MILNER FOTHERGILL, LONDON.

The great remedy in malarial attacks is *quinine*. It is best given in an acid solution. The following is an agreeable dose:

784. ℞. Quiniæ sulphatis, gr. x.
Acidi sulphurici diluti, ♏x.
Syrupi aurant., f.℥ij.
Aquam, ad f.℥j. M.
This amount three times a day.

In some cases where the quinine seems powerless to break up the chill, the administration of an emetic each morning brings the disease at once under the control of the drug.

Some patients manifest a marked intolerance of quinine, especially those who have resided in the tropics. In such patients, arsenic, strychnine, berberin and the eucalyptus must be resorted to.

The following combination is highly extolled by a writer in the *American Medical Bi-weekly*, March, 1877, in order to prevent the return of the chills after they have been broken by quinine:

785. ℞. Quiniæ sulphatis, ℥ij.
Tinct. ferri chloridi, f.℥ij.
Liq. potassii arsenitis, f.℥iss.
Tinct. opii, f.℥ss.
Strychniæ sulphatis, gr. ij.
Alcoholis, f.℥viij.
Aquæ, f.℥xxiv. M.
One tablespoonful three times daily.

An experienced practitioner says of this prescription that when administered after the liver has been acted on by a mercurial, it will cure any case of enlarged spleen or chills, if persisted in.

JOHN HERBERT CLAIBORNE, M. D., VIRGINIA.

786. ℞. Hydrargyri chloridi mitis,
Pulveris ipecacuanhæ et opii, āā gr. iv.
Quiniæ sulphatis, gr. xvj. M.
For four pills. Two to be given at bedtime, and two the following morning.

This is Dr. CLAIBORNE'S usual first prescription in quotidian intermittent and remittent fever, and it rarely fails.

C. W. FRISBIE, M. D., EAST SPRINGFIELD, N. Y.

There are some cases of intermittent fever which will not yield to quinine alone, when the following pill answers a nice purpose:

787. ℞. Quiniæ sulphatis, ℥j.
Zinci sulphatis, ℥ss.
Capsici,
Pilulæ hydrargyri, āā ℈j. M.
Divide into sixty pills.

In order to get the best effect from the above pill, commence with six daily, and reduce one each day.

PROF. FELIX DE WILLEBRAND, FINLAND.

Prof. DE WILLEBRAND believes that malarial fever can be combated by other specifics besides cinchona, and that *iodine* is one of them. He directs:

788. ℞. Iodinii, ℥j.
Potassii iodidi, ℥ij.
Aquæ distillatæ, f.℥iss. M.
Five drops in a small glass of water every two hours during the day.

Various physicians have lately extolled *chloroform* in obstinate chills:

789. ℞. Chloroformi,
Tincturæ cinchonæ, āā f.℥j. M.
One or two teaspoonfuls in water hourly, for four hours preceding the expected chill.

For breaking up chronic chills, the following combination has been highly praised by Dr. W. O'DANIEL, of Georgia, (*Atlanta Medical and Surgical Journal*, February, 1872):

790. ℞. Quiniæ sulphatis, ℥ij.
Ferri redacti, ℥iss.
Extr. aconiti, gr. xxx.
Morphiæ sulphatis,
Strychniæ sulphatis,
Acidi arseniosi, āā gr. iij. M.
Make sixty pills. One after breakfast and one after supper.

PROF. HARVEY L. BYRD, M. D., BALTIMORE.

In the treatment of that much-dreaded and often rapidly fatal condition, the "Congestive Chill," Prof. BYRD knows nothing of equal value to *chloroform* and *opium*, used as follows:

791. ℞. Chloroformi, q. s.
Inhale to anæsthesia, or to the restoration of the circulation in the extremities.

The doctor often prescribes inhalation of chloroform to a limited extent, to mitigate or curtail the *cold stage* in intermittent fevers.

Or:

792. ℞. Pulveris opii, gr. ij.
Pulveris capsici, ℈ j. M.
Make powders. One powder every hour, in severe cases, until the re-establishment of the circulation.

He is accustomed to give between the powders 10 to 15 drops of aromatic sulphuric acid, in a little water.

When reaction of the circulation is established in "congestive chill," the case should be treated in the usual manner.

DR. BENJAMIN LEE, PHILADELPHIA.

This practitioner recommends a full dose of quinine about an hour before the chill, and half an hour before it the following:

793. ℞. Chloral hydratis, ℈ j.
Aquæ camphoræ, ℥ j. M.
For one dose.

794. ℞. Quiniæ sulphatis,
Ferri redacti, āā ℈ j.
Acidi arseniosi, gr. ij.
Piperinæ, ℈ iss. M.
Make twenty pills. One three or four times a day. A favorite prescription, in obstinate chills, with some Southern physicians.

THE HYPODERMIC USE OF QUININE IN INTERMITTENT.

The subcutaneous injection of quinine in malarious fevers has been frequently tested at home and abroad, the efficacy of the drug in controlling fever, and the saving effected in consequence of the smaller quantity required, being sufficiently important to fully justify the share of attention which the subject has received. When rapid action is called for, or when, from irritability of the stomach, idiosyncratic or symptomatic, quinine is not well borne; or, again, when its exhibition *per viam naturalem* is resisted, the hypodermic injection of the drug may be advisable.

By this plan, there is a great saving in the quantity used, the cases being usually conducted to a satisfactory conclusion, so far as fever is

concerned, with a very moderate expenditure of quinine, say 3 grains or so. On the double ground of checking the fever and economy in the consumption of the drug, this mode of treatment would seem to be superior to the old method; but, unfortunately, a drawback presents itself in inflammation at the point of insertion of the syringe. This may be avoided, to some extent, by a careful solution and administration.

Surgeon Major GEORGE Y. HUNTER, (*Lancet*, March, 1876,) of Bombay, uses:

795. ℞. Quiniæ sulphatis, gr. lxxx.
Acidi citrici, gr. ccc.
Aquæ destillatæ, f.℥j. M.
Dissolve with the aid of heat. ♏vj contain one grain of quinine.

The formula of Dr. LEORUST, of Bremen (which is recommended by Dr. AUSTIN FLINT), is:

796. ℞. Quiniæ sulphatis, gr. xxxiij.
Acidi sulphurici, gtt. xj.
Aquæ destillatæ, f.℥j. M.
Mix the acid and water, and gradually add the quinine, stirring with a glass rod; if the solution is not clear, it may require 1, possibly 2 drops more of the acid. Filter through paper, and it is ready for use. Ten *drops* of this mixture are equivalent to 15 *minims*, which contain 1 grain of quinine. One grain, hypodermically, is equivalent to 3 or 4 by the mouth.

As regards the best place for insertion, it is stated that the region of the collar bones is the most preferable. Any spot will do that is at all suitable for hypodermic injections, but when it is inserted where the muscles are in constant use just beneath the skin and fascia, it will be apt to occasion soreness and swelling. Abscesses are rare when the solution is kept free from particles and sediment. If care is not taken, the instrument used may be spoiled by the acid acting on the piston and other parts; to avoid this, it should be washed after using, first in clear water, then in a solution of soda (a teaspoonful in a glass of water), then in clear water again. Ether, perhaps, will answer for the same purpose, but is not always convenient.

There is considerable pain on forcing out the solution, for the acid is irritating to the tissues, and there are frequently hard, indurated spots, where the fluid is forced out, lasting a few weeks, or even months, but they always gradually disappear.

Dr. J. M. FOTHERGILL recommends as not liable to cause ulceration:

797. ℞. Quiniæ sulphatis, gr. x.
Acidi sulphurici diluti, ♏x.
Aquæ destillatæ, gtt. c. M.

The hypodermic method does not produce ringing in the ears, deafness, or other unpleasant effects of quinine taken by the mouth. It ought, as a rule, to be used only in those instances in which the ordinary method is inapplicable, as the following: 1st. Those in which quinine by the mouth has failed to stop the fever. 2d. Those in which there is great irritability of stomach or great disgust for the remedy. 3d. Those in which the fever, though controlled by quinine in the ordinary method, yet requires large and repeated doses. 4th. Those in which the effect on the head or nervous irritability produced by the drug is distressing. 5th. Cases in which death seems to be imminent, and in which it is necessary to produce a decided and rapid effect upon the fever. The following formula, containing gr. iv to f. ʒ j, is an appropriate one:

798. ℞. Quiniæ sulphatis, gr. xxxij.
Alcoholis diluti, f. ʒ vijss.
Aquæ ammoniæ, f. ʒ ss. M.

Dr. LENTE'S formula is:

799. ℞. Quiniæ sulphatis, gr. l.
Acidi sulph. diluti, ♏c.
Acidi carbolici liq., ♏v.
Aquæ, f. ℥ j. M.
Dissolve the quinine by the aid of heat, and, after filtration, add the carbolic acid.

All acid solutions, however, cause considerable pain, and it is probably better to dissolve the pure alkaloid quinia in ether.

Prof. W. BERNATZIK recommends:

800. ℞. Quiniæ, gr. vij.
Etheris sulphurici, ♏xv. M.

The alkaloid can be obtained by precipitation from a solution of the sulphate by ammonia.

THE TREATMENT OF ENLARGED SPLEEN OR AGUE CAKE.

According to some authorities, *mercury*, in any form, is contra-indicated when malarial enlargement of the spleen exists.

The *hyposulphite of soda* is recommended by Dr. THOMAS HILL, of Missouri. (*Louisville Medical and Surgical Journal*, 1872.)

801. ℞. Quiniæ sulphatis, gr. ix.
Sodii hyposulphitis, gr. xvj.
Acidi sulph. aromat., gtt. vj.
Aquæ, f.℥j. M.

A teaspoonful every two hours to a child. Ten grains of the soda, thrice daily, may be given to an adult.

In the enlarged spleen, often associated with leucocythemia, which so frequently follows malarial disease, the *iodide of ammonium*, gr. v three times a day, with inunctions of the red iodide of mercury, has been found efficient. Dr. Da Costa prefers, however, the treatment by the hypodermic administration of *ergotine*, gr. iij–v daily, which has certainly produced excellent results. Dr. J. B. C. Gazzo, of Louisiana (*Medical and Surgical Reporter*, March, 1877,) reports favorably of throwing the injection into the tissues of the spleen itself. He uses:

802. ℞. Fld. extr. ergotæ ether., f.℥ij.
Glycerinæ, f.℥j. M.

This solution is injected into the spleen, two syringefuls at once, and repeated after twenty-four hours. The more deeply the needle is driven the less is the sensibility. Constipation must be avoided.

Professor Mosler, of Switzerland, has also employed parenchymatous injections to reduce the spleen. He employed *carbolic acid* in a two per cent. solution, and *liquor potassii arsenitis*, one part to ten of distilled water. The former caused so much pain that he did not continue it; the latter, however, was repeated a number of times, and brought about a very decided diminution of the organ. (Eulenburg, *Die Hypodermatische Injection*, Berlin, 1875.)

According to Dr. R. Williams the *bromide of potassium* has remarkable powers in the reduction of splenic hypertrophy. It is given internally, in full doses.

Dr. R. Bartholow believes that small doses of the *iodide of ammonium*, combined with arsenic, will reduce an enlarged spleen from malarial causes; as:

803. ℞. Ammonii iodidi, ℥j.
Liq. potassii arsenitis, f.℥ss.
Tincturæ calumbæ, f.℥ss.
Aquæ, f.℥iss. M.

A teaspoonful three times a day before meals. Paint the side with tinct. iodin. compos.

The *iodide of lead*, gr. 1/5 thrice daily, has testimony in its favor.

Very excellent results have been reported by Dr. L. McGuire, of California, from the use of *strychnia* or *nux vomica* (*Pacific Medical Journal*, Feb., 1873,) in ague cake. He gives $^1/_{16}$ of a grain of the former, or ℥xx of the tinct. nucis vomicæ, three times daily, combined, if need be, with iron or quinine.

In splenic and hepatic enlargement, Dr. Evers (*London Medical Record*, June, 1875,) reports the best results from the milky juice of the unripe fruit of the paw-paw, *carica papaya*. About a teaspoonful of the juice is mixed with sufficient sugar and divided into three boluses, one to be taken thrice daily. If it causes symptoms of gastric irritation, a little opium may be added. From twenty to twenty-five days is sufficient for a cure in nearly all cases of ague cake.

Of *external remedies*, blistering, painting with the compound tincture of iodine, inunction of ointment of biniodide of mercury, local abstraction of blood, etc., have each been lauded, but it is doubtful whether any of them is particularly useful. In Germany, the "dry-packing" method is employed at hydropathic establishments, and is said to reduce the spleen at a rapid rate without any other medication. It is certainly a simple and excellent derivative. B. Skorezewsky (*Wiener Med. Wochensch.*, 1876, No. 21,) believing the enlargement of the spleen in ague to be due in chief to a depressed action of the vasomotor nerves, employed *faradization* to diminish the size of the gland. He placed the electrodes, one over the anterior, the other over the posterior border of the spleen, and gradually increased the intensity of the current. Each sitting lasted fifteen to twenty minutes. The results he arrived at are as follows: The induction current produced a decided effect in reducing the size of the tumor; the first application was generally followed by the most marked alteration; the softer the spleen the more striking was the effect of the electricity. The spleen became hard on palpation, and the pain and uneasiness in the side were alleviated. The reduction of the gland, which was always best marked in the first few days of this treatment, was in rare cases noticed as early as twenty-four hours after its application. No relapses occurred in any recent case of ague with a swollen spleen in which faradization had been carried out. The benefits of the electrical treatment were essentially aided by the administration of quinine.

In India, *puncture* of the spleen with long, sharp stilets of considerable thickness, is a common and successful practice with native physi-

cians. It is not followed by bad results, and has been commended by some English physicians.

Dr. W. T. GADBURY, of Mississippi, speaks in the highest terms of a solution of *oxy-sulphate of iron*. He says that in an extensive practice for many years he has never had a case of malarial splenic hypertrophy which resisted it. (*Medical and Surgical Reporter*, April, 1866.)

804. R. Ferri sulphatis, ℥j.
Acidi nitrici, f.℥j. M.
Stir until it ceases to effervesce, then add
Aquæ, f.℥iv.
This is used as part of the following combination:

805. R. Liquoris oxy-sulphatis ferri, (above), f.℥iij.
Aquæ cinnamomi, f.℥viij.
Quiniæ sulphatis, ℥ss.
Potassii nitratis, ℥ijss. M.
One tablespoonful three or four times a day.

In obstinate cases, an iodine ointment or some other counter-irritant should be rubbed in over the enlarged viscus, and a roller worn round the body, so as to make compression on all the organs supplied by the cœliac axis. In cases of children suffering from lumbrici, it is well to commence with anthelmintics.

In the *Atlanta Medical and Surgical Journal*, 1876, Dr. D. L. PHARES, of Mississippi, highly recommends the root of the *Ceanothus Americanus* as a remedy for enlarged spleen. He exhibits it in form of a tincture, made by filling a bottle loosely with the root and root bark, pouring whiskey upon it, and allowing maceration to continue for a week. The dose is f. ℥ ss–j *ter die*. The same tincture is rubbed over the spleen twice daily.

RÉSUMÉ OF REMEDIES.

Aconitum. Dr. S. LOVING (*Ohio Med. Jour.*, Aug., 1878,) says that he knows of nothing which promotes the comfort of patients in the hot stage more than a combination of aconite and morphia, in small doses.

Alstonia. Several species of this Australian tree are used for their anti-periodic effects. Their value is moderate or doubtful.

Ammonii Carbazotas. It is stated by Dr. DUJARDIN-BEAUMETZ that this agent acts very efficaciously in intermittent fever. The daily dose is gr. ½–j, in pill form. Dr. SLANE, of Goalpara, India, finds carbazotate of ammonia to be a very efficient remedy. It does not increase the appetite, but like quinine, after a few doses, it produces tinnitus aurium and slight deafness. The urine becomes tinged of a deep orange color, and occasionally the skin and

conjunctiva acquire a jaundiced hue, but the discoloration soon disappears. It may be given in pill, with extract of gentian, and combination with a quarter of a grain of extract of nux vomica seems to increase its efficacy. Being perfectly soluble in water, it may be given in solution, but it has an intensely bitter taste. The largest quantity Dr. SLANE ever gave was eight grains in twelve hours. (*Indian Medical Gazette*, April, 1876.) It has also been favorably reported upon in this country, especially on the Pacific coast.

Ammonii Chloridum, in doses of ʒ ij daily, as an average, was once very popular in ague, and is still employed by some.

Amyl Nitrite. In intermittent fever, amyl has aborted the chill, but only shortens the latter stages; it may be given even after the algid stage has fairly set in. Some bold exhibitions have been tried, even to the extent of thirty drops, with good rather than bad effects, in this form of fever. The ordinary dose has been six drops.

Arsenicum undoubtedly stands second only to quinine in the treatment of malarial poisoning; its especial field is the chronic forms. It may usefully be combined with iron:

806. ℞. Pill. ferri carbonatis, ʒ j.
Acidi arseniosi, gr. j. M.
For twenty pills. One three times a day.

Or:

807. ℞. Quiniæ sulphatis, ℈ ij.
Ferri sulph. exsic., ℈ j.
Acidi arseniosi, gr. j. M.
For twenty pills. One three times a day.

When used alone, ten drops of Fowler's solution may be given three times a day after meals. The diet should be abundant and nourishing. (F. 794, 803.)

Atropia. Some writers state that, in the cold stage of intermittent or congestive fevers, atropia injected under the skin, will bring about reaction with more certainty than any other means commonly used in such cases. It will abort the chill, if applied at the onset, in most cases.

Berberin. This alkaloid, from the *Hydrastis Canadensis, Berberis vulgaris*, etc., is highly esteemed in chronic malarial poisoning.

Buxinæ Sulphas. The alkaloid of the *Buxus Sempervirens*, in doses of gr. xv, has achieved some reputation in Italy.

Camphora. A tablespoonful of the tincture of camphor, about the time the chill is expected, will occasionally prevent it.

Capsicum. Prof. WM. H. THOMPSON says that either capsicum, ginger, or other aromatics, combined with quinia, will diminish the amount required of the latter. "A good dose of capsicum combined with 20 grains of quinine, will act as well as 30 grains of quinine without the capsicum."

Carbolicum Acidum. This has rather disappointed expectations. It may be given in doses of gr. iv, in infusion of gentian, and no doubt it occasionally acts well. M. DÉCLAT, of Paris, has used it hypodermicaliy, with success, in obstinate cases. (*Comptes Rendus*, No. LXXV.)

Chloroformum, in doses of f.ʒ ss–j, in a small glass of milk, every two hours, about the time of the expected chill, will frequently abort it. (F. 791.)

Chinoidine. This is the *cheapest* of the cinchona alkaloids. From gr. xv–xx, daily, for five or six days, and then gradually reduced, will cure mild intermittents very satisfactorily.

Chloral Hydras has been highly commended by Dr. P. BAILEY, of South Carolina, (*Charleston Medical Journal and Review*, October, 1873,) and others. When the fever heat is intense, its refrigerant and calmative influence is undoubted; and while it quiets the nervous system, it rather promotes the secretions—in this particular, being far superior to the opiates. In the malarial fevers of children, with a tendency to convulsion, or when this unfortunate complication has supervened, it can scarcely be excelled. Although the first impression on the gastric surface is rather to excite emesis, nothing can be more demonstrable than its promptness in arresting the vomiting, in these fevers, when all other efforts have been fruitless.

808. ℞. Chloral hydratis, ʒ iss.
Potassii bicarbonatis, ℈ ij.
Spts. æth. nitrosi, f.ʒ ss.
Syrupi tolutani, f.ʒ ijss.
Aquæ, f.ʒ j. M.

A tablespoonful every hour or two.

Cimicifuga Racemosa. Dr. EDWARD R. MAYER, of Wilkesbarre, Pa., states that the tincture of cimicifuga, alone or combined with tincture of *kalenia*, is one of the most efficient remedies known for the malarious neuralgia of the first branch of the fifth pair, commonly called *brow ague.* (*Hints in Specific Medication*, 1876, p. 17.)

Cinchonia. A cheap and useful alkaloid, about half as strong as quinine. It has the great advantage that it can be rendered quite tasteless without impairing its efficiency. Dr. SAMUEL ASHHURST, of Philadelphia, combines it thus:

809. ℞. Cinchoniæ, gr. j.
Sacchari lactis, gr. iv.
Sodii bicarbonatis, gr. $\frac{1}{10}$. M.

This is readily miscible with water or milk, and has no other than a slightly sweetish taste, while it is very nearly or quite as efficient as quinia itself.

Cinchonidiæ Iodidium. Dr. VANSANT (*Am. Pract.*, 1879,) states that this salt, in malarial fevers, is more efficient and prompt than twice the weight of any of the alkaloids of cinchona, combined and administered as they usually are. The prescription usually given is as follows:

810. ℞. Cinchonidiæ sulph.,
Potassii iodidi,
Acidi citrici, āā grs. xxiij.
Aquæ destill., f.ʒ vi.

Dissolve the cinchonidia and acid in water, then add the iodide of potassium and agitate. Dose, a tablespoonful, in water, three or four times a day.

Cinchonidiæ Sulphas. This is a valuable alkaloid of the bark, and in all usual and milder cases, answers quite as well as quinine, and is cheaper. In congestive and pernicious forms, it is not so reliable, however. Dr. WHARTON SINKLER's formula is:

811. ℞. Cinchonidiæ sulphatis, gr. iv.
Acidi sulphurici aromat., ♏iv.
Aquæ, f.℥j. M.

This dose every four hours, beginning as early in the day as possible, until gr. vj have been taken. Continue the amount five or six days after the last chill, then reduce one dose every other day. (*Medical and Surgical Reporter*, February, 1874.) It is said to produce less nausea and less cinchonism than quinine.

Cornus Florida. The extract and tincture of dogwood are employed in the Southern States, as a substitute for quinine.

Eucalyptus Globulus. The celebrity attained by the eucalyptus as a curative agent in malarial disease, is doubtful. The tincture is recommended in f.℥j doses, three times daily; of the oil, f.℥jss may be given two or three hours before the expected attack.

Farina Maidis. A tablespoonful of corn meal in a glass of water, just before the chill, is a useful domestic remedy. A decoction of corn shucks or fodder is popular in the South.

Ferri Persulphatis Liquor. This has been successfully used in obstinate intermittents, in doses of gtt. viij–xvj, every four or six hours. Almost all the preparations of iron are valuable as tonics in prolonged malarial cases. The taste of the patient and the convenience of their administration, should be the guides in selecting from them.

Furfurine Nitrate. The nitrate of furfurine, obtained from bran, sawdust, and similar substances, has been recently brought forward as an energetic antiperiodic.

Gelsemium. Several writers have praised, very highly, the jasmine as an antiperiodic. The dose recommended by Professor WILLIAM W. MURRAY, of Baltimore, (*Medical and Surgical Reporter*, January, 1873), is ♏v of the tincture every hour, until it produces heaviness of the eyelids, dilated pupils or double vision, the same course to be pursued for four or five days successively. He adds that it is superior to quinia, in preventing the recurrence of the attacks.

Grindelia Squarrosa. The fluid extract of this plant has been used successfully in hypertrophied spleen. The dose is f.℥j four times a day.

Hydrastis. In obstinate recurring intermittents, Dr. EDWARD R. MAYER has found the following recipe more effective than quinia:

812. ℞. Hydrastiæ sulphatis,
Ammoniæ carbazotatis, āā gr. ½.

According to Dr. BARTHOLOW, "hydrastia ranks next to quinia as a remedy for intermittents."

Hydrocyanicum Acidum. "Peach leaf tea" is a popular remedy in intermittents in Maryland and Delaware. On this hint, Dr. JAMES H. PEABODY, of Omaha, has used with great success hydrocyanic acid. In chronic intermittents it

has served him when cinchona and its alkaloids have entirely failed. A favorite prescription is:

813.	℞.	Acidi hydrocyanici dil.,		gtt. xlviij.	
		Tr. cinchonæ comp.,			
		Tr. gentianæ comp.,			
		Pruni virginianæ syrupi,	āā	℥ ij.	M.

Two teaspoonfuls four times daily.

Iodinium. Recommended by Dr. DE WILLEBRAND as curative, (F. 788,) but its especial and great value is after the ague has been checked by quinine, to prevent its recurrence. For this purpose, tinct. iodinii, gtt. v–x, three times a day, in a spoonful of water, before meals, is said by Dr. JAMES Y. SHEARER, of Pennsylvania, (*Medical and Surgical Reporter*, January, 1874,) to surpass all other agents yet suggested. Nothing disguises the taste of iodine so well as sweet milk, ℥ j to gtt. x of the tincture.

Ipecacuanha. In both intermittents and remittents, accompanied by congestion of the portal circulation, ipecacuanha is often very serviceable. It is probably the most suitable emetic which can be administered at the outset of a malarial attack, when such an agent is called for, and where the consequent depression is not to be feared.

Leptandra Virginica. This is said to be an invaluable remedy to prevent the return of intermittents after they have been broken up by quinia. It is a favorite ingredient of secret remedies for this purpose, and should be combined with the cinchona alkaloid, and continued some weeks. (Dr. EDWARD R. MAYER, *Hints in Specific Medication*, 1876.)

Narcotine, in doses of gr. j–iij, possesses anti-periodic powers, and by some practitioners has been asserted to equal quinine.

Nitricum Acidum. In old and obstinate cases, says Dr. LYMAN, (*Chicago Medical Journal and Examiner*, December 7th, 1861,) we want to administer something powerfully oxidizing in character, to wash or cleanse the body of the remains of the disease. We should administer first a diuretic. The acetate or the citrate of potassa is useful if quinine alone has failed. But if they are not, a course of nitric acid may relieve for years.

Opium, in full dose, three hours before the expected chill, will frequently stop its appearance.

Morphia may nearly always be advantageously combined with quinine. Dr. MERIWETHER LEWIS, of Tennessee, lays down these aphorisms in the *American Journal of Medical Science*, July, 1878: 1st. The combination of an opiate with quinia insures an earlier and more complete cure of intermittent and remittent fevers, than quinia alone. 2d. Less quinia is required, and hence there is less cerebral disturbance; and, 3d. Any paroxysm of intermittent or remittent fever may be aborted by the use, at the proper time, of a *decided dose of morphia and quinia* with reasonable certainty.

Piper. In doses of gr. v–xx, pepper has been found of considerable value, especially for combining with quinia when the stomach is not susceptible to the latter's action.

Potassii Nitras. This has been highly praised. It is administered in doses of gr. x,

in brandy and water, or dry on the tongue. Dr. SAWYER, of St. Louis, states he has never failed to arrest with it an uncomplicated paroxysm of ague.

Quineti Sulphas, a salt that represents all the alkaloids, is recommended in doses of gr. x–xv, by Dr. HOLLIS. (*Brit. Med. Jour.*, May, 1879.)

Quiniæ Bromohydras. Professor GUBLER, of Paris, (*Journal de Thérapeutique,*) points out that the proportion of quinine in the neutral bromhydrate is more considerable than in its analogue, the neutral sulphate of quinine. It is also six times as soluble in water. Thus its greater solubility and richness in alcohol give it superior advantages for the purposes of hypodermic injection. The new compound also is alleged to offer the valuable combination of the properties, in part synergic, of quinine and of the bromated preparations. M. GUBLER orders about 1½ grains, in pill, not exceeding six grains daily, as an ordinary dose, and rarely, if ever, giving as much as 15 grains a day. It effects are those of quinine, producing ultimately headache, singing in the ears and deafness; or those of slight bromism, muscular languor, accompanied by a strong tendency to sleep. M. GUBLER has sometimes employed with success hypodermic injections of bromhydrate of quinine in a solution of the strength of $\frac{1}{10}$, in water slightly alcoholized. Notwithstanding the presence of a small proportion of alcohol, the bromhydrate of quinine, in subcutaneous injection, has always shown itself inoffensive to the tissues, which is contrary to that which occurs with sulphate of quinine. Dr. W. E. FORREST, of New York, has combined hydrobromic acid with sulphate of quinine, and finds the distressing symptoms of quininism are thus wholly avoided.

814. ℞. Quiniæ sulphatis, ℥j.
Acidi hydrobromici,
Aquæ, āā f.℥iss. M.

Two teaspoonfuls contain 5 grains of quinine.

The hydrobromic acid used must not be that usually sold, (Merck's,) but that prepared according to Dr. J. MILNER FOTHERGILL'S formula:

815. ℞. Potassii bromidi, ℥xj.
Aquæ, Oiv.

Dissolve, and add:

Acidi tartaraci, ℥xiij.

The hydrobromic acid remains in solution, and potassa bitartrate is precipitated.

M. LATOUR'S formula is:

816. ℞. Quiniæ sulphatis, gr. x.
Acid. sulph. diluti, ♏xx.
Aquæ, f.℥j.

To this, add

Potassii bromidi, gr. xx.

This forms a neutral bromohydrate.

Quiniæ Salicylas. The salicylate and carbolate of quinia have been recommended on theoretical grounds.

Quiniæ Sulphas. This is the standard remedy, the typical specific in all phases of malarial diseases. In regard to the *form* of its exhibition, the most active is in solution. Its bitter taste is best concealed by liquorice, glycyrrhizin, chocolate, tannic or malic acid. Sugar-coated pills and chocolate caramels, containing quinia, may readily be obtained. Frequently, a clear solution, free from turbidity, is a *desideratum*. With aromatic sulphuric acid, we get a passable solution, but the acid is often objectionable, if not absolutely contra-indicated. Dr. Isaac Smelt, Jr., (*N. Y. Medical Journal*, August, 1876,) finds that, in practice, the sweet spirits of nitre is all that is desired. One ounce of it will dissolve about 2 drachms of quinine, giving a transparent solution. The following is said to disguise the taste well:

817. ℞. Quiniæ sulphatis, ℈j.
Cocoæ, ʒj.
Syr. aurant. cort., f.ʒxx.

Triturate well the cocoa, after which add the quinine and orange peel. Mix thoroughly.

Sweetened hot tea, drawn strong, will almost entirely conceal the bitterness so much complained of. The tannic acid is the efficient agent, which may be utilized as follows:

818. ℞. Quiniæ sulphatis, gr. xxiv.
Syr. sarsap. comp., f.ʒiij.
Acidi tannici, gr. iij.
Olei menth. piper., gtt. v. M.

Milk, in the proportion of f.ʒj to gr. j of quinine, will conceal its taste tolerably.

In giving quinine to children, it is frequently better done by enema:

819. ℞. Quiniæ sulphatis, gr. ij–x.
Acidi tannici, gr. ij–vj.
Aquæ, f.ʒj. M.

For one injection. The tannin aids the retention.

Or the *endermic* method may be very successfully employed:

820. ℞. Quiniæ sulphatis, ʒss–j.
Alcoholis, f.ʒss.
Adipis, ʒvij.

Rub well into the skin. (Dr. Auguste Nonat.)

Often, the action of quinine is greatly aided by stimulant and aromatic adjuvants, as alcohol, ether, capsicum, pepper, ginger, etc. Dr. Fuller has found that when there is splenic enlargement, the addition of colocynth and rhubarb greatly increases the energy of the alkaloid.

Dr. Roberts Bartholow (*Prize Essay on the Use of Quinine*) lays down the rules: 1. Quinine is equally effective, whether administered in the interval or during the seizure. 2. Its maximum effect is five hours after taking; hence, it should be administered about this long before the expected paroxysm. 3. It is better to give the whole amount in a single dose, than in a succession of small doses. In ordinary intermittents, gr. x in the sweating stage, and the same quantity five hours before the time of the next paroxysm, is the most effective plan.

Some useful suggestions are made by Dr. AUGUSTE NONAT. (*Practitioner*, September, 1871.) The older the case, the larger the dose required; whenever the spleen is enlarged, a double dose is required; quartan fever requires a much larger dose than quotidian or tertian. The total time required to eradicate the disease will generally be three weeks; the first week, the maximum dose must be given daily; the second week, one-third less, and the third week, two-thirds less; even after this, small doses, from time to time, are needed.

Salicin was extensively used during the Civil War, by the Confederate surgeons, and has recently been revived; gr. xxx, three or four times a day, is an average dose. On account of its alterative effect on mucous surfaces, it is deemed particularly applicable in malarial hæmaturia.

Sodii Bisulphis. This has been employed with good effect. Dose, ℈ j in water, every two hours. It is only available in mild cases.

Sodii Chloridum. Dr. BROOKES recommends the following (*Zeitschrift für Praktische Medicin*, 1876, No. 33): Heat table salt in a pan until it turns brown; dissolve a tablespoonful in a glass of hot water; take the whole at one draught, on an empty stomach, the day after the chill, or, in the quotidian type, two hours after the fever. Avoid drinking water, and diet low. One such dose is usually enough. In doses of ʒ viij–x, in the apyrexia, it was recommended as far back as 1854, by Dr. J. C. HUTCHINSON, of New York.

Strychniæ Sulphas. In India, cases of intermittent have been successively treated with this agent alone. It is also freely used in this country, in numerous anti-periodic combinations. (F. 785, 790.)

Tela Araneæ. In the *Cincinnati Lancet and Observer*, 1877, Dr. L. M. JONES reports that having failed in treating a case of chronic intermittent, he adopted the suggestion of Dr. JACKSON, in the U. S. Dispensatory, to use spider-web. A bunch of spider-web, collected from a dark cellar, (as it is the web of a species of spider which inhabits dark places that possesses medicinal properties,) about the size of a large hulled walnut, was put into 4 ounces of whiskey and allowed to macerate forty-eight hours, when it was filtered. The patient took a teaspoonful four hours before the expected chill, and at hourly intervals until she had taken four doses, and then took a like quantity before each meal and at bed-time, until all was taken. Although the anticipated chill came, it was very light, and was the last one experienced up to the time of the report, a period of four months.

MILK SICKNESS.

DR. J. C. PATTON, INDIANA.

This practitioner describes (*Indiana Journal of Medicine*, August, 1875,) a treatment which, he says, "almost deserves the character of a specific:"

821. R. Infus. sennæ foliarum, Oj.
Magnesiæ sulphatis, ℥ xij. M.
Of this give from one to two ounces, which will be vomited; then immediately give a second dose, and so continue until it is retained.

Large injections of cold whiskey and water should be thrown well up the rectum. For milder cases, sulphur, in free doses, until the bowels are moved, followed by diffusible stimulants, is sufficient.

DR. W. H. PHILLIPS, OHIO.

This writer, in an essay on this disease, published in 1877, throws doubt on the value of alcohol in its treatment. He says the practical difficulty is that a large proportion of patients cannot tolerate it. The plain indications of treatment are to care for and sustain, by every proper means, the strength of the patient while he is passing through the disease. Dr. P. is not in favor of any plan of treatment that will create active perturbations of the system, as they inwardly do mischief; the means which will allay the nausea, and procure quietude and rest, are always the most satisfactory. Patients treated upon a severely expectant method, recovered in quite as short a time, and with less discomfort than those treated by the more heroic methods.

According to his experience, *sulphate of strychnia* accomplishes more good than any other remedy. By its use he has been able, in some measure, to overcome the atonic condition of the muscles, especially the muscular coats of the stomach and bowels. He also thinks that by virtue of its action upon the vaso-motor nerve centres, it is capable of improving the circulation, and in that manner invigorating the functionary power of the system.

He is in the habit of using from $^1/_{24}$ to $^1/_{16}$ of a grain of strychnine, every four to six hours as indicated, with the results above stated. As a palliative, some agreeable effervescent mixture is usually well borne,

as the citrate of magnesia, or the granulated nitrate of cerium, with a little fruit syrup and fresh water. This serves to allay the thirst and nausea. He has also used the bitartrate of potassa, with the view of increasing the secretion of urine, and thus saving the patient from danger arising from retention of effete matter, with very satisfactory results in some cases.

PURPURA HÆMORRHAGICA.

DR. THOMAS HAWKES TANNER.

This writer says the treatment should consist in the exhibition of full doses of sulphate of soda with sulphuric acid, or of castor oil, until the bowels are thoroughly cleared. Then quinine, iron, the mineral acids, and arsenic, as in the following combination :

822. ℞. Quiniæ sulphatis, gr. ix.
Acidi phosphorici diluti,
Tincturæ ferri chloridi, āā f. ʒ iss.
Liquoris arsenici hydrochlorici, ♏xv–xl.
Syrupi zingiberis, f. ʒ vj.
Infusum quassiæ, ad f. ℥ viij. M.
One-sixth part directly after breakfast, dinner and supper.

The patient should be given nourishing diet, fresh fruit or vegetables, and a fair allowance of malt liquor or wine. The oil of turpentine, or gallic and aromatic sulphuric acids, where there is internal hemorrhage, are often quite effective.

PROF. N. S. DAVIS, CHICAGO.

This experienced observer says that he places more reliance on *digitalis* and *ergot*, internally, aided by the solution of the persulphate of iron applied to the bleeding surfaces, than on any other remedies. During a period of actual bleeding, the remedies should be given in pretty full and frequent doses, aided by entire rest and mild diet. After the bleeding ceases, he continues the same remedies, in smaller doses, three times a day, from three to six months, interrupting them occasionally for three or four days at a time. Careful attention should also be given to keeping the digestive and excretory organs in good order, and there should not be too much haste in promoting the reformation of blood by the use of iron and rich food.

RÉSUMÉ OF REMEDIES.

Ergot should be combined with tonics, and will be found of value.

Ferrum is always useful. The following prescription is a good one:

823.	℞.	Ferri sulphatis exsiccatæ,	℈ ij.
		Quiniæ sulphatis,	℈ j.
		Strychniæ sulphatis,	gr. ss.

Make twenty pills; one thrice daily.

Sulphuricum Acidum sometimes acts happily in purpura.

Terebinthinæ Oleum is an important agent in the treatment of purpura. It should be given in emulsions.

RELAPSING FEVER.

CITY HOSPITAL, RIGA.

In the decade 1865–75, two thousand cases of relapsing fever were treated in this hospital. The therapeutics adopted are described in the *Deutsches Archiv für Klinische Medicin*, Bd. XIX, (March, 1877,) by Dr. X. GIRGENSOHN. After frequent attempts to abort or shorten the disease by quinine, aqua chlorinii, acids, etc., all of which failed, a pure symptomatic plan was adopted. During the febrile stadia, acids, in mucilaginous decoctions, were exhibited, and in the intermissions, some preparation of iron. Wine and brandy, in moderate quantities, were given throughout, and also a simple but nourishing diet, consisting of milk, bouillon, eggs, flesh, etc. For the vomiting, ice pills were found most efficacious, as also subnitrate of bismuth, in doses of gr. iij–v. For the attacks of diarrhœa—which, however, often proved a favorable indication—opium was at first used, but later, usually, tannin, gr. iij–v. For the profuse hemorrhage—sometimes of decided gravity—ice water injections, ice to the breast and back of the neck, and large hypodermic injections of ergot, were occasionally called for. The muscular pains which the patients complained of, especially during convalescence, were treated with the warm bath, or rubbing with a mixture of oil and chloroform. The severe pain occasionally felt in the splenic region, could usually be allayed with a bladder of ice to the part. Morphia injections were rarely employed. The delirium was usually mild, and if not, was easily controlled by the ice bladder and chloral. The last-mentioned drug was also very satisfactory in overcoming insomnia, in doses of gr. v–xiv. The

icterus and gastric symptoms rarely called for special attention. The parotitis and abscesses occurring during convalescence, demanded a prompt use of the knife to give exit to the pus. The neuralgia which sometimes remained after the disease, yielded most rapidly to a judicious application of electricity

DR. R. MURCHISON, ENGLAND.

This author states his opinion that we may prevent the occurrence of uræmic intoxication, which is one of the main causes of death in uncomplicated cases, by keeping up the action of the kidneys from the first. He prescribes:

824.	℞.	Spiritûs ætheris nitrici dulcis,	f.℥ ij.	
		Acidi nitrici diluti,	f.℥ j.	
		Syrupi simplicis,	f.℥ j.	
		Decocti hordei,	Oij.	M.

To be taken in the twenty-four hours. Should symptoms of jaundice manifest themselves, hydrochloric acid should be substituted for the nitric.

DR. HENRY HARTSHORNE, PHILADELPHIA.

Relapsing fever was very prevalent in Philadelphia and New York, in 1870, with a mortality of a little over fifteen per cent. of the cases. From the experience of this epidemic, Dr. H. recommends, after a mild cathartic at the beginning—and if headache be severe—a few cups or leeches to the back of the neck. Cooling diaphoretics may be given, as solution of citrate of potash or acetate of ammonia. After the crisis, which occurs from the fifth to the seventh or eighth day, quinine may be given in moderate doses, at least until the relapse. Many persons will require support, especially in the third week, by beef tea, alcoholic stimulants, etc. It has been proved that any amount of quinine will not prevent the relapse, and it is therefore useless to administer it with this object in view.

ACUTE RHEUMATISM.

SALICIN AND SALICYLIC ACID TREATMENT.

DR. T. J. MACLAGAN, DUBLIN.

This author (*Lancet*, March, 1876,) praises the action of *salicin* in acute rheumatism. Relief is afforded in forty-eight hours or less.

825. ℞. Salicin, gr. xv.
This amount in water every three hours.

Later observers corroborate this statement; gr. x, every two hours, is preferred by some.

Decoction of the inner bark of the willow (*salix fragilis*, etc.,) which contains the active principle, *salicin*, has also been used with excellent results.

Salicylic acid, now produced by synthesis, was formerly derived from salicin. Dr. L. TRAUBE, of Berlin, and many following him, give it high praise in acute and subacute rheumatism. It disperses the fever and soothes the pain. Grains xv to xxx, in powder, in a capsule, may be given every hour. Or:

826. ℞. Acidi salicylici, ℥ ss.
Sodii boratis, ʒ j.
Glycerinæ, f. ʒ j.
Aquæ menthæ, f. ℥ v. M.
A tablespoonful as occasion may require.

The borax makes the acid more soluble.

Dr. STRICKER, of Berlin, in a *résumé* of his experience with salicylic acid, says:

1. If the salicylic acid act thoroughly in the manner expected of it, there should be, during the treatment of articular rheumatism by a certain quantity given internally, no return of the disease in a hitherto unaffected joint, nor any secondary inflammation of the endocardium or other serous membranes.

2. In order to prevent a relapse it is necessary to continue the use of the salicylic acid in small doses for some days after the end of the principal treatment.

3. Salicylic acid is of doubtful use in chronic articular rheumatism.

4. It is not likely to be useful in gonorrhœal and dysenteric rheumatism, or in septæmic inflammation of the joints.

The following is an eligible formula, which forms the salicylate of soda:

827. ℞. Acidi salicylici, ʒj.
Spts. eth. nit., f.ʒ vj.
Sodii bicarb., gr. lxx.
Spts. lavand. comp., f.ʒ ij.
Aquæ, f.ʒ ij.
Syr. aurantii corticis, q. s. ad ℥ vj. M.
One teaspoonful every three or four hours.

In preparing this prescription, mix the acid and the spirits of ether in a bottle, then add the soda, and afterward the water, gradually, and after effervescence ceases, the spirits of lavender and syrup. This prescription agrees well with the stomach, and is pleasant to take.

In large doses of salicylic acid, there is danger of producing severe cerebral symptoms, sick stomach and rapid collapse. Dr. E. PRIDEAUX (*Practitioner*, Sept., 1878,) has found this can be obviated by giving salicylate of ammonia. He prefers to produce a combination of salicylate of soda and ammonia, as in the following prescription:

828. ℞. Sodii bicarb.,
Ammon. carb., āā gr. v.
Acid. salicylic., gr. xx.
Aquam, ad ℥j. M.
For one dose.

This avoids successfully the unpleasant symptoms alluded to.

LEMON OR LIME JUICE TREATMENT.

One of the recent advocates of this practice,

DR. A. H. CHANDLER, NEW BRUNSWICK,

Gives the following as the details of his plan, (*Canada Lancet*, Nov., 1877): Without regard to the condition of the bowels, unless previously much constipated, he usually begins with at least 10 ounces of lime juice, increasing rapidly up to 18 or 24, in the twenty-four hours —from ½ an ounce to an ounce or more every hour, with not less than double or treble the quantity of cold, soft water—usually diluted and sweetened, however, to the patient's taste. Very often, on the second day, the amendment is decided, and the disease, in acute cases more particularly, sthenic or asthenic, generally subsides on the fourth or

fifth day of treatment. One grain of opium is usually given, with or without lead, and tannin, night and morning, in order to restrain the bowels, which the juice has a tendency to relax. The first effects of such heavy doses is the rapid diminution of joint swelling, and diminished perspiration, together with steady falling of pulse, the latter often quite slow with a slight tendency to syncope. The majority of the cases require quinine, and supporting food about the sixth or seventh day, when convalescence advances rapidly.

THE ALKALINE TREATMENT.

DR. H. W. FULLER, LONDON.

The treatment of rheumatic fever adopted by Dr. FULLER, at St. George's Hospital, is *essentially alkaline*, and consists not only in administering salines and small doses of alkalies, but in pushing alkalies, as rapidly as possible, to the point of producing alkalinity of the secretions. He usually prescribes:

829.	℞.	Sodii bicarbonatis,	ʒ iss.	
		Potassii acetatis,	ʒ ss.	
		Liquoris ammoniæ acetatis,	f. ʒ iij.	
		Aquæ,	f. ℥ iss.	M.

For one dose. To be taken in a state of effervescence, in combination with

830.	℞.	Acidi citrici,	ʒ ss.	
		Aquæ,	f. ℥ ij.	M.

The quantity of the fluid not only takes off from the nauseous quality of the medicine, but promotes its absorption, and thereby facilitates its action. As soon as the urine manifests an alkaline re-action, the dose is repeated three times only in twenty-four hours; and on the following day, if the urine still remains alkaline, twice only. After three days, two doses only of this mixture in twenty-four hours usually suffice to keep the urine alkaline; and then Dr. FULLER adds 2 grains of quinine to each dose; or, if quinine be not well borne, he substitutes:

831.	℞.	Sodii bicarbonatis,			
		Potassii acetatis,	āā	ʒ ss.	
		Tincturæ cinchonæ,		f. ʒ iss.	
		Decocti cinchonæ flavæ,		f. ℥ iss.	M.

For one dose.

Day by day, as the tongue cleans, and the other symptoms subside, the quantity of alkali is cautiously diminished, until a simple quinine

draught is taken; but the condition of the urine is constantly watched, with a view to the immediate administration of a small quantity of alkali, should the least acidity call for its use. The diet is another point on which Dr. FULLER lays particular stress. He gives beef tea or broth throughout, and, if stimulants appear to be needed, does not object to their being administered cautiously; but he withholds solid food until the tongue is quite clean, and has often proved to his class in the wards that a too early recourse to meat will induce a relapse, and prevent convalescence.

Under this treatment, Dr. FULLER says the pains commonly subside in five or six days, and the patients are seldom ten days in bed. Moreover, the heart may be regarded as safe from attack; for in two instances only, in the whole course of his hospital experience, has inflammation, either of the endocardium or pericardium, arisen after the patient has been twenty-four hours under treatment.

DR. FINCHAW, WESTMINSTER HOSPITAL, LONDON.

832. R. Potassii bicarbonatis, ℥ j.
Potassii nitratis, ℥ ij.
Liquoris ammoniæ acetatis,
Aquæ, āā f.℥ iij. M.

A tablespoonful, in water, every four hours, with a full opiate at night, if the pain be severe.

He does not think it advisable to continue the alkaline treatment for any lengthened period; but to give quinine, in doses of 2 or 3 grains, every six hours, when the urgent symptoms begin to yield, especially if the sweating is over-profuse. He believes that, by giving quinine earlier than is generally the custom, convalescence is less tedious, and there is less chance of relapse. As regards cardiac complications, if pericarditis supervene, and there be sharp, catching pain, he applies a few leeches, followed by linseed poultices; should the pain be slight or absent, he omits the leeches. In all cases he applies, subsequently, one or more blisters. As to medicines, he continues the alkalies, giving at the same time a grain of opium every four or six hours. Should endocarditis manifest itself, he contents himself with the alkaline treatment, as he cannot satisfy himself that local remedies have any effect.

DR. F. J. FARRE, LONDON.

Dr. FARRE'S ordinary mode of treating acute rheumatism, is the "alkaline." He usually commences with three 5-grain doses of calomel, followed by:

833. ℞. Magnesiæ sulphatis, ℥ ij.
Tincturæ sennæ, f. ℥ ij.
Spiritûs ammoniæ aromatici, ♏ xx.
Infusi sennæ compositi, f. ℨ iss. M.
For one dose.

He repeats this daily till the evacuations are natural. At the same time, he gives the bicarbonate or acetate of potash, in 20 or 30-grain doses, every four or six hours, according to the severity of the attack, generally using the former, but preferring the latter when there is synovial effusion.

When there is little or no perspiration, or when the heart is much excited, he adds 10 or 15 grains of nitrate of potash. He not unfrequently, also, gives 1 grain of opium every night. For local treatment, especially of the smaller joints, he relies chiefly on the tincture or liniment of iodine, using the tincture for women and children, the liniment for the robust; one or the other of these is used in almost every case, and with nearly certain relief. When, however, there is synovial effusion, Dr. FARRE uses either mustard or cantharides plaster. Mustard is always useful, especially when applied to the larger joints, as the shoulder. The appetite being always faulty, Dr. FARRE gives milk diet until the tongue is clean, or cleaning. Meat given before it can be digested, immediately brings back pain in the joints. He keeps the patient between blankets. As soon as the pain has gone, and the tongue is clean, he gives bitter tonics, omitting or diminishing the alkali if the urine is alkaline or neutral.

DR. FLEMING, BIRMINGHAM, ENGLAND.

834. ℞. Potassii bicarbonatis, gr. xxx.
Aquæ, f. ℥ ij. M.
For one dose, before each meal. Add ½ an ounce of fresh lemon juice, and take the mixture during effervescence.

If there be high fever, from 1 to 3 minims of *Fleming's tincture of aconite* are added to each draught. If there be much pain in the muscles, in place of aconite, from 5 to 10 minims of *tincture of hemlock* are added to each dose of the alkaline. If, on the other hand, the periosteum be affected, from 2 to 6 grains of the *iodide of potassium* are given. To relieve pain and secure sleep, Dr. FLEMING orders, at bedtime, a full draught of morphia and Indian hemp; as a drink, potassa water, or lemonade, freely. If necessary, colocynth and hyoscyamus pill is given to relieve the bowels. Cotton wadding is applied

to the affected joints. Active and repeated counter-irritation, and poultices over the heart, are employed in cardiac inflammation. During convalescence, warm clothing, full diet, with quinine and iron. After considerable experience, Dr. FLEMING has found that this treatment has furnished very good results, and that the number of those attacked with cardiac inflammation *after* their admission into the hospital, is undoubtedly small. Placing the patient between blankets materially promotes perspiration, and prevents chills.

THOMAS KING CHAMBERS, M. D., ETC., LONDON.

This author calls rheumatic fever "a pleasant disease for the doctor to treat, though not for the patient to bear," and gives a very simple, uniform plan of treatment, which, he states, hardly ever requires modification.

Bedding.—The patient's bed is made in a peculiar fashion. No linen should touch the skin. A slight calico shift or shirt may be allowed; but if the patients possess underclothing only of the prohibited sort, they are better naked. Even a linen front to the shirt is dangerous. The sheets should be removed, and the body carefully wrapped in blankets, the newest and fluffiest that can be got. The head is to be carefully protected from currents of air.

Fomentations.—Those joints or limbs which are swollen, red, or painful, are to be wrapped up in flannels, soaked either in hot water or a decoction of poppy-heads, with ½ ounce of carbonate of soda to each pint.

Curative Drugs.—If the skin is red, swollen, or painful about the joints, if motion is impossible or the cause of exquisite suffering, and especially if these phenomena are metastatic, then the "alkaline treatment" is employed, as follows:

835. R. Potassii carbonatis, ℈j.
Aquæ camphoræ, f.℥ij. M.
For one dose. To be repeated every three hours, day or night, when awake.

If, however, the above symptoms are insignificant, and the pain is felt more in the bones, being intensified by pressure rather than by motion, and fixed, not metastatic, then 2 grains of iodide of potassium are to be added to each dose. So soon as the symptoms take a favorable turn, the alkali is to be omitted altogether, and only the iodide of potassium given.

Palliatives.—Opium is to be administered in amounts proportionate to the subjective sensation of pain—from 1 to 2 grains at a dose. Immediately upon the relief of the pain, the quantity is diminished. Pure opium in the pill, and the tincture, are the best preparations. If the pain remains fixed in one joint after it has left the other places, leeches are to be applied there, and the part kept poulticed. Bruised laurel leaves may be mixed with the poultice. If the heart becomes affected, leeches and poultices are to be applied to the cardiac region.

Diet.—The food is to be varied to some extent, by the social and personal state of the patients. If they have been hearty and well-to-do persons before the attack, simple diet is proper, *i. e.*, bread and butter, gruel and tea. If they have been ill-nourished, a pint of broth or beef tea is added.

J. M. DA COSTA, M. D., PHILADELPHIA.

836. ℞. Ammonii bromidi, ℥ ss.
Tincturæ aurantii corticis, f.℥ ss.
Aquæ, f.℥ ijss. M.

A dessertspoonful every three hours, except at night. In acute rheumatic fever, the beneficial influence of the bromide of ammonium is undoubted.

Over the pains and aches of acute rheumatism, this remedy exerts an unquestionable control; but in chronic rheumatism, it is decidedly inferior to iodide of potassium. But slight amelioration follows its use, in persistent swelling of the joints of rheumatic origin, and none in rheumatism due to a venereal taint.

837. ℞. Atropiæ sulphatis, gr. $\frac{1}{60}$.
Aquæ destillatæ, ♏x. M.

For one injection. To be thrown under the skin, in certain forms of muscular rheumatism, particularly wry neck, over or into the rigid parts. To be repeated once a day. Sometimes, the most marked and speedy relief follows this treatment, after ordinary remedies have failed.

838. ℞. Potassii iodidi, ℥ j.
Vini colchici radicis, f.℥ ij.
Morphiæ sulphatis, gr. iij.
Syrupi, f.℥ j.
Aquæ, f.℥ ij. M.

A teaspoonful three times a day, after meals, in muscular rheumatism.

839. ℞. Potassii carbonatis, ℥ ij.
Potassii acetatis, ℥ iij.
Vini colchici seminis, f.℥ j.
Syrupi tolutani, f.℥ iss.
Aquæ, f.℥ ss. M.

A teaspoonful thrice daily, in lumbago, the following liniment to be rubbed in night and morning:

840. ℞. Chloroformi, f.℥ ss.
Linimenti ammoniæ, f.℥ iss.
Linimenti saponis, f.℥ ij. M.

In a week or ten days, after the pain has subsided, apply:

841. ℞. Emplastri picis cum cantharide,
Emplastri Logani, āā. equal parts. M.

The quickest way of treating lumbago is by throwing $^1/_{50}$ of a grain of *atropia* under the skin, near the affected muscles. This will sometimes dissipate the attack as if by magic.

842. ℞. Tincturæ guaiaci, f.℥ ij.
Vini colchici radicis, f.℥ ij.
Potassii bicarbonatis, ℥ ss.
Syrupi aurantii corticis, f.℥ ij. M.

A dessertspoonful in water, thrice daily, in rheumatic arthritis. Also have the joints wrapped in cotton, and painted, morning and evening, with equal parts of tincture of iodine and alcohol, until they become sore. Sulphur baths are beneficial. Small blisters are also of service in the neighborhood of the joints, frequently repeated and dressed with:

843. ℞. Morphiæ acetatis, gr. ¼.
Pulveris marantæ, gr. j. M.

Arsenic is an excellent remedy in rheumatic arthritis. It may be administered as follows:

844. ℞. Liquoris potassii arsenitis, f.℥ ij.
Potassii iodidi, ℥ ij.
Syrupi, f.℥ iij. M.

A teaspoonful thrice daily, between meals, in water.

845. ℞. Vini colchici seminis, f.℥ j.
Potassii acetatis, ℥ vj.
Spiritûs ætheris nitrosi,
Syrupi, āā f.℥ j. M.

A teaspoonful thrice daily, in pleurodynia.

Also use a stimulating liniment and keep the parts warm.

846. ℞. Potassii iodidi, ℥ ij.
Vini colchici radicis, f.℥ ss.
Extracti cinchonæ fluidi,
Elixir cinchonæ, āā f.℥ iss. M.

A dessertspoonful thrice daily, in muscular rheumatism.

Cinchona disguises the taste of the iodide of potassium. Quinine is often serviceable alone in those cases in which the joints are not affected, and in which there is pallor and loss of strength.

847. ℞. Potassii iodidi, ℥ ij.
Tincturæ belladonnæ, f. ℥ iss.
Syrupi aurantii corticis, f. ℥ ss.
Aquam, q. s. ad f. ℥ iij. M.

A teaspoonful thrice daily, in muscular rheumatism associated with vesical incontinence.

In case of swelling and stiffness of the joints following acute rheumatism, nothing does so much good as *sulphur-baths*. When practicable, send the patient to the sulphur-baths of Virginia, to get rid of these remnants of the acute attack. Artificial sulphur-baths are also useful. When these are not practicable, great benefit will be obtained from the iodide of potassium and compound tincture of guaiacum.

848. ℞. Potassii iodidi, ℥ ij.
Tincturæ guaiaci compositæ, f. ℥ vj. M.

A dessertspoonful thrice daily.

This prescription is very efficient, though not an elegant one. It is very unpleasant to take. There are few who will go on with it for a long enough time to get its full therapeutical effects.

In the treatment of the *subacute form of muscular rheumatism*, nitrate of potash is very valuable. This is an old remedy, but the advance of therapeutics has shown no other, in this form of rheumatism, of which our author thinks so highly. It may be conjoined with Dover's powder.

849. ℞. Potassii nitratis, gr. xv.
Pulveris ipecacuanhæ compositi, gr. iij.

For one powder, to be taken every fourth hour.

RÉSUMÉ OF REMEDIES.

Aconite is, according to Dr. REITH, (*Edinburgh Medical Journal,*) ordinarily given in too large doses in acute rheumatism. He obtains good results in mild cases by its agency alone in small and often-repeated doses, (♏¼ of the tincture every two hours.) In some cases he combines it with the full alkaline or blister treatment.

Chloral has been extolled in cerebral rheumatism by M. BOUCHUT.

Cimicifuga was brought forward as a remedy in acute rheumatism by Dr. F. N. JOHNSON, of New York. It is less employed in the acute than in the chronic form.

**Colchicum* relieves the symptoms and shortens their duration, when combined with small doses of calomel, ipecacuanha, alkalies and opium. It is less beneficial, according to Dr. FULLER, in the weak and nervous than in the robust; less in purely fibrous rheumatism than in that complicated by synovial inflammation; less in proportion as the fever exceeds the articular swelling,

and as the urine is less highly charged with the lithates. During its use, its operation must be carefully watched, the bowels kept regulated, and if the lithates disappear from the urine, if the pulse become weak, if faintness, or nausea, or purging supervene, it must be discontinued. The acetous extract, or the inspissated juice, (gr. j–iss,) or the wine (ɱxv–xx,) may be given twice or thrice daily.

Ergota, in full doses internally, is a very efficacious remedy in many cases of acute rheumatism.

Ferri Chloridi Tinctura has been employed by Dr. Russell Reynolds, of London, in doses of about ɱxxx every six hours, with the effect of shortening the duration of the disease, and relieving the joint affection.

Limonum Succus. See page 423.

**Opium*, in large and repeated doses, is given by Sir D. Corrigan, of Dublin. He commences with gr. j every two or three hours, and increases the dose, both in frequency and quantity, until the patient feels decided relief, when it should be kept up at that dose until the disease is steadily declining. The average quantity required in twenty-four hours, is about gr. xij, and even that amount does not affect the head; occasionally, it produces diarrhœa, when astringents are required to check it. The tolerance of opium, in this disease, is remarkable.

Potassii Acetas is much employed. The dose usually given is about gr. xxx every four hours.

**Potassii Bicarbonas* is a favorite remedy. Dr. A. B. Garrod, of London, gives gr. xxx, in solution, every four hours, until the joint symptoms and febrile disturbance have completely disappeared. Dr. Fuller, of London, considers that ℥ iss are the minimum dose which will suffice to overcome the acid condition of the blood during the first twenty-four or forty-eight hours of treatment, and in sthenic cases, ℥ ij are often needed. Small doses he regards as useless.

Potassii Nitras. Dr. Basham, who instituted a series of experiments to ascertain the real value of nitre in acute rheumatism, arrived at the following conclusions: 1. That it is a most valuable remedy in doses of ℥ ij–iij, in Oiv of barley-water, daily. 2. That it acts by restoring the saline constituents of the blood, and by lessening the excess of fibrine. 3. That there is a certain amount of exemption from cardiac complication, and that cardiac inflammation, when it supervenes, is more amenable to remedies. 4. That the tendency to collapse is much diminished, and the acute or inflammatory symptoms usually give way on the third or fourth day.

Potassii Permanganas. Dr. Finn (*Canada Medical Journal*, January, 1868,) writes in the highest terms of the efficacy of the permanganate of potash, in the treatment of rhematism, gr. ½ thrice daily, which he believes to be due to the large proportion of oxygen which it contains. This salt promotes the transformation of lactic into carbonic acid.

Potassii Bitartras, in doses of gr. xv–xx, every four hours, given in mint-water, alone or in combination with tincture of hyoscyamus (ɱxxx–xl), is said to produce good results.

Propylamine. See *Trimethylamine.*

Quiniæ Sulphas, according to Dr. FULLER, should, ordinarily, only be used as a restorative when the febrile paroxysm is beginning to abate, and not as a cure during the active stages of the disease.

Salicin and Salicylic Acid. See above, page 422.

Trimethylamine has, at times, been popular as a remedy in rheumatism. Its favorable action is thought to be on account of its alkaline properties. There can be no doubt that it reduces the temperature, diminishes the pulse, and removes the pain in some cases of acute rheumatism and gout, and that in a very short time—from six to thirty-six hours after its use. The more *acute* the disease, the more marked is the effect of the remedy. In chronic cases, there is little or no benefit from it. The dose is gr. iij every two hours. It is often confounded with *Propylamine*, which is a different substance.

Zinci Cyanuretum. This remedy was suggested by LUTON, of Rheims, some time since. Lately, DESCHAMPS has used it with success, and recommends it highly. He employs the following formula:

850. ℞. Zinci cynanid., gr. $\frac{1}{12}$.
Pulv. acaciæ,
Sacch. lactis, āā q. s. M.
For one pill. To be taken in the number of ten in twenty-four hours.

In recent acute cases, the relief is immediate.

LOCAL APPLICATIONS.

Baths. Dr. R. J. BUTLER (*Medical Press*, August 5th, 1868,) has found great benefit, in acute rheumatism, from baths containing *valerian*. He directs:

851. ℞. Valerianæ radicis, ℔ j.
Aquæ, C.j.
Boil together for a quarter of an hour, strain the liquor, and add to an ordinary bath, at 98°, the patient remaining in it for twenty or thirty minutes.

For any remaining inflammation about the joints, he applies linseed-meal poultices, prepared with a strong decoction of valerian. In the arthritic form of the disease, he considers valerian of extraordinary efficacy in subduing the pain and inflammation.

Prof. DA COSTA, of Philadelphia, recommends sulphur-baths, artificial or natural, for the swelling and stiffness of the joints following acute rheumatism.

**Blisters.* The blister treatment has been prominently advocated. Dr. HERBERT DAVIES directs armlets, wristlets, and even fingerlets of blister-plaster, to be applied at the time the inflammation is most acute, linseed-meal poultices being subsequently applied, to keep up the serous discharge. He places these blisters entirely around the affected limbs, and in the case of the knees, orders them at least three inches wide, regarding any slight strangury which may arise as of little importance, compared with the benefit afforded by the free vesication. This treatment may be aided by a *mild* course of alkali, but he does not regard this as essential, excepting when the rheumatic virus attacks the heart in the first instance, and seems to hesitate in fixing itself upon the joints. Dr. RINGER, of London, considers

all the alleged good effects may be obtained by the use of "flying blisters." Dr. A. FLEISCHMAN (*Lancet*, May 1st, 1869,) looks upon a blister about two inches square, placed an inch and a half below the left clavicle, as an almost certain preventive of cardiac mischief.

Cold Packing. Applying a mixture of pounded ice and salt to the swollen joint for not longer than five minutes at a time, will sometimes relieve the pain promptly. Or, the cold pack may be employed. Two dry blankets are laid on a bed, and over these a sheet, wrung out as dry as possible with cold water, is laid so that when folded it will completely embrace the affected limb or limbs. The patient is placed upon the sheet, which is tightly folded over the rheumatic parts and covered immediately with the blankets. This may be renewed every two or three hours.

Hot Packing. This is much esteemed by some practitioners. As employed in Mount Sinai Hospital, New York City, the method is as follows: The bed is prepared by spreading over it a sheet of rubber cloth, and over this a blanket. Hot blankets are then wrung out of water of a temperature about as hot as the hand can bear, and with these the patient is enveloped. Two or three thicknesses of dry blankets are superimposed, and the whole retained in position till the patient is free from pain—a time varying from two to six hours. When the pack is applied, the patient sweats very profusely, as might be supposed, and after its removal, no danger has been found to occur. If the pain is confined to one joint, that joint is enveloped by the hot blanket, which is removed as soon as the pain disappears. One case of chronic rheumatism, extending over a period of seven months, was treated by means of local packings, and after slight relapses, occurring at intervals for five weeks, was discharged perfectly cured. This method presents the advantage in private practice of not shocking the friends of the patient as much as the ice and ice-water packings.

CHRONIC RHEUMATISM.

PROF. FRANCIS DELAFIELD, M. D., NEW YORK.

Cases of this disease are apt to be extremely obstinate. A fair general plan of treatment is to give increasing doses of *iodide of potassium*, commencing with gr. x, thrice daily, together with counter-irritation over the affected muscles. The very best form of counter-irritation, and one almost sure to produce decided relief, is *massage*, shampooing or kneading, by a skilled manipulator. Where the services of such a person cannot be obtained, the next best plan is to apply a succession of blisters, together with painting the part for a long time with tincture of iodine.

DR. HENRY HARTSHORNE, PHILADELPHIA.

This author considers the treatment of chronic rheumatism largely experimental. Local treatment generally does more for it than medicine. He has found a liniment containing turpentine, oil of sassafras, ammonia, and laudanum, diluted with soap liniment, of great use. Where pain is considerable, chloroform or aconite liniment is better. Blisters may be applied in bad cases. For rigidity of the joints, and for pain in them, *pouring hot water* continuously over the parts affords great relief. The hot or vapor-bath, as well as the hot dry-air bath (130° to 200°) will sometimes prove very effective.

DR. FULLER, LONDON.

In attacks of *lumbago*, this author recommends brisk purgatives at the commencement of the attack, when the bowels are costive and the urine scanty, high-colored, or loaded; but when the urine is abundant and light-colored, the bowels regular, and the dejections natural, the value of purgatives is not so apparent. Cupping on the loins is of essential service—dry cupping when it is not thought desirable to extract blood. Baths rendered alkaline by carbonate of soda or potash; hot fomentations formed by placing across the loins flannels wetted with an alkaline and opiate solution, and covered with a piece of gutta percha. In obstinate cases, stimulating and opiate embrocations. As excellent liniments in these cases he gives:

852. R. Olei cajuputi,
Tincturæ opii, āā f.℥ ij.
Olei terebinthinæ, f.℥ iv.
Linimenti ammoniæ, f.℥ j. M.
For a liniment.

Or:

853. R. Liquoris ammoniæ, f.℥ j.
Tincturæ opii, f.℥ ij.
Tincturæ cantharidis, f.℥ iij.
Linimenti saponis, f.℥ x. M.
For a liniment.

Guaiacum has an old repute in chronic rheumatism. Dr. William Aitken gives the following formula:

854. R. Pulveris guaiaci, ℥ j.
Pulveris rhei, ℥ ij.
Potassii bitartratis,
Sulphuris sublimati, āā ℥ j.
Pulveris nucis moschatæ, ℥ ij.
Mellis, lb. j. M.
Of this compound, two large spoonfuls are to be taken night and morning.

It is used in some large hospitals, both civil and military, in the treatment of old chronic cases. The beneficial effects of guaiacum are obtained in those cases which are unaccompanied by perspiration, and in which the secreting organs are gently excited by this drug. When the diaphoresis is free, it does little good. The following is used in the Philadelphia hospitals :

855. ℞. Pulv. guaiaci resin.,
Potass. iodidi, āā gr. x.
Tinct. colchici semin., f.℥ss.
Aq. cinnamomi,
Syrupi, āā q. s. ad f.℥j. M.
A dessertspoonful to a tablespoonful thrice daily.

856. ℞. Fl. ext. polymniæ uvedaliæ, ℥ij.
Adipis, ℥j. M.
It should be applied twice daily. (*Med. and Surg. Reporter*, 1878.)

RÉSUMÉ OF REMEDIES.

Cajuputi Oleum. In doses of gtt. j–ij, in pill form, this has been given internally, in chronic rheumatism, with alleged good effects. It is also an ingredient in liniments.

Cimicifuga. In some cases of this disease, this drug exerts a prompt and very positive healing action, but, as it frequently fails, it is impossible to point out the indications for its use.

Guaiacum has long been esteemed in this disease; f.℥j of the tincture may be administered thrice daily. (Or F. 854.)

Iodoform has been recommended by Dr. KNOLL:

857. ℞. Iodoformi,
Ferri redacti, āā gr. xliij.
Extr. glycyrrhizæ, q. s. M.
Make sixty pills. Two to be taken thrice daily.

Kerosene. See *Petroleum.*

Morrhuæ Oleum is one of the most efficient remedies in chronic rheumatism with dyspepsia and general exhaustion.

Opium and its alkaloids are especially valued in the form of hypodermic injections, as additions to liniments, etc.

Petroleum has been used with much advantage, locally, well rubbed into the affected parts. Internally, a teaspoonful of kerosene, in water, every other night, has cured some cases. (*British Medical Journal*, May, 1872.)

Phytolacca Decandra. The poke-root has quite an extended reputation in this disease. No doubt it cures certain cases with astonishing promptness. The indications for its use are, however, not definitely known.

Polymnia Uvedalia, in ointment, is highly esteemed. (F. 856.)

Potossii Iodidum is the most generally successful of all remedies, in this disease. Sir JAMES PAGET has pointed out that the addition of carbonate of ammonia greatly increases its therapeutic action. Five grains of the iodine may be combined with three of the carbonate.

Rhus Toxicodendron. Drs. PHILLIPS and PIFFARD give high praise to this plant, in sub-acute muscular or tendinous rheumatism. The former says it is "positively invaluable." The latter has found it most useful in non-syphilitic cases, where the pain is worse at night. He gives ♏$\frac{1}{8}$–$\frac{1}{4}$ of a tincture made by macerating one part of fresh leaves to two of alcohol.

Sassafras. This is stated to be an efficacious remedy when the circulation is languid, the skin dry, and the kidneys, liver, and bowels, inactive. It has the advantage over guaiacum, of not being purgative. Dr. FULLER, of London, recommends the following formula:

858. ℞. Sassafras radicis, ℥iss.
Mezerei, ℥iv.
Taraxaci radicis, ℥iij.
Aquæ ferventis, Oj. M.

Dose, f℥j–iss, conjoined with a plentiful use of diluents.

Sulphur, internally, is often of benefit.

Terebinthinæ Oleum is a valuable addition to liniments and stimulating embrocations. Dr. BREMOND, of Paris, recommends the employment of baths of the vapor of turpentine, which may be administered by placing the body of the patient in a wooden chest, the head remaining free. Into this chest, the vapor of water is conducted, loaded with a fine spray of oil of turpentine. The temperature of this vapor-bath is 105°–110° F., and the time during which a patient may be exposed to it, is about fifteen minutes.

Xanthoxylum. The bark of the prickly ash has long enjoyed a popular reputation in chronic rheumatism.

Electricity, in its various forms, has been very extensively tried in chronic rheumatism. Sometimes, the results are most satisfactory; but Drs. BEARD and ROCKWELL state that, on the whole, in cases of long standing, they have been disappointed in its effects.

TYPHOID FEVER.

PROF. ALONZO CLARK, M. D., NEW YORK.

An average case of typhoid fever needs no medication whatever, except for the relief of symptoms.

For the *diarrhœa* he gives:

859. R. Bismuth. subnit., ℥j.
Morphiæ sulph., gr. j.
M. et div. in chart. No. XII. One to four a day.

The common astringents, tr. kino and tr. catechu, may be employed; and the decoction of blackberry root is sometimes very serviceable. In some cases, it requires the moderately free use of opium to restrain the diarrhœa.

For the *cough*, the tonic expectorants will be most likely to do good. Perhaps one of the best that can be used, is the compound *tincture of benzoin*, in doses of 10 drops on sugar, once in three or four hours. A very good combination is the tincture of the balsam of tolu and the mistura guaiaci:

860. R. Mist. guaiaci, ℥j–℥ss.
Tr. balsam tolu, gtt. vj–x. M.
This can be repeated every two, three or four hours. Sometimes the inhalation of the vapor of warm water seems to be required for one or two hours each day.

Restlessness is one of the prominent features of the disease. This will very frequently be entirely quieted by sponging the surface of the body with warm or cold water. If the temperature is high, cold water is better than warm; and in some cases a Dover's powder will be required.

In regard to the *temperature*, if it be so high that the temperature of the body is 105° F., the patient may be placed in a bath having a temperature of 95° F.; then some of the warm water can be removed, and be replaced by cold water until the bath has been reduced to 80° F. If the patient is permitted to remain in such a bath twenty minutes, the temperature is usually reduced one, two, three, four or even five degrees. He is then removed from the bath, put back into bed, and it will be several hours, usually, before the temperature will rise

as high as it was before using the bath. When it rises, another bath is to be given, and in that manner repeated as often as may be necessary to keep the temperature below the point of danger.

For the *hemorrhage from the bowels* there is but little that can be done, unless, in addition to absolute rest, the fluid extract of ergot be administered.

For *perforation*, full doses of opium offer the best and only chance.

The *diet* must be liquid, and nutritive. Milk, beef essence, etc, are demanded. Fresh air and free ventilation must never be neglected.

BOSTON CITY HOSPITAL.

The treatment at this hospital, as practiced under the surveillance of Drs. STEDMAN and DRAPER, is a modification of the bathing process, occupying an intermediate position between the full carrying out of cold-water bathing and the expectant treatment. On entrance, patients are immediately put to bed, and their diet restricted to milk, of which they are expected to drink about two and a half quarts in twenty-four hours. This is perhaps the most important part of the treatment; at first they may object to milk, but on becoming accustomed to it they take it freely. To keep up the strength is the chief aim, and if insufficient nourishment is taken, by giving a small amount at regular intervals, the end sought for is accomplished. This diet is continued till the temperature has been normal for several days, when light soups and easily digested farinaceous articles are given; in a few days more, a gradual return to regular, though still somewhat restricted, diet is allowed.

To lower the temperature, sponge-baths, of equal parts of cold water and alcohol, are quickly applied to the surface of the body, which is immediately dried.

In mild cases of diarrhœa nothing is done, two or three loose dejections per diem not being considered harmful; when, however, it becomes excessive, it is quickly checked by a pill composed of a grain of opium and a quarter of a grain of sulphate of copper.

In delirium and wakefulness, when the patient can be made to tolerate it, the ice-cap is of great benefit.

The frequent use of a mouth-wash, of equal parts of glycerine and rose-water, is very pleasant to the patient, relieving the foul taste and dryness of the mouth.

In very mild cases, 20 drops of dilute nitro-muriatic acid may be given every two hours.

Excepting the medicines above mentioned, no drugs are given, but every attention possible is shown to the comfort, nourishment, sleep and general welfare of the patient.

PROF. WILLIAM PEPPER, M. D., PHILADELPHIA.

This practitioner (*Boston Medical and Surgical Journal*, Oct., 1877,) recommends, in the second week of the disease, when the abdominal symptoms of pain and diarrhœa have fully set in, the use of *nitrate of silver*.

861. ℞. Argenti nitratis, gr. $\frac{1}{4}$.
Extracti belladonnæ, gr. $\frac{1}{2}$.
Extracti opii aquosi, gr. $\frac{1}{6}$–$\frac{1}{2}$. M.
For one pill. Three times a day after food.

Under this treatment, diarrhœa and tenderness diminish, and patients make very rapid recoveries. In most cases very little stimulant is used. Milk and beef tea are the only articles of food he allows. Quinia is given with other tonics. Fever is reduced by frequent spongings of the skin of the entire body. When the high fever resists sponging, cool baths are employed. Indiscriminate bathing in typhoid fever is often extremely injurious. The best time for the use of the cold bath is in the early stage, during the first week or ten days, in cases where the temperature rises above 103°, and is not controlled by frequent spongings, large doses of quinia, diaphoretics, etc. When the fever in subsequent stages runs high, it is of the nature of a sympathetic fever, largely dependent on the amount of intestinal lesion; hence, cold baths are less valuable at that time and attended with more risk. Nitrate of silver is used, both with the hope of limiting the amount of specific follicular catarrh of the intestines, and with the intention of favorably modifying the secondary sympathetic symptoms. Dr. PEPPER has cured *thirty-nine* out of the *forty* cases of typhoid fever in which it has been employed, by this nitrate of silver treatment.

PROF. KARL LIEBERMEISTER, M. D., TÜBINGEN.

This writer, whose essay on typhoid fever forms part of ZIEMSSEN'S *Cyclopædia*, believes it possible that both *iodine* and *calomel* may exert a specific influence in cutting short an attack of typhoid fever, if given

early. He gave iodide of potassium, ℈j–℥ j, in the twenty-four hours; and when he employed calomel, gr. viij, three or four times in the same period. He prefers the latter, and recommends it in the stage of the disease before the ninth day.

His main reliance, however, is *the antipyretic treatment.* This is to be carried out by cold baths and quinine. For adults, the full-length cold bath, 60° to 68° Fahr., is to be preferred. The duration of the bath should be ten minutes; but, if the patient is feeble, seven or five minutes. After the bath, the patient is to be wrapped in a dry sheet, put to bed, and given a glass of wine. In very severe cases, the bath should be repeated every two hours; the average cases require four to eight baths daily. *Contra-indications* to the baths are hemorrhage and perforation of the bowels, weakness of the heart's action, and extreme debility.

Quinine comes next as an antipyretic. But it must be given without timidity, and in a definite manner, as follows: from gr. xxij to gr. xlv *must positively be taken within the space of half an hour, or, at most, an hour.* Six or eight grains every ten minutes is a good rule. If this is boldly done, cinchonism is produced, and a material fall of temperature follows. This dose is repeated once every forty-eight hours; or, if the remission is not marked, once in twenty-four hours, the quantity being increased. When the fever spontaneously manifests a tendency to remissions, the quinine is of little value. This dose should reduce the temperature in the rectum to 100° Fahr. Of the two antipyretics mentioned, our author would generally rely on the quinine, if it is properly given.

When the fever is of such obstinacy that additional antipyretic effects are required, he usually gives from 11 to 22 grains of powdered *digitalis,* extended over a period of about thirty-six hours; this should be followed by a full dose of quinine, say gr. xl, in one hour, as above directed.

The diarrhœa he controls with opium, in small and repeated doses; meteorism, with cold compresses to the abdomen, changed every half hour, cold enemeta, and frictions with turpentine; hemorrhage from the bowels, with opium (gr. ij, in the twenty-four hours,) ice to the abdomen, and perfect quiet.

PROFESSOR S. JACCOUD, PARIS.

This able clinical teacher, like most French and English physicians,

discredits the cold bath treatment of typhoid. He abjures from the commencement all debilitating measures, such as purging. If needful, a mild laxative of Seidlitz water is given. During each twenty-four hours the patient takes a cordial mixture containing 2 or 3 scruples of extract of cinchona bark, 2 drachms of tincture of cinnamon, an ounce of syrup of orange peel, 3 ounces of red Bordeaux wine, and an ounce of old brandy, which may be increased, as occasion requires, to 3 or 4 ounces. The main constituent of the food is beef soup, given at least twice daily; about 8 ounces of old Bordeaux wine are allowed, and this is taken alternately with the stimulant mixture just mentioned. The ordinary beverage is lemonade, containing one-fourth of red wine. If it appear needful, all this is supplemented at the end of the second week by nutritive enemata twice daily. This mode of alimentation is stated to be well tolerated by the stomach and bowels.

When the patient's temperature reaches 102° Fahr., with a rise in the evening not above 103°, M. JACCOUD directs that twice during the day the whole body should be well sponged with aromatic vinegar. If the temperature rises higher, three, or even four, of these applications are made daily. They are continued, more or less frequently, until the close of the fever, and both comfort and benefit are derived from their refreshing and cooling effects.

Should any threatenings of bronchial or pulmonary implication arise, they are met by dry cupping.

THE TURPENTINE TREATMENT OF TYPHOID.

The oil of turpentine has been very largely used in this disease, but in different manners. The typical turpentine treatment is thus described by Dr. A. MAFFITT, in the *Lancet*, February, 1876:

As soon as the disease is diagnosed, oil of turpentine, in ½-drachm doses, made up with mucilage of eggs, is given four times a day, and continued throughout its course; and nourishment in the liquid state, such as beef tea, milk, chicken broth, eggs beaten up, etc., is given freely, and a stimulant, generally brandy, administered as the symptoms indicate.

Dr. R. P. White, of the Meath Hospital, Dublin, (*British Medical Journal*, December, 1877,) reports flattering success with this method. He gives the following turpentine mixture:

862. ℞. Olei terebinthinæ,
Liquoris potassæ, āā ℥ij.
Mucilaginis acaciæ, ℥iv.
Syrupi papaveris albi,
Syrupi floris aurantii, āā ℥viij.
Aquæ camphoræ, q. s. ad f.℥viij. M.
A tablespoonful to be taken every fourth hour, the bottle being first shaken.

Since he commenced this treatment, he has never lost any case of typhoid, from either bronchitis or diarrhœa, or from its sequelæ of ulceration or hemorrhage. He does not know any symptom which contra-indicates the adoption of this plan.

According to the majority of writers, there are two conditions in typhoid when turpentine is of the utmost value. About the end of the second week, the tongue sometimes becomes very dry, red, chapped, perhaps coated in the centre with a brownish fur, and at the same time, marked meteorism develops. Ten drops of turpentine every two hours during the day, and every three hours during the night, will, in the majority of cases, remove these threatening symptoms. Again, when the diarrhœa persists after the acute stage of the fever is passed, when the convalescence is protracted, and, evidently, the ulcers of Peyer's patches are slow to heal, turpentine acts almost as a specific. It has been recommended in 5 to 10-drop doses, frequently repeated, for the intestinal hemorrhage, and in doses of f℥j, every six hours, when there are tympanites and prostration, but no diarrhœa.

THE ANTISEPTIC TREATMENT OF TYPHOID.

Although this method of treatment cannot be considered as established, there has been enough testimony in its favor to commend it to careful consideration. In 1870, Dr. G. Wilkes, of England, recommended the administration of *sulphurous acid, acidum sulphurosum*, in enteric fever; and in this country, Dr. J. Wesley Botkin, of Illinois, (*Medical and Surgical Reporter*, May, 1876,) and others, have testified to its efficacy. The dose is from gtt. x–xx, every three or four hours, in lemonade. It can be combined with opium or digitalis. It should be continued until the tongue is perfectly clean.

In the *Practitioner*, September, 1873, Mr. Stephen Skinner reports very excellent results from the *sulpho-carbolate of soda*. He generally commenced with gr. xx every four hours, gradually increasing, during the next four days, to the full dose of gr. xxx. A larger dose than this may produce cerebral symptoms. When the diarrhœa

was excessive, opium was combined with the salt. He also claims that, by its early use, the premonitory symptoms of the disease are dispersed, and the threatened attack aborts.

RÉSUMÉ OF REMEDIES.

Acida. The mineral acids have been, at times, much prescribed in typhoid fever. Dr. GEORGE JOHNSON, of London, however, discountenances them, on the ground that they must irritate the ulcerated mucous membrane of the intestines, cause pain and griping, and increase the diarrhœa.

Alcohol. The value of alcoholic stimulants, in typhoid, has been much discussed. The following judicious rules are those laid down by Dr. ALFRED J. LOOMIS, of New York:

First. They should never be administered indiscriminately—that is, never give a patient stimulants simply because he has typhoid fever.

Second. When there is reasonable doubt as to the propriety of giving or withholding stimulants, it is safer to withhold them, at least until the signs which indicate their use become more marked.

Third. In every case—but especially when stimulants are not clearly indicated—watch, carefully, the effect of the first few doses. There are few whose experience in the treatment of typhoid fever is such as to enable them to positively determine, from the appearance of the patient, when the administration of stimulants should be commenced.

Should you commence the administration of stimulants, it is necessary to see your patient every two hours, and note carefully the effect produced. If you find the tongue becoming dry, the patient more restless, the delirium more active, the temperature ranging higher, and the pulse more and more rapid, you may be certain that stimulants are contra-indicated. If, on the other hand, the pulse becomes fuller and more regular, if the first sound of the heart is more distinctly heard, or, if having been absent, it has returned, if the restlessness and delirium are less marked, the tongue more moist, and the patient more intelligent, you may be certain that the time for the administration of stimulants has arrived. When you have commenced their use, it is of the greatest importance that you administer them at stated intervals, especially during the night.

In a severe case of typhoid fever, a free administration of stimulants, just at a critical period, (which may not last more than twenty-four hours,) will often be followed by a refreshing sleep, and your patient may rapidly pass from an apparently hopeless condition to one of convalescence.

Alumen may be employed to check the diarrhœa.

Ammonii Acetas and Carbonas are often exhibited, the former as a febrifuge, the latter as a stimulant. Prof. BARTHOLOW, however, considers that all salts of ammonium are distinctly contra-indicated by the excess of that element in the blood in this disease.

Caffea. Dr. PIGNE-DUPUYTREN, of Cal., speaks in the highest terms of coffee in this disease. (*Pacific Med. and Surg. Jour.*, April, 1879.) His rule is as follows: Give (to an adult) two or three tablespoonfuls of strong, black

coffee (without chicory) every two hours, to be alternated with one or two spoonfuls of good claret or Burgundy wine. Make the patient take, in the course of the day, a few wineglasses of lemonade or citrate of magnesia; then sulphate of quinia. Dr. RADCLIFFE, of London, has used it for years in this disease as a stimulant, in place of alcohol.

Camphora is frequently excellent in allaying the nervous agitation.

Chloral is often serviceable, in small doses, to induce sleep.

Digitalis. Dr. WUNDERLICH has recommended this drug to lower the temperature and slacken the pulse. Other German writers have also urged its claims, sometimes for its alleged antipyretic effects, sometimes as a roborant of the heart; but as yet no positively favorable opinion can be pronounced for its exhibition in this disease.

Ergota. This is of great value in the hemorrhage of typhoid. A common prescription in St Thomas Hospital, London, is:

863. ℞. Tincturæ opii,
Olei terebinthinæ,
Tinct. chloroformi, āā ♏x–xx.
Acidi tannici, gr. x.
Mucilaginis et aquæ, q. s. M.
For one dose.

When this is not retained by the stomach, the following may be tried:

864. ℞. Acidi tannici, gr. x.
Extracti ergotæ fluidi, ʒss–j. M.
For one dose every hour.

Or, gr. v of ergotin may be used hypodermically.

Iodinium. In St. Francis Hospital, London, iodine is given internally in all cases of typhoid fever. It is thought to lessen the troublesome gastric irritability so often present, and to diminish the number of evacuations from the bowels.

The following formula is usually employed:

865. ℞. Iodinii, ʒj.
Potassii iodidi, ʒij.
Aquæ dest., ʒx. M.
Gtt. iij in a wineglassful of water every three hours.

LUGOL'S solution, the liquor iodinii comp. of the Pharmacopœia, may be used in doses of six drops every three hours.

The cold bath, quinine and iodine, with close attention to the diet and the exhibition of stimulants, when indicated, constitute there the main features in the treatment of typhoid fever.

Hydrargyrum. The old practice of giving small doses of calomel at the commencement of the disease has largely fallen into desuetude. It is, however, recommended on the high authority of the late Dr. PARKES. The gums should not be touched. Sometimes the diarrhœa will yield to gr. $\frac{1}{100}$ of corrosive sublimate every two or three hours.

Oenothera Biennis. Dr. J. F. SULLIVAN says of this remedy, in the *Pacific Medical and Surgical Journal*, January, 1878: "I am convinced that it essentially modifies the inflammatory condition which precedes ulceration of Peyer's patches, and that its use may frequently prevent ulceration. The usual dose in typhoid fever is from 15 to 30 drops every three hours."

Opium is of great value to allay the nervous jactitation and insomnia. One-eighth of a grain of morphia in an ounce of camphor water, is an admirable draught. It may also be given in the diarrhœa. Nevertheless, it must be used cautiously. Dr. GEORGE JOHNSON has pointed out that although the direct effect of opium is soothing, yet that, when given in sufficient doses to render the intestines torpid, it acts indirectly as an irritant, by retaining the putrid morbid secretions until they decompose and give off noxious gases, which distend and irritate the bowel, and thus increase and prolong the diarrhœa.

Potassii Bromidum is one of the best agents to combat the restlessness.

Quinia. The use of quinia as an antipyretic and its administration has been discussed above. (P. 440.) Its value is far from proven. As a tonic in the latter stages, it is highly and justly esteemed.

Plumbi Acetas is sometimes useful in checking the diarrhœa.

Salicin and Salicylic Acid have been largely employed for their antipyretic and antizymotic properties. The general result up to the present date, has not been favorable to their use.

Serpentaria. Dr. BARTHOLOW considers that in typhoid fever, serpentaria is indicated, and is unquestionably serviceable when much depression exists. It is apt to increase the diarrhœa, however, and must be given with caution when the intestines are very irritable. The fluid extract is an appropriate form.

Terebinthinæ Oleum. (See above p. 441.)

TYPHO-MALARIAL FEVER.

DR. JEFFERSON D. WILLIAMS.

This writer, practicing in Mississippi, relates an extensive experience in this disease. (*Virginia Medical Monthly*, March, 1877.) In its treatment, he condemns quinine, believing that it aggravates the symptoms. The most essential point he has found, is to control the diarrhœa, tympanites, and pain in the bowels. To this end, he administers *subnitrate of bismuth*, gr. xxx; *pulvis ipecac. et opii*, gr. x, every few hours; this failing, and the diarrhœa becoming excessive, he checks it by injections of opium, acetate of lead, subnitrate of bismuth, and glycerine. When the red and dry tongue, the tympanites, and pain, denote active inflammation of the intestinal tract, he trusts to frequent

doses of *chlorate of potash*, a teaspoonful of a saturated solution, every one, two, or three hours. Turpentine he has not found to be of value. Abundant, easily-digestible food and moderate stimulation are required throughout the disease.

DR. ALONZO HARLOW, DETROIT, MICHIGAN.

In typho-malarial fever, this physician states (*Peninsular Medical Journal*, December, 1873,) that he has used, with much satisfaction, the following:

866. ℞. Quiniæ sulphatis, gr. xxx.
Olei piperi nigri, gtt. xxiv.
Acidi sulphurici aromatici, ℥j.
Syrupi simplicis, ℥iv.
Alcoholis, ℥j. M.
Tablespoonful every hour, until half the quantity has been used; afterward, every other hour.

If the chill recur, repeat in same or less quantity; milk-punch to be used freely. He used aconite, or veratrum viride, or gelsemium, for the fever, and did not believe in too general stimulation with alcoholic stimulants. At a later stage, and in some cases, diffusible stimulants, as ammonia carbonate and brandy, are necessary.

TYPHUS FEVER.

HENRY HARTSHORNE, M. D., PHILADELPHIA.

The treatment should commence with a mild laxative, as citrate of magnesia or rhubarb. Small doses of oil or enemata may be needed throughout the attack.

To combat the depression of the middle stage, the mineral acids have considerable reputation. Either dilute sulphuric, nitric, or nitro-muriatic acid, may be used:

867. ℞. Acidi nitrici, gtt. xl.
Aquæ, f.℥iv. M.
One or two tablespoonfuls every three hours.

868. ℞. Acidi nitro-muriatici, f.℥ss.
Spiritûs ætheris nitrici dulcis, f.℥ss.
Aquæ camphoræ, f.℥vss. M.
A tablespoonful every two or three hours.

Quinine acts well in 1 or 2-grain doses, four or five times daily, after defervescence has begun. Dr. H. is satisfied that the plan of treating typhus early with large doses of quinine is not only futile, but unsafe. The *diet*, at first, may be of gruel, toast water, etc.; but very soon, must milk and beef tea, or chicken or mutton broth (or an alternation of these) be given to support the strength. Before the first week is out, half the cases will need wine in moderation; some, brandy or whiskey. In the second and third week, more than half the cases will require steady support of a positive kind. In such cases, the proper routine is, a tablespoonful of brandy or whiskey punch, (one part of spirit to three, two, or one of milk,) every two, three, or four hours, and the alternate hours, a tablespoonful or two of beef essence or beef tea.

The great point of skill will be to determine when and how far to stimulate. Delirium favors the probability of its being needed, especially a low, muttering delirium. Of course a very feeble pulse indicates it. On trial, when the pulse grows slower, the skin more moist, and the restlessness or delirium is quieted, the stimulus has done good, and should be continued. If, on the contrary, a more hurried or a *harder* pulse follows, with heat of head and dryness of skin, and wilder delirium or deeper stupor, it should be stopped, for a while, at least; or, if given, be diminished in amount.

Hypostatic pneumonia, in typhus, cannot be treated actively. Even abstraction of blood by cups, is hardly ever to be ventured upon. *Dry* cups, between the shoulders, and a blister upon the breast, will be as far as we can go.

PROF. M. CHARTERIS, M. D., GLASGOW.

This author approves of the plan pursued by the late Dr. J. Hughes Bennett, of giving an emetic in the early, incubatory stage of the disease, which, he believes, will often abort the attack. When the fever once sets in, he confines himself to treating symptoms. He gives a purgative at the outset, of rhei pulveris, gr. xxx–lx; subsequent constipation he relieves by enemata of tepid water. The head should be shaved, and cold lotions applied. Stimulants are called for when there is rapid, feeble pulse, and weakness of the first sound of the heart. If the debility is marked, the patient must be roused to take them. When there is much nervous irritability, with sleeplessness, a sedative, such as the following, is required:

869. R. Potassii bromidi, ℥ iij.
Chloral hydratis, ℥ j.
Aquæ, f.℥ viss. M.
A tablespoonful every two hours.

H. M'NAUGHTON JONES, M. D., DUBLIN.

This practitioner has derived great advantage, in typhus fever, from *digitalis*. (*Dublin Journal of Medical Science*, April, 1875.) His usual prescription is:

870. R. Tincturæ digitalis,
Ætheris chlorici, āā gtt. xx. M.
In water, every three or four hours.

This has a well-marked effect in strengthening the pulse, lowering the temperature, preventing delirium, and improving the secretions. He believes cases to do better, under this drug, without alcohol in any form, and formulates the following conclusions:

1. That in the treatment of fever, typhus and other forms, too much reliance has been placed on alcoholic stimulants, and that fashion, rather than reason, has swayed many in their indiscriminate employment.

2. That the percentage of cases requiring such stimulants, is a low one, and that, while our administration of them, as regards quantity and kind, must depend entirely on the condition of the patient, still, the utmost caution is required.

3. That in *digitalis*, we have a powerful cardiac stimulant, which, while it gives force to the heart, does not do so at the expense of the system, but rather is a conservative agent, which controls expenditure and limits waste of vital action.

4. That digitalis appears to be indicated in the early periods of many cases of typhus in which we have a rapid pulse and high temperature range, regulating our administration by its effects on both, using it rather with the object of guiding the patient up to a certain point, than of curing the disease.

TREATMENT BY COLD BATHS.

The cold-bath treatment has been strongly urged by Professor MOSLER. He gives the following manner of applying it: The patient is placed as far as the neck, in a water-bath at a temperature of 64° Fah., or of one or two degrees lower than this. When the temperature of the water is raised by the heat of the body, it is

important to restore it to its original state—that is, to 64°. During the bath, the cold water should be poured over the head of the patient; this douche should not be warmer than the water in the bath, but sometimes even a little colder. This plan of treatment is to be carried out whenever the thermometer placed in the patient's axilla, marks 103° Fah. The duration of the bath must be regulated according to the nature of the sensations of the patient, and should be suspended whenever complaints are made of intense cold. The ordinary duration is from ten to thirty minutes; the patient is then to be dried with great care, and placed in a well-warmed bed. It is a good plan to administer to the patient, after the bath, some strong red wine.

Dr. SCHOLZ, of Bremen, has carried this plan out very successfully, in both typhus and typhoid, with some modifications. He uses a bath from 50° to 70°, and considered it indicated whenever the axillary temperature rose to 102°. (*Medicinische Rundschau*, 1872.) When immersed, the patient either moved himself or was lightly rubbed. The duration of the bath was from ten to fifteen minutes, or, in many cases, not more than five or six minutes. He was placed in bed without being dried, and was covered with a woolen coverlet. When the brain was much affected, cold douches were directed against the head whilst the patient was in the bath, and ice-caps were occasionally used. Cloths dipped in cold water were placed, at intervals of a quarter or half an hour, upon the chest and belly. These appeared to exert a favorable influence upon the diarrhœa, and were felt to be agreeable to the patient. Scarcely any drugs were administered. The diet was light, but nutritive. In very severe cases, where there is no material augmentation of the animal heat, Dr. SCHOLZ does not think it right to use the baths, but brings the skin into action by powerful thermic and mechanical irritation (frictions.) Dr. SCHOLZ distinguishes two periods in the treatment of the disease—in the first, or early period, the patient must not be bathed at night, and not more than five times during the day; whilst, in the second or later period, the number of baths may be sufficient to keep down the temperature of the body to near its normal degree.

RESUMÉ OF REMEDIES.

Alcohol, in some form, is recommended by most authors. The indications for its use are given above.

Belladonna is recommended by Dr. GRAVES, when stupor with contraction of the pupil supervenes.

Digitalis has been highly praised by Dr. H. McNaughton Jones. (F. 870.)

Erythroxlon Cuca. From the ascertained fact that this drug diminishes the amount of urea secreted, Dr. Samuel McBean has recommended it in typhus and typhoid fever. (*British Medical Journal*, March, 1877.) He gives f.℥j of the tincture every four hours, combined with a little ginger if it causes flatulence.

Moschus. Dr. Murchison considers that musk is a stimulant of very great value, which has fallen into unmerited neglect. It may be given in the following formula:

871. ℞. Pulveris moschi, gr. x.
Mucilaginis acaciæ,
Syrupi aurantii āā f.℥ij.
Aquæ camphoræ, f.℥ss. M.
This amount at a dose, every five or six hours.

Opium. The use of opium in typhus varies greatly. Some authorities consider it always dangerous. Dr. Murchison discriminates between three forms or stages of the disease; when the delirium is active and the pulse of good strength, he would combine opium with a depressant and push it; *e. g.:*

872. ℞. Liq. opii sedativi, f.℥j.
Antim. tartratis, gr. j.
Aquæ camphoræ, f.℥vi. M.
A tablespoonful every hour until sleep is induced.

When the pulse is feeble, and the delirium wandering, the opium should be combined with stimulants; *e. g.:*

873. ℞. Liq. opii sedativi, f.℥ss.
Spiritûs ætheris, f.℥j.
Aquæ camphoræ, f.℥iiss. M.
Two tablespoonfuls every hour until sleep is induced.

Finally, when there is dyspnœa, a livid face, nervous congestion and a contraction of the pupil, opium is wholly contra-indicated.

Potassii Nitras may be given alone or in combination, to stimulate the secretions. Dr. Murchison recommends *nitre whey*, prepared by boiling ℥ij of nitre in Oj of milk, and straining.

Quiniæ Sulphas, is given by some physicians in large doses, gr. xx–xxx at the outset, to abort the fever and as an antipyretic. The effect of this treatment has not been generally satisfactory. The same may be said of the administration of an equal amount in the twenty-four hours, in divided doses. Small doses at regular intervals are more beneficial, as:

874. ℞. Quiniæ sulphatis, gr. ½–j.
Acidi sulphurici diluti, gtt. xx–xxx.
Ætheris sulphurici, gtt. xx.
Syrupi, f.℥j.
Aquam, ad f.℥j. M.
For one dose, every three or four hours.

Sulphuricum Acidum, and the other mineral acids, are largely used and favorably spoken of. (F. 867, 868.)

VARIOLA—SMALL-POX.

W. H. BARLOW, M. D., MANCHESTER, ENGLAND.

Dr. BARLOW has no doubt that the exclusion of light exerts a retarding influence upon the progress of the pustules in their later stages, so that, instead of acuminating in the usual way, they shrink and shrivel about the sixth or seventh day of the eruption. But some of his cases of confluent small-pox have led him to believe that death may have resulted from the exclusion of light, the poison having, by the abstraction of the accustomed stimulus, been prevented from taking its usual course to the skin, just as patients die from the suffusion of the exanthem of scarlatina or measles. This view, which he supports by the history of a number of cases, leads him to the conclusion that the mode of treatment of small-pox by the exclusion of light, although very useful in the lighter cases of unmodified, and in all cases of modified small-pox, should be employed with caution in the graver cases of a confluent character. (*Lancet*, July 1st, 1871.)

DR. E. PRIDEAUX, ENGLAND.

This writer gives in the *Lancet*, 1877, the treatment of small-pox which he has employed with much success. On entering the small-pox hospital under his charge, the patients were ordered:

875. ℞. Acidi salicylici, gr. xx.
Sodii bicarbonatis,
Ammonii carbonatis, āā gr. iv. M.

This amount in water every two or four hours, according to the severity of the case.

In the later stages of the disease, gr. v of citrate of iron and ammonia were added to this mixture.

In the first stage of the disease the patients were placed in baths of 90° and cooled down to 70°, they being allowed to remain in them about fifteen or twenty minutes. These baths were administered every day, and in severer cases twice daily. After each bath they were painted over with a mixture of glycerine, gelatine and carbolic acid, in the following proportion:

876. ℞. Acidi carbolici, f. ℥ j.
Glycerinæ, f. ℥ vj.
Gelatinæ, f. ℥ j.
Aquæ, f. ℥ xxvj. M.
For local use.

As soon as the pustules were full, those on the face were pricked, if necessary, and the gelatine mixture painted on frequently. All the patients had at their own desire a pot of the mixture, with a brush, in order that they might paint their faces frequently. They said it relieved the pain, and entirely prevented any itching. It kept the skin soft and moist, acting as an antiseptic, and preventing any unpleasant smell. In this stage of the disease each patient had a warm bath daily. Later on, soda in considerable quantity was put into each bath, and the patients well washed with carbolic soap, to aid the desquamation and so expedite their removal from the hospital.

The results were very gratifying, in that there was an almost entire absence of pitting, whilst the marks left even in the most severely confluent cases were such as would almost disappear after a short time; and the number of confluent cases was rendered much smaller by the eruption being checked both by the local and constitutional measures employed.

DR. W. HITCHMAN, ENGLAND,

States (*British Medical Journal*, Feb., 1879,) that he has attended hundreds of cases of small-pox without a single fatal issue, which he attributes solely to treating it with full doses of *belladonna* or *atropia*. He adds that he has suggested to several professors in France, Germany, Holland, and Italy, the value of *atropia* in small-pox all of whom have communicated to him their high opinion of its therapeutic value. In fact, the medicine, when appropriately given, neutralizes the disease, and no morbid remedial augmentation, however temporary, is usually witnessed, unless the doses have been unnecessarily, and therefore injuriously large.

RÉSUMÉ OF REMEDIES.

Belladonna. See above.

Camphor is advantageously employed, particularly in confluent or malignant small-pox, when the vital power is greatly depressed. It may be given alone or in combination with opium.

**Carbolic Acid* has been administered with marked benefit. It is more useful at an early stage of the disease, although, given afterward, it much modifies the symptoms, and hastens the curative process.

877. ℞. Acidi carbolici,
Acidi acetici, āā f.℥j–iss.
Tincturæ opii,
Spiritûs chloroformi, āā f.℥j.
Aquam, ad f.℥viij. M.

A tablespoonful every four hours, till the fever subsides. After the first dose, the mixture is rather grateful to the patient than otherwise.

**Opium* often fails to procure rest in the early stage of small-pox, but in the advanced stage of the disease, patients who are wakeful, but otherwise doing well, are benefited by it, given once or twice. But neither it, nor any other anodyne, is to be given when there is copious salivation and mucous expectoration, as the patient may die asphyxiated during sleep, from the secretion accumulated in the air-passages.

Sodii Sulphis. The sulphites are recommended by Professor POLLI, of Milan, as mitigating the febrile action, rendering the confluent and malignant forms benignant, shortening the course of the milder forms, and in all cases accelerating convalescence.

Sulphuricum Acidum Dilutum. In confluent small-pox, treatment by dilute sulphuric acid, ♏xv–xx, with gr. j of quinine, every three or four hours, together with stimulants and nutritives, is an excellent one.

TO PREVENT PITTING.

Amylum. A thick mucilage of starch has been used as a local application to prevent pitting, with excellent effect. The entire surface of the body should be first sponged with tepid water.

Argenti Nitras. VELPEAU and other French writers recommended the practice of opening each vesicle on the third or fourth day of the eruption, and touching each with a stick of the nitrate scraped to a point. This, however, is a tedious and painful process, not unattended with danger. It has been recommended to wash the face on the fourth or fifth day with a strong solution of the nitrate.

Calcis Aqua. The application of cotton-wool, soaked in a mixture of equal parts of lime-water and olive oil, is said to be an efficacious one.

Carbolicum Acidum. Dr. H. YATES reports a case (*Lancet*, January 25th, 1868,) treated with success by the following ointment:

878. ℞. Acidi carbolici, f.℥ij.
Adipis, ℥ij. M.

The ointment was colored with lamp-black and applied, thickly spread on wadding. It was changed every second day, the parts first washed with soap and warm water, and then with warm water impregnated with carbolic acid.

Glycerina. The following application is recommended by J. F. MARSON:

879. ℞. Glycerinæ, 1 part.
Aquæ rosæ, 2 parts. M.

Apply (after the pustules have discharged, and the discharge has begun to dry) freely for a few days, until the scabs begin to loosen.

Hydrargyri Unguentum. Inunction of mercurial ointment has been advised by Prof. BENNETT and others, but excessive salivation may follow its use. The following ointment is employed in the Children's Hospital, Paris:

880.	℞.	Unguenti hydrargyri,	℥ xxv.	
		Ceræ flavæ,	℥ x.	
		Picis nigræ,	℥ vj.	M.

**Iodinium.* The tincture, applied once or twice a day, is a remedy which has been long used. Although it does not absolutely prevent pitting, it usually renders the marks and cicatrices less evident.

Zinci Carbonas, Prof. BENNETT, of Edinburgh, prefers the following to all other ointments:

881.	℞.	Zinci carbonatis,	℥ iij.	
		Zinci oxidi,	℥ j.	
		Olei olivæ,	q. s.	M.

The same object is said to be obtained by treating the whole surface thickly with powdered calamine. This application has a very soothing effect.

EXTERNAL MEASURES.

Cold Baths. Dr. CURSHMANN, in ZIEMSSEN's *Cyclopædia,* maintains that baths are only useful in the premonitory and eruptive stages. But considering that the greatest danger in small-pox is during the fever suppuration, Dr. CLEMENT, of Lyons, thinks that it is to this period of the disease that treatment should be directed. The most noticeable effects produced by baths on small-pox patients are, a fall in the temperature, often sudden and of some degrees; cessation of the delirium soon after the first bath; and a great reduction of the pulse-rate and of the respirations. The first baths should always be of a temperature from 80° to 85° F. The effect of the bath must be carefully gauged by the thermometer. The patient should be submerged beneath the water up to his shoulders; and when he is put to bed he should be enveloped in a sheet, and covered only with a simple woolen covering. Two or three baths may be given in the twenty-four hours.

YELLOW FEVER.

GREENSVILLE DOWELL, M. D., GALVESTON, TEXAS.

This experienced physician directs that as soon as the first symptoms come on, the patient should be put to bed at once, and comfortably covered. If the stomach is full, it should be emptied by an emetic of ipecac. or mustard. If such is not the case, a moderate dose of castor oil or other mild laxative should be administered. Should inceptive chilliness be followed by perspiration, the patient should not be disturbed; but if the skin is dry and there is much thirst, warm teas of orange leaf or sage may be given.

Should there be vomiting at the outset, neither emetics nor warm drinks should be given, but instead of them, sinapisms should be applied to the epigastrium, and small pieces of ice be swallowed. Should these measures not check the vomiting, the patient should be cupped freely over the stomach.

When the fever is high and the pain in the head and back is great, he prescribes the following:

882. ℞. Hydrargyri chloridi mitis,
Quiniæ sulphatis,
Pulveris opii et ipecacuanhæ, āā gr. xij. M.
Make four powders. One every three hours.

This is to be continued with more or less frequency as long as the fever lasts.

If the fever continues high and the skin hot, it may be reduced by:

883. ℞. Tinct. aconiti fol., gtt. x.
Spts. æth. nitrici dulcis, ℥j. M.
This amount in a wineglassful of water, every three or four hours.

In forty or fifty hours after the commencement of the disease, the fever subsides and the stage of calm comes on. If this is associated with much exhaustion, stimulants are demanded; if with marked restlessness, valerianate of zinc, gr. v–x, or morphia, gr. $\frac{1}{4}$, will be called for, repeated as necessary. When there is retching and vomiting, the following mixture may often be used with the best results:

884. ℞. Morphiæ sulphatis, gr. iv.
Creasoti, ℥j.
Spiritûs vini gallici, f.℥iv. M.
A tablespoonful every three hours, as needed.

The stomach, at this stage, is generally swollen and sore, which should be met by mustard or blisters. If black vomit appears, the above brandy and creasote mixture should be alternated with tincture of chloride of iron, gtt. xv, or solution of the perchloride of iron or tannic acid. In the stage of calm, Dr. DOWELL never gives quinine. When there is suppression of urine, nitre or buchu is called for.

The patient should have light and nutritious food, regularly administered, and should be rigidly kept in bed, and prevented from any but the most necessary movements. Relapses are easily provoked, and are far more dangerous than the first attack. Embolism is a frequent cause of death, and must be guarded against by complete quiet.

DR. CHARLES BELOT, HAVANA.

This writer, Director of the Hospital for Yellow Fever at Havana, considers *local blood-letting*, at the outset of the disease, indispensable in most cases. Cuppings are preferable to leeches. Eight cups on the nape of the neck, ten on the loins, and eight on the stomach, generally suffice to alleviate the symptoms; and if, four hours after the first application, there is not sensible amelioration, let it be repeated.

For the pains in the head and loins, sinapisms and mustard foot-baths are needed. *Tincture of aconite*, given in doses of 6 drops in 12 ounces of water, administered by spoonfuls every hour, should never be neglected in the first or congestive period.

If the disease has commenced with vomiting, if the tongue is charged with mucous deposits, let an emetic be given, composed of an infusion of 36 grains of ipecac. in 4 ounces of warm water. When this commences to produce its effect, the vomiting will be assisted with warm water, and continue until the ejections are clear as water.

If the tongue is not charged with mucous deposits, if the patient complains of great pain in the epigastric region, vomiting must be avoided, as its consequences would be grave.

About four hours after the vomiting, the patient will have less fever, the pulse will be less frequent and strong, the skin will be moist, or there will be general transpiration. It is necessary to take advantage of this moment, to administer a purgative of castor oil or of sulphate of magnesia. If this remedy fails to act after two or three hours, its action should be promoted by injections of warm sea-water, or of sweetened water and olive oil.

With free ventilation, quiet, and warm drinks to aid transpiration,

this treatment will often disperse the alarming symptoms in three days. When, however, the disease continues its progress, the symptoms of the second period are presented.

The headache should be resisted with flying blisters on the nape of the neck, with compresses of brandy with camphor and belladonna on the forehead. To soothe the oppression of the stomach, apply compresses of brandy with camphor and belladonna, and give internally tincture of nux vomica, in very small doses. When, despite the compresses, the pain in the stomach persists, a flying blister is applied at this point. If nausea occurs, *bicarbonate of soda* alternated with *nux vomica* is the most useful remedy. If the disease advances and vomitings occur, they must be treated according to their character. If they are white, foamy, acid, holding in suspension flakes of mucous membrane, black vomit is not far off. It is often arrested by bicarbonate of soda in small doses repeated every half hour, alternated with carbonate of magnesia. If the vomitings are bilious, nux vomica and arsenical solution will be employed in preference, and will be continued if black vomit occurs. A little fresh water, slightly sugared, may be allowed, and thirst may be appeased with small pieces of ice.

Sometimes hemorrhages occur without black vomit. They constitute of themselves a grave condition. Limited hemorrhages, for example buccal and nasal hemorrhages, are combated with tonic applications, ice, and astringents, as dilute sulphuric acid, etc.

When hemorrhages have not taken place, if the symptoms invade the brain, cold water to the head, blisters to the nape of the neck, and calomel internally, are remedies to which recourse should be had. But this will be frequently useless, because the disease progresses with frightful rapidity.

The remittent and intermittent types begin with or without chills. This is a very important therapeutic indication. This first symptom (the chill) coming on perhaps after a meal, perhaps in the morning between two and three o'clock, an emetic, administered at once, disembarrasses the stomach of ingesta and saburral deposits, and determines a favorable transpiration. After the emetic, the patient should be allowed repose and sudorific drinks. If the symptoms call for an application of cupping to the nape of the neck, to the loins, or the abdomen, according to the indications of local congestion, it is rarely that twelve hours pass without the patient showing marked relief. If the congestive symptoms do not yield to the first cupping, they will be

overcome on the second application, and, by completing the effect of the emetic with a purgative. In most instances, after this treatment, the remission will be found to come, and this is the most important moment for the physician. This remission often occurs after the first twenty-four hours—in other instances, it is delayed two or three days. When, after the emetic and purgative, a general relaxation is observed, but insufficient to bring on transpiration, use should be made of diaphoretics and preferably of *Dover's powder*, taken every hour in doses of a grain, until sweat is presented.

In this remission, *sulphate of quinine* must be administered in a dose of thirty-six grains, taken at once in a half-cup of black coffee without sugar. When the intermission is complete, its action is marvelous; the disease is immediately moderated. When the disease commences with chills, followed by abundant sweats after the emetic and purgative, there is assurance that there will be another remission, and the quinine is in order.

In cases where sulphate of quinine cannot be employed, *calomel* is an excellent remedy, especially when, in the absence of remission, the tongue shows itself humid, loaded, white, large, the gums engorged, the stools difficult, or when there is bilious diarrhœa. Dr. B. administers from twenty-four to thirty grains, in two-grain doses every half hour, until the characteristic stools appear. Very often, after the administration of calomel, remission of the fever and of the congestive symptoms takes place; the skin becomes moist, and sulphate of quinine, the effect of which will be more sure in proportion to the distinctness of the remission, may then be appropriately used. Its effect is assisted by oil and by emollient injections. If there was no chill in the commencement, *aconite* and *tincture of digitalis* will be pressed. These are ordinarily sufficient to bring the patient into full convalescence. Dr. B. disapproves of combining calomel and quinine.

DR. F. PEYRE PORCHER, CHARLESTON, S. C.

This writer sums up the treatment of yellow fever as follows, (*Transactions of the South Carolina Medical Association*, 1872): 1. The treatment must begin *early*. 2. The first step should be a large mercurial purge, followed by a saline cathartic, thus emptying the bowels, and disgorging the liver and the glandular apparatus. 3. Simultaneously, and from the very beginning, use revulsives to the surface of the abdomen, hot stimulating baths to the lower extremities

—with the assiduous and protracted application of ice-cold water to the head, hands and arms, *as long as there is a continuance of abnormal heat.* 4. All purgatives, all active depressing agents, must now be discontinued absolutely, and give place to a mild alkaline diuretic and diaphoretic, containing morphia. Cold sponging, and the use of sinapisms, and hot mustard pediluvia, are to be continued so long as headache, morbid heat of surface, with high thermometric range, indicate the existence or progress of combustion and destructive tissue metamorphosis—*fever*, in other words. Then, too, the recuperative powers of nature are to be trusted to, aided, if need be, by mild tonics, moderate stimulants, and nourishing diet.

EDWARD FOWLER, M. D., NEW YORK.

This writer (*Medical Record*, September, 1878,) from an experience of several severe epidemics in cities of the southern states, distrusts the line of treatment usually pursued, as laid down by most authors. He does not believe that the perspiration sought to be produced at all helps the case; mercury, he regards in all cases of true yellow fever as "hurtful to an extreme degree," and only valuable when the fever is mild and blended with an intermittent; he is wholly adverse to blisters; quinine, in the therapeutics of the true disease, has no place whatever.

Having thus discarded the traditional treatment, he adopted one which he states to have been much more satisfactory.

During the first hours of the attack, he recommends hot acid drinks in teaspoonfuls at a time, to allay thirst. Small quantities of broths at regular intervals will prove the best nutriment. For the costiveness which usually attends the disease, Seidlitz powders are unobjectionable. For the tympanitic condition of the abdomen, enemas containing carbonate of soda, gum fœtida, and minute quantities of aloes, act not only promptly and delightfully, but often snatch the patient out of a state of great danger, and establish improvement.

For the prominent and distressing symptom of nausea, poultices to the epigastrium are demanded, and the following mixture, which should be given throughout the entire disease, beginning with the second day:

885. R. Potassii iodidi, gr. ij.
Liquoris potassii arsenitis, gtt. ij. M.

This amount for a dose every two or three hours, in any convenient vehicle.

The effects of this combination are uniform in relieving the tenderness of the stomach and keeping black vomit at bay.

Another important feature of Dr. F.'s treatment is to give a full dose of *opium* at the *commencement* of the disease, as much as morphiæ sulphas, gr. i–ij. Of the use of this remedy he says: "It is a drug that depends for its remedial action on the stage of the fever in which it is given. Administered with the accession of the fever, and when the sufferer is writhing in universal pain, and given in sufficient quantity, it will not only relieve and give gentle rest, but clear up the troubled atmosphere of the brain, and roll back every darkening cloud from the mind, and leave no vestige of opium stupor or even drowsiness. But if given to check vomiting or diarrhœa, or restlessness after the first twenty-four hours, and then in small quantities even, it induces new symptoms and endangers the patient."

RÉSUMÉ OF REMEDIES.

Arsenicum. Dr. CHARLES BELOT says that, toward the end of the second period, when the vomiting cannot be arrested, when the patient has continual nausea, when the vomit contains bile or mucosities filled with blackish or sanguinolent streaks—in a word, when the characteristic signs of pronounced yellow fever are developed, there is no better remedy than arsenic. It is given by him as arsenious acid dissolved in water. It will be seen above, that Dr. FOWLER uses it throughout the disease.

Belladonna. According to Dr. BELOT, compresses of camphorated alcohol and belladonna, placed upon the epigastric region, diminish beating of the cœliac trunk, the epigastric pain, and the vomiting. Laid at the bottom of the abdomen, they quiet the colic pains and facilitate the passage of urine.

Camphora, combined with belladonna, finds its use, internally, in combating hiccough, and camphor alone is especially useful in the typhoid period of the disease.

Hydrargyrum Chloridum Mite. There is great discrepancy, not only as to the value, but even as to the safety of giving calomel in yellow fever. The safest plan is to confine its exhibition to those cases where obvious evidence of malarial poison co-exists, and to use moderate doses. For the various opinions, see above.

Ipecacuanha. As an emetic, at the outset of the disease, this drug is preferred by most physicians.

Nux Vomica has been found by Dr. BELOT, to act very favorably on the epigastric distress.

Opium, in all forms and doses, is discarded by many. Dr. AITKIN especially warns against it when there is tendency to suppression of urine. For Dr. FOWLER'S employment of it, see above. It will be noticed that he is directly at issue with Dr. DAGNINO, in the use of it for the latter symptoms.

Plumbi Acetas. For the gastritis, Dr. G. B. WOOD knows nothing better than the acetate of lead—1 or 2 grains every hour or two, and continued until from 30 to 40 grains have been taken; the astringent properties of this remedy may also render it useful in preventing the black vomit, which is now admitted to be a sort of hemorrhage.

Quiniæ Sulphas is given by Dr. M. DAGNINO (*Monograph on Yellow Fever*, New York, 1878,) in small and repeated, by Dr. BELOT in large and rare, and by Dr. DOWELL in medium doses. Various practitioners aim to establish cinchonism promptly, in all cases; others, and the more recent observers of the complaint, would confine the early exhibition of quinine to cases with obvious malarial symptoms, and employ the drug later, merely for its tonic properties. In the continuous form of the fever, quinine certainly exerts little or no effect.

Potassii Chloras. Dr. H. R. FROST (*Charleston Medical Journal and Review*, vol. VIII,) has found the chlorate of potash an excellent remedy in the febrile stage of the disease. After having freely evacuated the bowels, he gives the chlorate in the quantity of 3 or 4 drachms, in divided doses, during the twenty-four hours, employing, at the same time, when necessary, leeches to the temples and iced water to the head.

Potassii Iodidum is employed with marked success against the nausea, by Dr. FOWLER. (F. 885.)

Ricini Oleum is generally given the preference, as a laxative.

Salcylicum Acidum. Dr. HARTWIG BÜNZ, of Savannah, states (*Berliner Klinische Wochenschrift*, September 2d, 1878,) that in the epidemic in that city, of 1876, finding that the fever was of an intermittent type, he resolved to make an experiment with salicylic acid. He gave adults a dose of 1½ drachms, either in solution, in capsules, or rubbed up in sugar; and if the stomach rejected it, he gave a double dose per rectum. The results were excellent. Of one hundred and seventy-nine patients, only four died. He regards the acid as the most powerful antipyretic against yellow fever, both of the intermittent and remittent type, but has no experience of it in the continuous form.

Sulphuricum Acidum is advantageously used in small, dilute doses, in threatened black vomit.

Tannicum Acidum. Dr. BELOT recommends its employment where nitric acid reveals the commencement of albuminous deposit in the urine. Its use must be suspended if the albumen persists or increases. Tannin is administered every hour, in grain doses, in a spoonful of water. When the twelfth grain has been given, and it works no favorable change, it is replaced by arsenic, in his method.

VII. DISEASES OF CHILDREN.

General Remarks on the Therapeutics of Children—Anæmia—Bronchitis (Acute, Chronic, Capillary)—Cholera Infantum—Convulsions—Coryza—Croup—Dentition—Diarrhœal Disorders—Diphtheria—Hydrocephalus—Infantile Paralysis—Infantile Syphilis—Parotitis (Mumps)—Pertussis—Pleuritis—Pneumonia—Rachitis (Rickets)—Rubeola (Measles)—Scarlet Fever.

GENERAL REMARKS ON THERAPEUTICS OF CHILDREN.

ROBERT FARQUHARSON, M. D., F. R. C. P., LONDON.

Understanding by "children," those more than one year old, this writer (*British Medical Journal*, Nov., 1877,) points out that it is a common error of the text-books to teach that they require much smaller doses of most of our active drugs than adults. This is in most instances an error, and a material one, as it leads to inefficient medication. Children do not present in anything like the same degree, the special peculiarities of idiosyncrasy; the effects of medicines are pretty constant in their case, and we may generally anticipate the satisfaction of finding that our remedy has acted as we wished, and without any of that excess or eccentricity of action which too often brings undeserved discredit on the medical man.

Dr. F. is willing to confirm the usual opinion of the dangers of *opium* in very early childhood, but those within the period of life selected for consideration can bear moderate quantities, and *chloral* seems always well borne. For instance, he had under treatment a little rickety girl suffering from recurring attacks of laryngismus stridulus, to whom $3\frac{1}{2}$ grains were given with benefit thrice daily. The same patient took 10, and finally 15 grains of *bromide of potassium*, before any beneficial effect was attained; he has always observed that this drug is well taken by children. Twenty and thirty grains have been no uncommon dose to reach in patients of from eight to ten, suffering from epileptic seizures, and in them he has never observed any symptoms of bromism. The opposite seems to hold good of iodide of

potassium, for he has several times seen papular and petechial eruptions produced by 1-grain doses of this drug.

Arsenic is usually well taken. He should have no hesitation in ordering 5 minims of Fowler's solution for a child six years old. Ten minims have been occasionally ordered. When physiological symptoms present themselves, as they sometimes do, it is important to know that they do not assume the usually described type, and that vomiting is the most usual symptom. He has seen this follow a single 1-minim dose; more rarely we meet with a red and irritable tongue, dry lips, injected eyes, and abdominal pain; girls being, contrary to the statement of RINGER, more susceptible to the overaction of the drug than boys.

Prussic acid may be pretty freely prescribed, and he has given nearly 2 minims to a child of two years, with some slight benefit, for pertussis; and at the age of seven, he has given nearly 3 minims for the successful arrest of sickness.

We know that *emetics* must be given in very full doses. The intestinal canal of young children seems strangely insusceptible to the action of purgatives, and large quantities must be given before satisfactory action is attained.

Belladonna is a drug which can be borne by children in doses fully as large as given to an adult.

J. MILNER FOTHERGILL, M. D., LONDON.

This experienced therapeutist points out that owing to the impressibility of the nervous system in children, *depressants* should only be given for but short periods in acute disease. Again, many sick children have ravenous appetites, and the more they eat, the more quickly they perish from inanition, in consquence of overloading the already weakened digestive powers. Diarrhœa is, especially in children, a natural effort to remove indigestible masses, and if checked with astringents, frequently leads to enteritis. A form of diarrhœa with green stools is brought about by over-suckling or insufficient nutrition. It does not require medicine, but richer and more abundant food. In weakly and scrofulous children, the secretions should be examined. They will often be found excessively acid; in which cases alkalies, especially potash, with good nourishment, will be found to remove all the symptoms.

EDWARD JOHN WARING, M. D., LONDON.

In childhood (as in old age) the same doses of medicines are not generally as well borne as in youth and manhood, and much nicety is sometimes necessary in regulating the dose. Several exceptions, however, present themselves; thus, in childhood (and in old age) much larger quantities of *mercury* are necessary to induce salivation than in manhood; indeed, Dr. CLARKE states that, in a practice of twenty years, he never saw a child truly salivated; an observation corroborated by the experience of others. Prof. GRAVES ascribes the difficulty of inducing salivation in children and in old persons to the undeveloped state of the salivary glands in the former, and to their atrophied state in the latter. On the other hand, in infancy and childhood, *opium* in every form is a remedy that requires the utmost caution in its administration. Two and a half drops of laudanum have destroyed an infant three days old; three drops, a strong child of fourteen months; and four drops, a child of a few weeks old (CHRISTISON.) In infancy and childhood, *blisters* allowed to remain long in contact with the skin are apt to induce ulceration and gangrene; and *leeches*, on account of the thinness of the skin, and the vascularity of the subjacent tissues, draw more blood, and consequently make a more decided impression on the system in an infant, than a proportionate number would produce in an adult.

EDWARD ELLIS, M. D., LONDON.

Children bear emetics well, but blood-letting badly. Blisters should be resorted to very seldom, as their consequences are often most injurious. More than one potent remedy should not be administered at a time. Remedies should be of moderate bulk and as palatable as possible. Narcotics and irritants of all descriptions should be given with caution. Of particular remedies in children Dr. E. comments on

Ferri Phosphas. This preparation of iron, especially in the compound syrup, with the phosphates of lime, soda and potash (PARRISH'S Chemical Food,) is often tolerated in infancy when other ferruginous preparations are not. Its pleasant taste and pretty color are to its advantage. Dr. ELLIS has given it in thousands of cases, and states that its value in general debility, rickets, scrofula, etc., cannot be over-estimated.

Morphia. The very best preparation of opium we have for children is the *bimeconate of morphia.* The most suitable form is in solution.

Hyoscyamus is of the greatest service in children's diseases, as a safe and efficient sedative, without the deleterious effects of the preparations of opium. For instance:

886. ℞. Tinct. hyoscyami,
Syrupi papaveros, āā ♏v.
Aquæ menthæ, f.℥j. M.
As an anodyne for a young infant.

887. ℞. Tinct. hyoscyami, ♏v-xv.
Liquoris ammonii acetatis, ♏x-xxx.
Vini ipecacuanhæ, ♏x-xv.
Aquæ camphoræ, f.℥ij-iv. M.
In bronchitis, etc.

Aconite is one of the most valuable of remedies in the early stage of acute inflammations in children. It is anodyne and antiphlogistic. It should be administered in small and frequent doses to produce its best effect, say one-fourth or one-half a drop of the tincture of the root every hour. An experience of years has confirmed Dr. ELLIS in his opinion of the value of this method in almost all acute inflammations. It is of less service, however, in the first three years of life than after this period has passed.

Quiniæ Sulphas is probably the most potent tonic for children with which we are acquainted. Small doses answer best for them, and it is often well, particularly after very exhausting diseases, to precede the quinia with gentian, chiretta, columbo, or some of the other minor tonics. (One of the most eligible forms of the cinchona alkaloids for children is that given F. 809.)

M. JULES SIMON, M. D., PARIS.

In a clinical lecture on the therapeutics of early life (*Moniteur Therapeutique*, August 7th, 1877,) this writer lays particular stress on the following points: *Tincture of iodine* should not be applied pure in tubercular children; it should be diluted either with glycerine or with some unguent. Neither *iodide of potassium* nor *iodide of iron* should be given to children under two years of age, except perhaps in cases of acute hereditary syphilis, where small doses may be administered. It may be given to the nurse if the child have not been weaned. Older children bear the drug well. Those who are especially benefited by it are patients robust in appearance, but with soft, inelastic flesh and with manifestations of incipient scrofula. Albuminuria has been observed by M. SIMON in a large number of cases to follow paintings

of the surface with tincture of iodine, especially when applied to eruptions. Iodide of potassium produced the same result, but in a smaller degree.

Pilocarpin has lately been much employed in children's diseases by Prof. DEMME, of Berne. The general conclusions drawn from his cases are, that pilocarpin exhibits its sialogogic and diaphoretic properties in a very marked manner in childhood, and that it is very well borne at the tenderest age in the doses of gr. $^1/_{10}-^1/_5$, its sialogogic effect being more prominent in the younger, and its diaphoretic effect in the older children; that any unfavorable after-effects, even in the youngest children, are quite exceptional, and are preventable by administering minute doses of brandy prior to the injection; and that no influence on the action of the heart is perceptible. The cases best adapted for its employment are desquamative parenchymatous nephritis with dropsy, following scarlatina, diphtheria, etc. A beneficial diuresis in most of the cases ensues, the quantity of albumen which the urine contains never being increased, but rather diminished.

SPECIAL THERAPEUTICAL METHODS.

As it is often difficult and sometimes injurious to the child to force it to swallow medicines by violence, it is desirable to employ other methods as much as possible.

Remedies in the form of small powders can be dropped on the back part of the tongue.

Hypodermic injections are easily given and rapidly absorbed, but are painful.

The delicacy of the epidermis renders *inunction* a most convenient and useful mode. Half a drachm of castor oil rubbed over the abdomen will usually promptly relax the bowels of an infant.

Dr. DEWITT C. WADE has recently laid before the profession a suggestive article on this subject. (*Michigan Medical News*, July 10th, 1878.) He has found *glyceroles* the most effective forms. He applies them to any part of the body, first cleansing the skin of its oily secretions by sponging with the following alkaline solution:

888. R. Liquoris ammoniæ, ℥x–f.℥j.
Aquæ, f.℥iv. M.

Having carefully washed off this alkali, he immediately applies the glycerole. As examples he gives:

889. ℞. Morphiæ sulphatis, gr. j–iij.
Glycerinæ, f.℥j. M.
For an anodyne endermic glycerole.

890. ℞. Quiniæ bromidi, gr. xx–℥j.
Glycerinæ, f.℥j. M.
For a tonic or anti-malarial glycerole.

891. ℞. Extracti carnis, f.℥j.
Glycerinæ, f.℥iij. M.
For a nutrient glycerole.

It is astonishing, says Dr. W., how quickly this is absorbed and how promptly its effect is noticed in strengthening the pulse. Dried albumen and extract of malt may also be given very successfully to the most feeble infants in this manner.

Medicated *baths, lotions, liniments* and *poultices* are far more efficient in children than in adults. Very feeble infants derive much benefit from nutritive baths of milk, beef tea, etc., which should be of the temperature of the body, and in which they should remain for hours, if need be. The *steel-bath* is an excellent tonic.

892. ℞. Ferri sulphatis, ℥ss.
Aquæ (temp. 95°,) gall. iv. M.
For a bath.

So also is the *salt-bath;* four ounces of sea-salt to four gallons of water. For the night-sweats of children, rubbing the chest and neck with half a drachm of tincture of belladonna at night will be found most serviceable. In all other inflammatory affections of deep-seated organs, warm poultices and fomentations will prove to act much more positively than in adults.

In children at the breast, certain medicines are successfully given by administering them to the nurse, and thus introducing them to the child through its food. *Iron, iodine* and *iodide of potash* can all be exhibited in this way, and in weak, rachitic infants it is by far the best method. Dr. GEMMEL (*Berliner Klinische Wochenschrift,* Nov. 15th, 1877,) has experimented in feeding cows with such drugs, mingled in their food, and giving their milk to children. The milk showed the characteristic reactions of iodine, etc., and had positive remedial properties.

ANÆMIA.

J. MILNER FOTHERGILL, M. D., LONDON.

The general treatment of anæmia in children, is by *iron*. But there are conditions both where a syphilitic taint exists, and where symptoms of it are not discoverable, where iron alone fails; but if combined with minute doses of *mercurials*, it acts promptly and beneficially.

DR. BOSSU, PARIS.

893. ℞. Ferri redacti, ℥ss.
Pulveris canellæ,
Pulveris gentianæ,
Magnesiæ, āā gr. xv. M.

Divide into twenty powders; one morning and evening, for children, in cases of atony of the digestive tube.

RÉSUMÉ OF REMEDIES.

**Calcii Phosphas* is strongly recommended by Dr. RINGER, in the anæmia of young, rapidly-growing persons, in the dose of 1 or 2 grains, several times a day.

**Ferri et Ammonii Citras* is useful, especially in irritable states of the stomach, when it may be given with infusion of calumba.

**Oleum Morrhuæ.* Dr. ELLIS remarks that the secret of giving cod-liver oil successfully, is not to give too much, and to give it at the right time. Two or three drops for a young infant, ½ a teaspoonful for a child of six or seven, is sufficient. The proper time is soon after meals and on going to bed.

Phosphorus. Dr. ELLIS says that perhaps the very best remedy for anæmia in children, is this drug. He combines it with nux vomica and iron:

894. ℞. Phosphori, gr. $\frac{1}{50}$.
Ferri redacti, gr. j–ij.
Extracti nucis vomicæ, gr. ¼. M.

For a pill. Twice daily.

Or with quinine:

895. ℞. Phosphori, gr. $\frac{1}{50}$.
Quiniæ sulphatis, gr. j. M.

For one pill, thrice daily, for a child of eight or ten years.

BRONCHITIS, ACUTE, CHRONIC, CAPILLARY.

PROF. J. LEWIS SMITH, M. D., NEW YORK.

At the outset of acute bronchitis in children, it is often of great service to exhibit small and repeated doses of *veratrum viride*, as the following, for a child five years old, in the first stage of the disease:

896. ℞. Tinct. veratri viridis, ♏xij.
Syrupi scillæ compos., f.℥ij.
Syrupi balsami tolutani, f.℥xiv. M.
One teaspoonful every two or three hours.

When the pulse lowers, the temperature falls, and moisture appears upon the skin, the medicine should be omitted. The remaining treatment is by expectorant mixtures, etc. The chronic laryngitis occurring in children in general good health, sometimes resulting from an acute attack, is an obstinate affection. The patient should be warmly clad, and every effort made to guard against taking cold. The most satisfactory treatment is the application of tincture of iodine upon the neck, directly over the larynx, and in some cases, of a solution of nitrate of silver—10 or 20 grains to the ounce—to the fauces, so that, if possible, some of it may enter the larynx. Little benefit is derived from stimulating expectorants. The following recipe has proved beneficial in a number of cases:

897. ℞. Extracti cubebæ fluidi, ♏xl–f.℥j.
Syrupi simplicis, f.℥ijss. M.
A teaspoonful three or four times daily.

Chronic laryngitis, dependent on syphilis or tuberculosis, requires specific treatment; local measures have but little effect.

DR. R. FOWLER, MISSISSIPPI.

This physician reports (*Transactions of the Mississippi State Medical Association*, 1876,) his treatment of *capillary bronchitis* in children, which is, in some respects, peculiar, and from which he has had the best results.

He commences with an emetic, turpeth mineral, gr. iij, or alum, ℥j. If there is tympanites, he avoids purgatives, but gives an enema of milk of assafœtida. For the fever:

898. ℞. Quiniæ sulphatis, gr. iij.
Potassii bromidi, gr. v. M.
For one dose, every three or four hours, until the fever abates.

When the temperature is above 103°, he places the child in a warm bath, to which cold water is rapidly added until the child's temperature falls to 99°. He also uses:

899. ℞. Tinct. aconiti, (Fleming,) gtt. j.
Ammonii muriatis, gr. iij. M.
This amount every two or three hours to reduce the circulation and thin the mucus.

The local treatment is important. He directs a mustard cataplasm every six hours to the posterior portion of the thorax; and in the intervals, have a constant relay of warm mush poultices completely enveloping the chest, preceded by thoroughly annointing the surface with camphorated oil, before the changing of each poultice.

For the cough, he uses chloral; sometimes chloroform by inhalation —and always gr. viij *iodide of iron*—the latter most frequently as an enema, in conjunction with brandy, and chicken or beef essence, and in convalescence, tonics. When all these measures fail, when the mucus collects so rapidly in the tubes, the dyspnœa becomes more and more urgent, the breathing ceases, the pulse not to be felt, he has recourse to *artificial respiration.* As a *dernier ressort,* he would especially recommend this measure.

J. M. DA COSTA, M. D., PHILADELPHIA.

900. ℞. Ammonii carbonatis, gr. xvj.
Spiritûs ætheris compositi, f. ℥ iss.
Syrupi tolutani,
Aquæ, āā f. ℥ j. M.
A teaspoonful every two hours; a stimulating expectorant for a child a year old, affected with bronchitis of two weeks' standing.

Counter-irritation to be applied to the chest by means of weak mustard plasters, (one part of mustard to four of Indian meal.) Also, if the child be much debilitated, 15 drops of brandy every four hours. When the child is seen frequently, so that the effect may be watched, there is no better treatment than relieving the lung mechanically by emetics. Hoffman's anodyne, in the above recipe, acts as a diaphoretic and quieting agent, which latter influence would not be obtained from sweet spirits of nitre.

901. ℞. Syrupi ipecacuanhæ, f.℥ss.
Liquoris potassæ citratis, f.℥ijss.
Misturæ glycerrhizæ compositæ, f.℥j. M.

A teaspoonful every three hours, for a child two years of age. Afterward, when the disease passes into second stage, to be changed to:

902. ℞. Syrupi scillæ, f.℥ij.
Tincturæ opii camphoratæ, f.℥ij. M.

Thirty drops four times a day.

903. ℞. Syrupi ipecacuanhæ, f.℥j.

A teaspoonful every ten minutes until vomiting is produced; to be repeated every second day. For ordinary acute bronchitis in a child a year old. Together with:

904. ℞. Ammonii carbonatis, ℥ss.
Syrupi senegæ, f.℥ss.
Syrupi tolutani, f.℥j.
Aquæ, f.℥ijss. M.

A teaspoonful thrice daily.

J. M. JULIAN, M. D., HOBOKEN, N. J.

In the suffocative capillary bronchitis of children, says this writer, (*Medical Record*, October 2d, 1871,) the indications are to get rid of the excessive mucous secretion as speedily as possible. For twenty-five years he has used for this purpose, with eminent success, the following:

905. ℞. Zinci sulphatis, gr. xij.
Tincturæ sanguinariæ, f.℥ij.
Aquæ, f.℥iss. M.

A teaspoonful in mild cases to a child one year old, every three hours; in severe cases, triple the dose, and give it every half hour or hour, regardless of vomiting.

PROF. JOHANN STEINER, M. D., PRAGUE.

In chronic bronchitis and allied conditions, where there is debility and much irritation from the cough, this author has seen very great relief from the following prescription:

906. ℞. Quiniæ sulphatis, gr. ij.
Pulveris foliæ digitalis, gr. vj.
Extracti opii, gr. j.
Pulveris sacchari albi, ad ℥j. M.

Divide into twelve powders; one every three or four hours.

RÉSUMÉ OF REMEDIES.

Aconitum, in half or quarter-drop doses of the tincture in the first stage of acute bronchitis, is very efficient.

Ammonii Carbonas. Dr. STIERLIN, of Schaffhausen, recommends carbonate of ammonia rather than emetic or other treatment in the broncho-pneumonia of young children and in the catarrhal attacks of infants. His doses range from gr. v–xx.

Ammonii Murias. Dr. H. C. Wood (*New Remedies*, April, 1872,) has obtained, in obstinate acute bronchitis, after the first intense stage, more apparent good from the use of muriate of ammonia than any other remedy. The best formula is as follows:

907. ℞. Ammonii muriatis, ℥ ij.
Extracti glycyrrhizæ, ℥ j.
Mucilag. acaciæ,
Aquæ, āā f.℥ iij. M.

One teaspoonful every three hours for a child a year old.

Ipecacuanha. Dr. BEDFORD BROWN (*American Journal of Medical Sciences*, October, 1870,) has found the early use of an emetic of ipecacuanha very serviceable in a number of cases in children; a combination of ipecacuanha and quinine being continued afterwards.

Hydrargyrum. Dr. J. C. THOROWGOOD (*Practitioner*, May, 1878,) has found frictions with *oleate of mercury* to disperse threatening pulmonic dullness in bronchitis. Particularly in catarrhal bronchitis tending to pneumonia, with blocking up of air-cells and consolidation of lung, he believes we may employ mercury without fear.

Quiniæ Sulphas is called for to reduce the fever in pyrexial cases. (F. 898.) And also as a tonic in convalescence.

Tannicum Acidum. In very chronic cases attended with persistent mucous râles over the basis of the lungs, tannic and gallic acids are especially useful. (ELLIS.)

Veratrum Viride is employed in the early stages by Dr. J. LEWIS SMITH and others. (F. 896.)

CHOLERA INFANTUM.

J. LEWIS SMITH, M. D.,

Professor in Bellevue Hospital Medical College, New York. Prompt measures are required in cholera infantum, as the child rapidly sinks under the prostrating influence of the frequent watery discharges. Some evacuant is indicated at the outset, if there be any irritating material in the stomach or bowels, causing or keeping up the trouble. Small doses of ipecacuanha (from two to five grains) are often beneficial. When, however, the stomach is irritable and the alvine discharges fail to carry off the intestinal contents, *calomel* is the great remedy. As it is slow in its operation, castor oil may be administered

after it with benefit, or its operation may be aided by a simple enema. It should not be given to the extent of more than one or two doses.

If there be no indigestible substance in the intestines, purgatives are contra-indicated, as they are then hurtful. The continuance of the diarrhœa for several hours affords a pretty sure evidence of the removal of any irritating matter which may have been present, and hence no purgative is required. The objects of the treatment then should be to diminish the frequency of the evacuations, and improve their character. No time should be lost. *Opium* in some form is the chief reliance.

If laudanum be used, it may be administered in one-drop doses, every two or three hours, to a child one year old. It effects should be watched. If the evacuations are partially checked, and there are signs of stupor, stop the opiate, or at least give it less frequently.

Astringents, and often alkalies, may be employed as adjuvants to the opium. The opiates and alkali may be employed in the following combination:

908. ℞. Tincturæ opii, gtt. xij.
Misturæ cretæ, f. ℥ iss. M.
One teaspoonful every two or three hours to an infant one year old.

To this mixture an astringent may be added, as tincture of catechu or kino. It should be borne in mind, however, that astringents are less tolerated by an irritable stomach than opium or chalk. When they are vomited, therefore, they should be discontinued, even in cases in which they would doubtless be serviceable if the stomach were retentive.

By means of the opiate and astringents, if they be retained, the passages are rendered, in a few hours, less frequent, and the stools more consistent.

In cases in which calomel is employed our author does not recommend its use in larger doses than one-fourth of a grain morning and evening (together with the astringent and opiate,) to a child of one year.

Dr. S. also advises small pieces of ice in the mouth at the beginning of the attack, to combat the irritability of the stomach, and the application of mustard to the epigastrium.

In most cases, Bourbon whiskey or brandy, the best of the alcoholic stimulants, are required. They should be used from an early period

of the disease, both for the purpose of sustaining the vital powers and of diminishing the gastric irritability.

The diet should be simple, but nutritious, and taken often, but little at a time. If the child be at the breast, it should be confined to the mother's milk. If it be weaned, cold barley or rice-water, with whiskey or brandy, should be given in the commencement of the attack; afterward, milk or broth may be employed in addition.

909. R. Creasoti, gtt. j.
Aquæ calcis, f. ℥ ij. M.

One teaspoonful with a teaspoonful of milk, breast milk if the infant nurses repeated as required, for the vomiting so frequent in the summer epidemics of intestinal inflammation, in the cities.

This recipe is much used in the Nursery and Child's Hospital of New York city. Or, the following may be administered:

910. R. Potassii bicarbonatis, gr. xxv.
Acidi citrici, gr. xvij.
Aquæ amygdalæ amaræ, f. ℥ j.
Aquæ, f. ℥ ij. M.

Teaspoonful, repeated as required.

MEREDITH CLYMER, M. D., NEW YORK.

This author gives the following indications for the treatment of *cholera infantum:*

The instantly threatening symptoms, purging and vomiting, are to be stopped. Fermentation and not chymification, is going on in the stomach and duodenum. Hence, small doses of the *bisulphites of sodium and potassium*, with limed whey, will often act very happily, while the effect of poisonous drugs is always doubtful, and generally, positively harmful. *Mercury* is, at best, negative. *Opium* and its preparations will be found valuable, if not contra-indicated by cerebral epiphenomena. The effects should be carefully watched. Flannel, wrung out of hot water, and on which laudanum is poured, applied to the spine, will be found useful in checking vomiting. The function of the skin, which, in common with all the excreting organs, is inactive, must be excited. This may be done by gentle friction with woolen cloths, or a warm alkaline bath, in which the little patient should not remain longer than three minutes, being then quickly dried and wrapped in flannel. Food, of proper quality and quantity, should be given as soon as the stomach and bowels will tolerate it. Farinaceous articles are entirely inappropriate. Limed milk, to which a

little gelatine has been added, or rennet whey, may be given; but in protracted cases, attended with great prostration and rapid emaciation, the *raw meat diet*, prepared as recommended by Prof. TROUSSEAU, will be often seized with avidity and well borne. Lean beef or mutton is first finely hashed, pounded in a mortar to a pulp, and then passed through a fine sieve. The thick concentrated juice thus obtained is nutritious and digestible, and, when salted or otherwise flavored, quite acceptable. Give a half to three-quarters of an ounce, in fractional doses, the first day. If well borne by the stomach, increase the quantity day by day, until a quarter or half a pound is taken in the course of the twenty-four hours. For the first day or two, much of it may pass, hardly changed, from the bowels; but this alone should not occasion its discontinuance. If too long continued, however, this diet is liable to generate tænia. White of eggs, thinned with natural or artificial Seltzer, Vichy, or weak lime water, is an excellent drink, to which a few grains of bicarbonate of soda may be added. Tonics and stimulants are often required. Of the former, minute doses of *arsenic*, alone or combined with quinine, or the chloride of iron, or the pernitrate of iron, or the tincture of nux vomica, may be given. Wine whey, or brandy and water, to which a few drops of the aromatic spirits of ammonia have been added, are the best stimulants. The effect of sending the patient to a cool and mountainous region is immediate and lasting.

THOMAS HAY, M. D., PHILADELPHIA.

This practitioner has employed the following treatment in cases of cholera infantum, with the best results:

911. ℞. Hydrargyri chloridi mitis, gr. ij.
Bismuthi subcarbonatis, gr. xvj–xl.
Pulveris ipecacuanhæ compositæ, gr. j–ij.
Pulveris sacchari albi, gr. xij. M.

For eight powders; one to be taken every three hours, for two or three days, or until the tongue and mouth become moist, and the alvine excretion changed in color and consistency.

Then the following powders are given, and will ordinarily complete the cure:

912. ℞. Bismuthi subcarbonatis, gr. xvj–xl.
Pulveris ipecacuanhæ compositæ, gr. j–ij.
Pulveris aromatici, gr. viij–xvj.
Pulveris sacchari albi, gr. xij. M.

For eight powders; one to be taken every three or four hours, in the mother's or cow's milk.

Counter-irritation is kept up over the abdomen with mustard plasters, applied at intervals of three or four hours. The infant is allowed to suck at a piece of ice held in its mouth. When stimulants are required, the doctor gives from 15 to 30 drops of port wine. When the infant is artificially fed, he gives it cow's milk and lime-water, in the proportion of 1 fluid ounce of the latter to 5 fluid ounces of the former; also, broiled mutton or beef, minced very fine. All farinaceous food is forbidden. The child must be nursed or fed at regular intervals, and not allowed too much at a time.

PROF. N. S. DAVIS, M. D., CHICAGO.

In threatening cases, this physician recommends:

913. ℞. Acidi carbolici crystallisati, gr. iij.
Glycerinæ, f.℥ ss.
Tincturæ opii camphoratæ, f.℥ j.
Aquæ, f.℥ iss. M.
Give 20 drops every half hour, till the vomiting ceases, then every four hours.

914. ℞. Hydrargyri chloridi mitis, gr. iv.
Pulveris opii, gr. j.
Sacchari albi, gr. xx. M.
Make eight powders. Give one every eight hours.

If the vomiting ceases, but the discharge continues, and the child is fretful and emaciates, then:

915. ℞. Olei terebinthinæ, f.℥ ij.
Olei gaultheriæ, gtt. xx.
Tincturæ opii, f.℥ ij.
Pulveris acaciæ,
Sacchari albi, āā ℥ iv.
Aquæ, f.℥ iij. M.
From 15 to 30 drops, every three or four hours.

DR. BEDFORD BROWN, VIRGINIA.

The great danger in cholera infantum, according to this writer, (*Medical Times*, September, 1877,) is the supervention of thrombosis or embolism. When this is once established, the case is almost hopeless. But much may be done to prevent it.

In the first place, it is necessary, as far as possible, to avoid the paralyzing influence of a high degree of temperature on the system. A change of 20° will almost invariably accomplish that result. If this be not practicable, then one of our best correctives is the use of the *cold bath*, systematically, night and morning, followed by ample

and efficient friction previous and during the attack. Whenever re-action follows, good is certain to result. Secondly, vomiting and purging must be arrested, for the purpose of preventing undue waste from the blood-vessels. For the latter, the remedies are enemata of water, frequently repeated, containing, in minute solution, alum or tannin, glycerine, and an appropriate portion of tincture of opium. In these cases, water is better than starchy matter, as a vehicle, as it aids in supplying the wasted serum. To arrest vomiting, *bismuth*, combined with minute quantities of cerium and alum, and the free use of ice and iced gum-water, are advisable. They must be given in small doses, repeated every half hour or hour.

In regard to food and drink, iced gum-water may be used *ad libitum*, in bad cases. Nutriment must also be given in a perfect state of solution, ready for rapid and easy absorption.

The form of the particular nutriment to be adopted in cholera infantum, is a question of vital moment, and one on which depends the final result.

During an attack, food containing fibrinous or caseous matter, cannot be digested. Albumen in extreme dilution, as that of eggs beat up and highly diluted with sweetened water; the water in which good bread or crackers have been boiled; mutton or lamb broth, very delicately made; beef tea, made only by extracting the juice of the fresh lean meat with cold water, and then properly cooked, constitute forms of nutriment which can be absorbed and carried into the circulation without difficulty.

RÉSUMÉ OF REMEDIES.

Belladonna. Dr. UHLER, of Baltimore, has succeeded in severe cases with this drug after opiates and other remedies had been tried in vain.

Bismuthi Subnitras is valuable to control the evacuations in the later stages of the disease; and as a preventive of vomiting and nausea in its earlier stages.

Cantharidis Tinctura, in doses of gtt. x at intervals of ten or fifteen minutes to a child of eighteen month.s has been used successfully to combat the stage of collapse, by Dr. C. L. GREGORY, of Ohio. (*Cincinnati Lancet and Observer*, July, 1876.)

Carbolicum Acidum has been tried with varying results. It cannot be said to have established a reputation in this disease.

Creasotum is often efficient in relieving the nausea and vomiting.

Hydrargyri Chloridum Mite has been very extensively used. In addition to authorities already given we may quote Dr. HENRY HARTSHORNE, of Philadelphia, who advocates it, in moderate doses in the early stages, in strong language. He always gives it with an antacid, as:

916. ℞. Hydrargyri chloridi mitis, gr. ij.
Sodii bicarbonatis, ʒj.
Pulveris zingiberis, gr. xij. M.
Make twelve powders. One three or four times daily.

When the diarrhœa is more prominent, he gives the above; when the stomach or head is more involved, he replaces the bicarbonate of soda by magnesia.

Hydrargyrum cum cretâ. This is preferred by many practitioners to calomel.

Opium in some form may be given, but with great caution.

Potassii Bromidum has been pronounced by some a specific, by others worthless. It is certainly inefficient in many cases.

Quiniæ Sulphas, or some similar cinchona alkaloid, is indispensable in cases of a malarial aspect.

Rheum is a very valuable adjuvant. Spiced syrup of rhubarb is a popular form. Dr. W. M. Gross, of Illinois, pronounces calcined and pulverized rhubarb the "very best" remedy for the disease. (*Ohio Medical Recorder,* January, 1878.) He gives gr. v to a child of six months, repeating as necessary, without other medication.

Zinci Oxidum is, in the opinion of Dr. V. S. McNider, superior to astringents after the acute stage of the disease is past. (*Medical and Surgical Reporter,* August, 1876.)

EXTERNAL MEASURES.

Baths are of highest importance. In the algid stage Steiner strongly urges baths of 99° to 104° Fah. combined with stimulants internally. Mustard baths of not less than this temperature may be used. As more convenient, Dr. E. W. Emerson, of Boston, recommends wrapping the children to the chin in cloths wrung out with hot water and mustard with a blanket outside, and while thus enveloped feeding them with ice water and a little brandy. (*Boston Medical and Surgical Journal,* July 27th, 1876.) In early stages, when the temperature is high and thirst great, cool sponging or even the cool bath, is approved by some.

Emplastra. For the relief of the vomiting a spice poultice or plaster on the epigastrium is often of service.

CONVULSIONS

THOMAS HILLIER, M. D., LONDON.

This author considers that in the various forms of infantile convulsions it is of little use to do anything during the attack. The child should not be held, but laid upon a mattress, its clothing loosened, and plenty of fresh air admitted. A tepid bath is popular and will do no harm. When the attacks are frequent and severe, they may be warded off by chloroform inhalations. This is, however, a dangerous means, and should only be used by the physician himself. It is a real benefit only when the attack is impending.

To prevent a recurrence, the diet should be carefully regulated, the gums lanced if swollen or tender, laxatives exhibited if the bowels are costive, anthelmintics if there are worms, etc. The main indication is *to nourish the child* in the best manner possible. *Bromide of potassium* in full doses, iron and tonics, are the medicines chiefly demanded.

DR. T. K. HOLMES, ONTARIO,

In a paper in the *Transactions of the International Medical Congress for* 1876, advocated the treatment of convulsions in children accompanied by high temperature of the body, by means of the *cold bath.* He puts the child at first into a tepid bath and then rapidly cools it to 50° Fah. He never resorts to the bath when the temperature of the child is below 100°, and always removes it from the water when the axillary temperature has fallen to near the standard of health. Of course, where other indications for treatment exist, as malaria, teething, irritating ingesta, etc., it is necessary to attend to these also.

DR. BLANCHEZ, PARIS.

This writer recommends that when the attacks run into each other, or recur at short intervals, revulsives should be applied to the lower extremities, compresses of cold water, or of water with ether, being also laid on the temples. *Compression* may at the same time be made on the carotid arteries, as recommended by TROUSSEAU. The pulsation of these vessels must be sought for at the lateral parts of the neck, and then they must be gradually compressed backward toward the spinal column. The amelioration should be rapid; and if after

two or three minutes it has not manifested itself in an evident manner, the compression should not be longer continued. Inhalations of *chloroform* may then be resorted to, administering them in a very gentle and gradual manner. In some cases special indications present themselves, as for the employment of an emetic when it is well made out that the convulsions are due to indigestion. When the attack has been overcome, we must try to modify the general eclampsic condition by having recourse to anti spasmodics. Their dose is of great importance. For an infant from eight to fifteen months old, we should never exceed the dose of gr. iv, after having commenced with gr. j. The maximum dose of *belladonna* powder is gr. iss, after commencing with gr. $\frac{1}{6}$, increasing it very gradually, and carefully watching the throat and pupils of the child. We may proceed more boldly with *oxide of zinc*, of which gr. iss may be given every two hours; but *bromide of potassium* and *chloral* are to be preferred to any of these remedies. Of the bromide gr. j–iij may be given every two hours, until gr. viij–x are reached in an infant, and from gr. xl–l in a child of seven.

PROFESSOR JOHANN STEINER, M. D., PRAGUE.

It is not always easy to detect the cause of infantile convulsions. In such cases the causal treatment must give place to the symptomatic. Of the various remedies, our author prefers in such instances the following combination:

917. ℞. Zinci oxidi, gr. iv.
Hydrargyri chloridi mitis, gr. ij.
Sacchari albi, ʒj. M.
Make eight powders. Give one every hour.

Remove all constricting clothing, apply mustard poultices to the trunk and extremities, and use clysters of cold water. The warm bath is often serviceable.

Convulsions from malarial toxæmia demand *quinine;* from worms, anthelmintics: from phimosis or elongated uvula, excision, etc.

RÉSUMÉ OF REMEDIES.

Anæsthetics. Either chloroform or ether, by inhalation, are effective in emergencies.

Belladonna is valuable in the constitutional treatment.

Chloral, in doses of gr. v–x, every six hours, to a child of ten, frequently answers the purpose. Dr. POLAILLON has administered it with success to children as

an enema (three grains in five drachms of water.) Calm sleep and a cessation of the convulsions follow, and a similar enema given twenty-four hours later completes the cure.

Moschus. When musk can be obtained fresh and pure, it is an admirable anti-convulsive agent in children. When the child will not swallow, Dr. JULES SIMON recommends it in the following enema:

918. ℞.	Moschi,	gr. iij.	
	Camphoræ,	gr. xv.	
	Chloral hydratis,	gr. vij.	
	Vitelli ovi,	℥j.	
	Aquæ,	℥ v.	M.

For an enema; to be preceded by an ordinary one, to wash out the rectum.

Opium, in some form, is preferred by many practitioners. It may be administered hypodermically, or by enema, every twenty minutes, until the pupils contract.

Potassii Bromidum, gr. x–℥j, is usually a reliable means in idiopathic convulsive disorders. Dr. BLANCHEZ (*Gazette Médicale*, 1875,) recommends a mixed treatment, the bromide being given during the day and the chloral at night.

Zinci Oxidum, especially when combined with tonics, aids much in restoring the nervous equilibrium.

EXTERNAL REMEDIES.

Warm Baths, in infants, often act as potent sedatives. *Cold to the head*, as compresses wrung out with ice water or dilute ether, is valuable. TROUSSEAU commends pressure on the carotid arteries. (See above.) Of course all reflex irritation should be sought for in the first instance, and removed.

CORYZA.

EDWARD ELLIS, M. D., LONDON.

For ordinary cold-catching and snuffles in children, this writer has found no treatment, at the outset, so useful as small doses of *spirits of camphor*, frequently repeated, say every half hour or hour. If the cold be more advanced, and what is called "feverish," with hot skin and frequent sneezing, *tincture of aconite*, gtt. ½, in water every half hour, will speedily cause diaphoresis and a general feeling of relief. The lassitude left after a cold, or a cold showing a tendency to become chronic, is best met by *tinctura nucis vomicæ*, gtt. ij–v, to a child according to age, three times a day, in a little water. He has frequently and thoroughly tested these plans of treatment, and can recommend them with confidence.

PROF. J. LEWIS, M. D., NEW YORK.

In children, ordinary attacks of this affection require little treatment beyond keeping the bowels open, soaking the feet in mustard water, and having the body warmly clothed. Friction with camphorated oil, over the nose, is of some benefit. In attacks which commence with greater severity, an emetic of syrup of ipecacuanha, given early, will moderate the inflammation, and may prevent the occurrence of bronchitis. Afterward, a simple diaphoretic mixture should be administered, such as the following:

919.	℞.	Syrupi ipecacuanhæ,	f. ʒ ij.	
		Spiritûs ætheris nitrosi,	f. ʒ j.	
		Syrupi simplicis,	f. ʒ ij.	M.

One teaspoonful every three hours, to a child of six months.

In place of sweet spirits of nitre, *acetate of potash* may be employed, in the dose of 1 to 2 grains, for infants. If there is febrile re-action, from ½ minim to 2 minims, according to the age, of *tincture of digitalis*, may be given in each dose.

In pseudo-membranous coryza, the laryngitis which usually accompanies this affection, demands the first attention. The injection of a solution of chlorate of potash, in water, several times a day, subdues the inflammation and removes the collection of mucus and pus. Or, the following may be employed:

920.	℞.	Pulveris aluminis,	gr. xvj–xx.	
		Aquæ,	f. ʒ iv.	M.

The bromide solution (see Index), diluted as directed, will also be found useful when injected into the nostrils.

Chronic coryza should be treated by tonics and by alteratives, directed to the cachexia which may be present. Together with such constitutional treatment, a solution of nitrate of silver (gr. iij–v to f. ʒ j) may be injected into the nostrils. An excellent formula for application to parts which can be reached by a camel's-hair pencil, is:

921.	℞.	Pulveris zinci oxidi,	ʒ j.	
		Glycerinæ,	f. ʒ j.	M.

To be applied three or four times a day.

922.	℞.	Liquoris ammoniæ acetatis,	f. ʒ j.	
		Vini ipecacuanhæ,	♏ xvj.	
		Potassii nitratis,	gr. viij.	
		Misturæ amygdalæ,	f. ʒ vij.	M.

A teaspoonful every four hours, for a child of six months.

CROUP MEMBRANOUS AND SPASMODIC.

PROF. FORDYCE BARKER, M. D., NEW YORK CITY.

This teacher always commences treatment by the following emetic of *turpeth mineral:*

923. ℞. Hydrargyri sulphatis flavæ, gr. iij–v.
For one dose. If it does not act in fifteen minutes, give a second dose of three to five grains, according to the age of the child. This, however, is rarely necessary.

If, on the next visit, he finds the child with a quick pulse, hot skin, somewhat hurried breathing, and an occasional ringing cough, but with no thoracic râles, he directs that it shall be kept quiet in bed, comfortably covered, but not with too many clothes, and prescribes the *veratrum viride*, in one or two-drop doses, according to the age of the child, as, for example, in the following formula:

924. ℞. Tincturæ veratri viridis, gtt. xvj–xxx.
Spiritûs ætheris nitrosi, f.℥ ij.
Syrupi simplicis, f.℥ j.
Aquæ, f.℥ vj. M.
A tablespoonful every second hour.

He visits the child at least as often as every eighth hour, and increases or diminishes the dose, according to the effect of the medicine on the pulse. He is not satisfied until the pulse is below eighty per minute, and then continues the veratrum in half the dose that was necessary to bring it down to that point. If thoracic râles, hurried and labored respiration, and other symptoms indicate that the disease is extending downward, then substitute for the above prescription something like the following formula, of course varied according to the special indications of the case:

925. ℞. Tincturæ veratri viridis, gtt. xvj–xxx.
Ammoniæ carbonatis, ℥ ss.
Syrupi tolutani,
Syrupi acaciæ, āā f.℥ j. M.
A teaspoonful every second hour.

Sometimes, on account of increasing laryngeal and bronchial obstruction, the emetic of turpeth mineral should be repeated on the second or third day, but it is not necessary or well to repeat it a third time.

Quinine is a remedy of great value, and well tolerated in large doses in some of the diseases of the respiratory organs of children. It is of great service in some cases of croup in the advanced stages, when the respiration is hurried and irregular, and paroxysms of cough becoming less marked, the intermissions less distinct, and the cough husky instead of ringing. Our author then substitutes for the last formula the following:

926. ℞. Quiniæ sulphatis,
Ammoniæ carbonatis, āā ℥ ss.
Syrupi senegæ,
Syrupi acaciæ, āā f.℥ j. M.
To be well shaken. A teaspoonful every fourth hour.

When the croup is complicated with lobular pneumonia, give the quinine separately, 4 or 5 grains three times a day, while the little patient takes the last of the prescriptions containing veratrum viride.

HERMAN BEIGEL, M. D., ETC., LONDON.

Dr. B. recommends in a case of croup the use of the following medicated sprays, given in the order of their value. They are applied by means of the atomizer:

927. ℞. Aquæ calcis, f.℥ j.
For one inhalation, lasting about a quarter of an hour, and to be repeated every two hours as long as bad symptoms are present.

A convenient method is to pour hot water on unslaked lime in a pitcher, and to have the patient inhale the vapor as it arises.

928. ℞. Acidi tannici, gr. ij–xx.
Aquæ, f.℥ j. M.
For one inhalation, to last fifteen or twenty minutes.

929. ℞. Potassii bromidi, gr. v–x.
Aquæ, f.℥ j. M.

This inhalation, at the early stage of the disease, will often be found to arrest the symptoms.

With these inhalations the administration of emetics or other remedies may be combined.

DR. FELIX VON NIEMEYER, PROFESSOR UNIVERSITY OF TUBINGEN.

930. ℞. Cupri sulphatis, gr. x–xv.
Aquæ, f.℥ ij. M.
A large teaspoonful to be taken every five minutes until vomiting sets in.

In regard to the employment of emetics in croup, Prof. N. thinks that they are only indicated when obstructing croup-membranes play a part in producing the dyspnœa, and when the child's efforts at coughing are insufficient to expel them. Impeded expiration is an indication of their employment.

Sulphate of copper is preferable to tartar-emetic or ipecacuanha. It should be given in full doses; in small ones it is uncertain, and more apt to operate as a poison.

If the bowels be confined, administer a clyster, so that the diaphragm may have room to act. The best is a cold one, as follows:

931. ℞. Acidi acetici diluti, f.℥ ij.
Aquæ, f.℥ vj. M.

If, however, there is no remission, notwithstanding the employment of the emetic and the cold application, apply the following concentrated solution, at intervals of several hours, to the entrance of the glottis:

932. ℞. Argenti nitratis, ℥ ss.
Aquæ destillatæ, f.℥ ij. M.

Dip a curved rod of whalebone, with a small sponge made fast to its lower end, into this solution, press down the tongue of the child, and endeavor to reach the entrance of the glottis with the sponge. There the sponge is immediately compressed by the muscular contraction which takes place, whereby certainly a portion of the liquid, if only a small one, arrives at the larynx. Administer also half a grain of calomel every two hours.

Should this treatment remain without effect, proceed at once to tracheotomy.

Besides treating the dyspnœa upon the principles given above, it may be necessary to relieve the paralytic symptoms due to blood-poisoning by carbonic acid. For this purpose the powerful stimulus obtained by pouring *cold water* upon the child while in a warm bath is of great service. Lose no time in making use of it, the moment the child begins to grow drowsy, the skin to cool, the sensorium to be benumbed, or as soon as emetics fail to act. A few gallons of cold water, poured from a moderate height, over the head, nape and back of the child, almost always cause it to revive for a while and to cough vigorously. Thus, sometimes, after the bath, masses of exudation are expelled. Other stimulants, such as camphor or musk, are much less effective, and ought not to be employed, save when insuperable objections are opposed to the cold affusion. They should be given in large doses, immediately prior to the emetic. The following formula may be used:

933. ℞. Camphoræ, gr. x.
Ætheris acetici, f.℥ iij. M.

Ten to fifteen drops to be given every quarter of an hour.

PROFESSOR J. LEWIS SMITH, M. D., ETC., NEW YORK.

934. ℞. Potassii chloratis, ℥j.
Ammonii muriatis, ℈ij.
Syrupi simplicis, f.℥j.
Aquæ, f.℥ ij. M.

One teaspoonful every twenty minutes to half an hour, or in cases not severe, every two hours. This should be continued regularly, night and day, until the cough becomes looser, or until it is evident, if the case be unfavorable, that it can be of no service.

The atmosphere the child breathes should be constantly loaded with moisture, without, however, that degree of heat which would add materially to the discomfort of the patient or attendants. The temperature should be of 75° or 80°.

Besides the nitrate of silver, three other substances have been used of late years, for the topical treatment of the throat, which appear to be more effectual in removing the pseudo-membrane, and controlling the inflammation. One is *liquor ferri subsulphatis;* the second, *carbolic acid*, and the third, *bromine*. The following formulæ may be used:

935. ℞. Liquoris ferri subsulphatis, f.℥j.
Glycerinæ, f.℥ ss. M.

936. ℞. Acidi carbolici fluidi, f.℥j.
Aquæ, f.℥ vj. M.

937. ℞. Brominii, ℥ ij.
Potassii bromidi, gr. xlv.
Aquæ, f.℥j. M.

This is called the bromine solution; but it must be considerably diluted for use. Twenty-four to forty drops should be added to an ounce of water, for application to the fauces or larynx. Our author most highly recommends the sulphate of iron solution.

DR. J. J. HIGGINS, NEW YORK.

The special indications in croup are laid down by this writer (*The Practitioner*, May, 1877,) as follows:

1. The relief of spasm. For this purpose, *emetics* are demanded. The best is *turpeth mineral* (hydrargyri sulphas flava), gr. iij, for children from one to three years of age, repeated once in six or eight hours, if necessary.

2. The relief of congestion and inflammation. To accomplish this, *aconite* is the most efficient remedy, in small, oft-repeated doses, gtt. ½ to a child of four years.

938. ℞. Tinct. radicis aconiti, gtt. vj.
Syrupi ipecacuanhæ,
Spiritûs ætheris nitrici dulcis, āā f.℥ ij.
Aquæ carui (vel anisi), f.℥ ij. M.
A teaspoonful for a child of two years.

A sinapism to the upper part of the thorax, aids the remedy.

3. The dissolution and expulsion of the membrane. This may partially be done by emetics; but the real reliance must be on *calomel*, in full doses, gr. x–xx. These large doses are absolutely necessary to check the disease. The administration of mercury in small doses, does not do this; it simply effects an augmentation of the secretions; and, again, neither does the disease last for such a length of time that the constitutional effects of mercury could be got, nor, as a rule, could such effect in the infant be obtained. In larger doses of from 5 to 10 or 20 grains, mercury acts in a totally different way; and, when so given, exerts a powerful influence upon the disease, of a sedative and salutary character. Dr. ELLIOTSON also strongly and earnestly advocates this course, and says, "There is extreme danger here, and, therefore, mercury should be given with the greatest freedom."

RÉSUMÉ OF REMEDIES.

Acetum. The fumes of vinegar are highly extolled by Dr. LESDORF. (*Doctor*, Nov., 1875.) He directs that when, after emetic doses of sulphate of copper, the dyspnœa seems not to yield, a vapor-bath is to be given, as follows: A wooden vessel, containing eight to ten quarts of hot water, half to three-quarters of a pint of vinegar, and a handful of meal, is to be placed at the foot of the child's bed; a quilt is then to be suspended over the bed, so that one end is to cover the vessel, and the other so arranged that the vapor, in escaping, must pass over the child's head. A red-hot iron is then to be placed in the vessel, and left there so long as it develops the hot acid vapor. This bath is to be repeated every two hours, night and day, while there is any danger. The very best results may be anticipated from this method of treatment, and operative interference, even in acute cases, may often be prevented by energetically carrying it out.

**Acidum Lacticum*, as a solvent of false membrane in croup, is highly esteemed. The following is the formula of the London Throat Hospital:

939. ℞. Acidi lactici, ℥ ss.
Aquæ destillatæ, f.℥ x. M.
Use with an atomizer.

Alumen was the favorite emetic in this disease, with the late Prof. CHARLES D. MEIGS. He gave ʒj in molasses or honey, as required.

Antimonii et Potassii Tartras is still preferred as an emetic by some. Dr. ELLIS prescribes:

940. ℞. Antimon. et potassii tartratis, gr. ij.
Oxymellis scillæ,
Aquæ, āā f.ʒj. M.
Two or three teaspoonfuls every quarter of an hour, in the early stages of croup, to a child four years old.

Argenti Nitras, dried and pulverized, and mixed with sugar, has been used for an insufflation in membranous croup, by Dr. GUILLON, of Algiers.

Belladonna has considerable value in spasmodic croup. *Atropia*, hypodermically, gtt. iij of a one per cent. solution, has been used successfully by Dr. DE PONTIVES. (*Union Médicale*, 1878.)

Brominium is recommended by Dr. REDENBACHER. (*Med. Cent. Zeit.*, 1879):

941. ℞. Brominii, gtt. v.
Potassii bromidi, ʒj.
Decocti altheæ, ℥iv.
Syrupi simplicis, ʒj. M.
A dessertspoonful to a child of seven years.

Calx. The odor from slaking lime, and lime-water as a gargle, are both valuable remedies. (See above.)

Chloral Hydras has been highly extolled by Dr. WILLIAM STEWART, in spasmodic croup. (*Lancet*, May 25th, 1878.) He claims it to be the remedy *par excellence.*

Collodium Cantharidatum. In severe croup or diphtheria, when emetics give no relief, Dr. MUSICAUTOFF, of Warsaw, has found repeated outward applications of cantharidal collodion to the throat to yield very successful results. (DOBELL, *Reports on Diseases of the Chest*, 1876.)

Cupri Sulphas is one of the best emetics in croup. To a child a year old, gr. ½, in some sweetened water, till emesis is produced.

Ferrum, in almost any of its preparations, is useful in strengthening the system and diminishing the excessive nervous sensibility which is so constantly a cause of laryngismus stridulus.

Hydrargyri Chloridum Mite, in large doses, is recommended on good authority.

Hyoscyamus is an excellent sedative. Dr. DA COSTA recommends:

942. ℞. Extracti hyoscyami fluidi, ♏iij–x.
Aquæ destillatæ, f.ʒj. M.
Used as an inhalation in spasmodic croup.

Petroleum Rectificatum, or kerosene, in doses of f.ʒj–iv, is a popular and successful remedy in croup. (See *Medical and Surgical Reporter*, April 14th, 1877.)

Potassii Chloras. Dr. J. F. MEIGS speaks highly of this drug, which he combines with ferric chloride:

943. ℞. Potassii chloratis, gr. v–x.
Tinct. ferri chloridi, ♏iij–v.
Syrupi, f.℥ ss.
Aquæ, f.℥ ij. M.
This much every three or four hours.

**Quiniæ Sulphas*, given in the largest doses the child can bear, and during the intervals of the paroxysms, is a very satisfactory remedy, especially in weak and obviously nervous infants.

Valerian is highly recommended by Dr. G. HILL, (*British Medical Journal*, April 11th, 1868,) who, however, neglects to mention the preparation and dose he employed. Dr. ELLIS recommends in spasmodic croup:

944. ℞. Tinct. valerian. ammon., ♏v–x.
Tinct. camph. comp., ♏v.
Spiritûs chloroformi, ♏iij.
Aquæ anethi, f.℥ ij. M.
For one dose.

DENTITION.

JAMES E. GARRETSON, M. D., D. D. S.

The diseases associated with the first dentition are the following:

1. *Localized Stomatitis*, associated with the eruption of the teeth. When tumefaction of the gum is dependent on this tooth eruption and the child is in a healthy condition, a certain evidence is found in the glistening character of the swelling; the part immediately over the tooth looks tense and feverish. This tense look may under all circumstances, be esteemed an indication demanding the use of the *lancet*. Much relief may also be afforded by applying *tincture of belladonna* to a gum thus congested; or a saturated solution of *bromide of potassium*. In unhealthy conditions the glistening referred to is not commonly present; and then relief from lancing is but gradual and inconsiderable. Stomatitis associated with the strumous, scorbutic or syphilitic cachexia must be treated with reference to these general conditions. In *syphilitic stomatitis* the following combination exerts a very happy effect:

945. ℞. Hydrargyri chloridi corrosivi, gr. j.
Potassii iodidi, ℥j.
Syrupi ferri pyrophosphatis, f.℥ iv. M.
From a quarter to half teaspoonful, according to age, three times a day.

An admirable local application for the syphilitic sore mouth and throat is the following:

946. ℞. Acidi sulphurici aromatici, f.℥ ij.
Argenti nitratis, gr. vj.
Infusi querci albi, f.℥ vj. M.
For local use.

In a scrofulous or syphilitic child general hygienic surroundings are very important. To prevent constipation *olive oil* may be given, q. s. When the kidneys fail to eliminate, small doses of sweet spirits of nitre are called for; when the kidneys are irritable, a cold decoction of *buchu* is excellent.

947. ℞. Buchu, ℥ j,
Aquæ, Oiss. M.
Simmer to a pint. When cool, strain, and give a teaspoonful four to six times a day.

Inflammation of the fauces, *angina simplex*, is a not unusual extension of the stomatitis. If it becomes obstinate, three or four Swedish leeches may be applied to the upper part of the throat. Hot pediluvia and a saline cathartic (a teaspoonful of Epsom salts in a wine-glassful of water) are valuable accessories. An emetic dose of syrup of ipecacuanha will not unfrequently break up a sthenic sore throat. When the system sympathizes and there are general febrile manifestations, the following combination will be found happily adapted to the case.

948. ℞. Liquoris potassæ citratis, f.℥ iij.
Spiritûs ætheris nitrosi, f.℥ ss.
Pulveris antimonii et pot. tart.,
Morphiæ acetatis, āā gr. j. M.
For an infant of one year 5 to 8 drops every two hours.

When the angina becomes chronic, with feelings of tickling and rawness in the throat, gum arabic and jujube troches may be held in the mouth and allowed slowly to dissolve.

Or a gargle compounded as follows may be used *ad libitum:*

949. ℞. Tincturæ iodinii compositæ, gtt. xl.
Acidi carbolici, gtt. vj.
Glycerinæ, f.℥ j.
Aquæ, f.℥ vij M.
For a gargle.

Brushing the parts with the tincture of belladonna or with a saturated solution of the bromide of potassium is sometimes found to abort

the trouble very speedily. A red pepper gargle or lotion is often valuable.

950. ℞. Tincturæ capsici comp., f.℥ss.
Aquæ, f.℥viij. M.
For a lotion.

When local measures fail, the physician must address his remedies to the constitution. Scrofula or syphilis may be suspected.

2. *Dental Irritative Fever.* This sometimes appears when there is no evidence of local inflammatory action about the gums. Of course, if these are tense, they should be incised; if this is not called for, general measures are resorted to. Lemonade, prepared with crushed ice, to which bicarbonate of potash may be added, is a grateful refrigerant. Or a refrigerating mixture may be prescribed as:

951. ℞. Liquoris potássæ citratis, f.℥iij.
Potassii bromidi, ℥j.
Aquæ, f.℥j. M.
A teaspoonful as required.

Sponging the skin with water or alcohol, and bathing the wrists with cold water are soothing measures. Single-drop doses of veratrum viride, or tartar emetic, gr. $^1/_{40}$, in iced lemonade, are useful in sthenic conditions.

3. *Diarrhœa.* Frequently, to cure a diarrhœa, or an attack of cholera infantum, all we have to do is to cut down upon a confined tooth. When this fails, either the lining membrane of the digestive canal has passed into a state of chronic irritation, or the diarrhœa has some other cause. In either event we might prescribe:

952. ℞. Olei olivæ, f.℥j.
Tinct. opii camphoratæ, gtt. v–x. M.
This amount every few hours.

Heating applications to the abdomen are very useful, as a spice plaster or mild sinapism. A very good combination to direct the irritability to the surface and thus relieve the affected parts, is:

953. ℞. Spiritûs ætheris nitrosi, f.℥ss.
Liquoris potassæ citratis, f.℥ij.
Antimonii et potassii tartratis, gr. ½. M.
Ten to fifteen drops every two hours.

When the diarrhœa has nothing inflammatory about it, the *bromide*

of potassium, in 5-grain doses, acts most satisfactorily. The following combination is a valuable one, when other sources of irritation, not perhaps thoroughly appreciated, exist in conjunction with the dental trouble:

954. ℞. Hydrargyri chloridi mitis, gr. ij.
Pulveris opii,
Pulveris ipecacuanhæ, āā gr. j.
Magnesiæ carbonatis, gr. xij. M.
Make eight powders; one after each operation, if profuse; or every two, three or four hours.

4. *Spasms.* The indications, when this complication arises, are to remove the irritation by lancing the gums, and to soothe and quiet the nervous system. For the latter, we may give the bromide of potassium, gr. v, as required; or the tinctures of valerian and gentian, equal parts, gtt. x, as required, or the excellent combination recommended by Dr CHAMBERS:

955. ℞. Potassii bromidi,
Tincturæ cantharidis, āā gtt. iij.
Misturæ camphoræ, gtt. x. M.
In a little water as often as needed.

When such measures as these do not relieve the convulsions, they may be presumed to have a deeper seat than dental irritation.

5. *Eruptions.* The consideration of dental irritation in infantile skin diseases is most important. Such irritation does not, in any manner, develop or create the distinctive features in a skin disease, but simply by exhausting the system, gives an opportunity for the eruption to break out. Its treatment must be that appropriate to its particular form, with what is additionally required by the irritation from the tooth.

DIARRHŒAL DISORDERS.

S. HENRY DESSAU, M. D., NEW YORK CITY.

This specialist in diseases of children gives his treatment of infantile diarrhœa, as follows:

In cases of simple diarrhœa occurring in teething children, where there is no fever present, and absence of pain on pressure over the abdomen, he generally administers a sedative, such as the *bromide of potassium*, in doses of gr. ij–iv every three hours, and insists upon careful attention to the diet of the child. If an astringent is found necessary:

956. ℞. Mist. cretæ, f.℥j.
Tr. catechu,
Tr. opii camph., āā gtt. iv. M.
This much every three hours.

When the patient has acquired a mixed dietary and presents the same symptoms of simple diarrhœa as before mentioned, the case being due to eating of improper food, if seen shortly after the commencement of the attack:

957. ℞. Ol. ricini,
Syr. rhei aromatici, āā f.℥ss.
Sodæ bicarbonatis, gr. ij. M.
To be taken every half hour until the bowels have been freely evacuated, and afterwards to be taken twice or three times daily.

Where the stools present the condition of lientery, a tonic of quiniæ sulph. and tr. ferri chlorid. is given, together with 8 to 10 grs. of pepsin, taken with the food at meal time. Pepsin is also given in those cases of simple diarrhœa in growing children, where the stools are large, watery, frothy and of fœtid odor.

Where simple diarrhœa is met with in strumous children, he prescribes:

958. ℞. Ol. morrhuæ, ℥iij.
Syr. prun. virg.,
Liq. calcis, āā ℥j. M.
One or two teaspoonfuls after each meal.

When change of temperature, commonly termed cold, is the cause of the diarrhœa, by some writers styled *intestinal catarrh:*

959. ℞. Tr. opii camph., gtt. iv.
Ext. ipecac., f. gtt. ¼. M.

Given in a teaspoonful of equal parts of syrup and water, is prescribed for infants, and larger doses for older children. The castor oil mixture answers fully as well in such cases, and is more frequently given than the first-mentioned combination.

For summer complaint, appearing in a child undergoing dentition, where the evacuations are frequent and present the familiar green or chopped-spinach appearance, and also containing mucus and undigested curd, all more or less certain indications of inflammatory destruction; and when, moreover, during the first days of the complaint, it is attended with marked fever and tenderness upon pressure over the abdomen, and more especially in the region of the iliac fossæ, he at once places the child upon an antiphlogistic treatment:

960. ℞. Liq. ammon. acet., or
Liq. potass. cit., gtt. xx.
Tr. opii camph., gtt. iv–x.
Ext. ipecac., f. gtt. ¼–½. M.
To be given in a teaspoonful of anisette water.

The diet is to be carefully regulated, the breast to be given not oftener than every three hours, and if there be much vomiting, teaspoonful doses of toast-water, containing ice, to be given. In cases where vomiting appears as the principal symptom:

961. ℞. Hydrarg. chlor. mit., gr. j.
Sacch. albi, gr. xv. M.
Make sixteen powders. One to be given every two hours.

When the disease has progressed for several days, until the febrile symptoms have subsided, or where such changes appear in the evacuations, as before remarked, following a previous simple diarrhœa, he employs:

962. ℞. Pulv. rhei, gr. vj.
Pulv. ipecac. co., gr. x.
Sodii bicarb., gr. xij. M.
Make twelve powders. One to be given every three hours to a child under one year of age.

He sometimes uses the following, for the same age:

963. ℞. Vin. ipecac., gtt. ij.
Tr. calombæ, gtt. xx.
Mist. salinæ, f. ℥ ij. M.
To be given every three hours.

The mist. saline is made by adding lemon juice in sufficient quantity to neutralize 20 grains of carbonate potassa dissolved in f. ℥j water. In addition to drugs and attention to diet, he generally recommends a hot bath to be given twice daily, and the baby to be wrapped in a blanket, after being dried, so as to invite free perspiration.

When this variety of diarrhœa presents itself in children over a year old, and in those under that age, also, where there are streaks of unaltered blood in the stools, he uses :

964. ℞. Bismuth. subnit., ℥j.
Pulv. ipecac. co., gr. xx.
Pulv. zingib., gr. iij. M.
Make twelve powders. One to be given every three or four hours.

Where the disease has lasted for several months, and has assumed all the features of a chronic diarrhœa, whether the patient has completed dentition or not, he gives the cod-liver oil mixture before mentioned, (F. 958,) in the proportion of f. ℥ iijss to f. ℥ ss, of the syrup ferri iodid., a teaspoonful of which is to be given three times daily. It acts in the same beautiful and pleasing manner as in the simple diarrhœa of strumous children.

JAMES S. HAWLEY, M. D., GREEN POINT, N. Y.

In infantile diarrhœa, the indications are as follows: First, to remove all sources of irritation from the quantity or quality of the ingesta or change of temperature. Second, to allay irritation by sedatives, of which the best are the preparations of opium and salts of bismuth. When irritation without pain exists, *bismuth* most promptly and satisfactorily allays it; but when accompanied with pain, the addition of a minute portion of *opium* becomes a necessary complement to its effectiveness. Thirdly, artificial digestion, by the administration of *pepsin*.

965. ℞. Pulveris pepsinæ Americanæ,
Bismuthi subnitratis, āā ℥j. M.
For ten powders. One to be given every three or four hours, to a child a year old.

Opium may be combined, if desired.

THOMAS HILLIER, M. D., F. R. C. P., ETC., LONDON.

966. ℞. Acidi gallici, gr. xij.
Tincturæ cinnamomi, f. ℥ iss.
Tincturæ opii, ♏viij.
Aquæ carui, q. s. ad f. ℥ ij. M.

Two teaspoonfuls for a child two years old, with chronic diarrhœa and irritable stomach.

967. ℞. Olei ricini, f.℥ ij.
Pulveris acaciæ, ℥j.
Tincturæ opii, ♏viij.
Syrupi. f.℥ ij.
Aquæ carui, q. s. ad f.℥ ij. M.

A teaspoonful for a child six years old.

A useful oleaginous mixture in dysenteric diarrhœa.

DRS. MEIGS AND PEPPER, PHILADELPHIA.

These writers recommend, in the treatment of *simple diarrhœa* in childhood, sulphate of magnesia combined with laudanum, as follows:

968. ℞. Magnesiæ sulphatis, ℥j.
Tincturæ opii deodoratæ, gtt. xij.
Syrupi simplicis, f.℥ ss.
Aquæ menthæ, f.℥ ijss. M.

At one or two years, a teaspoonful every two or three hours. For older children, the proportion of magnesia and laudanum should be doubled.

If this fails, recourse must be had to an astringent. The officinal mistura cretæ must be given in teaspoonful doses, after each loose evacuation, three or four times a day; or tincture of krameria may be added, thus:

969. ℞. Tincturæ krameriæ, f.℥ j-ij.
Misturæ cretæ, f.℥ ij. M.

Teaspoonful repeated as above directed.

They also commend the *aromatic syrup of galls:*

970. ℞. Pulveris gallæ optimi, ℥ ss.
Pulveris cinnamomi, ℥ ij.
Pulveris zingiberis, ℥ ss.
Spiritûs vini gallici optimi, Oss. M.

Let the ingredients stand in a warm place for two hours, and then burn off the brandy, holding some lumps of sugar in the flames. Strain through blotting paper. Fifteen to forty drops, three or four times a day, or, when the discharges are very frequent, every two or three hours.

In the chronic form of simple diarrhœa, they have found, of late years, the following tonic very useful:

971. ℞. Tincturæ nucis vomicæ, f.℥ ss.
Tincturæ gentianæ compositæ, f.℥ iij.
Syrupi simplicis, f.℥ v.
Aquæ, f.℥ ij. M.

A teaspoonful three times a day, after meals, for children of three or four years of age.

Wine of pepsin is also efficacious in such cases, in doses of ½ teaspoonful thrice daily.

PROF. ALFRED VOGEL, M. D., DORPAT, RUSSIA.

This physician positively prohibits *cows' milk* in intestinal catarrh. He states that *penciling of the mouth with laudanum*, and the use of *opiate clysters*, stand at the head of all therapeutic measures. But, occasionally, in the profuse diarrhœa of summer, opium proves inefficacious; then order small doses of calomel, gr. ⅛, three or four times daily, or:

972. ℞. Argenti nitratis, gr. ss.
Aquæ destillatæ, f. ℥ iij. M.
A teaspoonful three or four times a day. A drop of laudanum may be added to each dose.

Vegetable remedies containing tannic acid, such as calumba, rhatany, pure tannic acid itself, and astringents in general, are with difficulty administered to small children, unless mixed with large quantities of syrup, and, on that account, should be seldom resorted to. In older children, they may be oftener employed.

973. ℞. Aluminis, gr. vj.
Syrupi acaciæ, f. ℥ iij. M.
A teaspoonful thrice daily.

This will sometimes check the diarrhœa, which has been uninfluenced by any of the above remedies.

Dr. V. has often convinced himself of the utter inefficacy of all therapeutic remedies in the treatment of this disease when the child is sustained on milk diet.

The best prophylaxis consists in rendering the cow's milk given the child alkaline, by the addition of the following soda solution to each meal:

974. ℞. Sodii carbonatis, ℥ j.
Aquæ, f. ℥ vj. M.

Several authors have very forcibly urged the importance of *cold* in infantile diarrhœa. Mr. E. Pocock, of London, invariably orders ice in large quantities, as well as frequent sponging with cold water, and he directs that all nourishment (unless the child be sucking) should be iced.

Dr. McKenna, also of London, in cases of great exhaustion, employed cold-water baths, stimulant ice injections, and iced drinks.

Cold baths especially are called for where there are marked cerebral symptoms. Dr. C. G. COMEGYS, of Cincinnati, has especially urged this treatment on the American profession. He says its great value is in cases where an inflammatory process is set up—enterocolitis, in which the discharges are more frequent, retaining, however, more or less the traits of the "loose bowels" so-called, with the addition of a high fever—102.5° to 106°. The pulse is much more frequent—130–150; the mouth is dry, the thirst intense; eyes staring, contracted pupils; insomnia, vomiting, rolling of the head, and distressing cries due to hyperæmia of the cerebral vessels and the unappeased thirst. The frequent vomiting and diarrhœa inhibit digestion or absorption of nutritious substances, and the brain is imperiled, for an effusion is impending, and general collapse. In this alarming condition the greatest relief may be found in immersions of the body in cool or even cold water, from twelve to fifteen minutes, every three hours, until the fierce symptoms are relieved, and relief will positively be obtained. It has now been a number of years since Dr. C. adopted this method of treating enterocolitis, and he has not lost a patient.

He claims that the immersion plan is much better than the wet pack, because the radiation of the febrile heat is more rapid and equable from the surface of the body. He has also used the pack about the chest and abdomen for many years in private and hospital practice, and he considers it not only more troublesome to apply, but of greatly inferior effect. Internally, Dr. C. uses small doses of mercurials and rhubarb.

THEODORE TURK, M. D.

In the *Med. Chir. Centralblatt*, No. 1, 1873, this author says, in the more chronic cases a series of careful observations have shown him that roasted *acorns*, prepared as coffee, with a few beans of the real article, form the best dietetic, and at the same time medicinal remedy. Often, when nitrate of silver, tannin, Dover's powder, etc., have proved useless, the simple acorn coffee (boiled, in cases of specially profuse diarrhœa, with from one to three grains of tannin, and in meteorism or sickness, with the addition of a piece of orange-peel to the decoction,) has, from the first, lessened the stools and improved their quality, and very shortly restored the appetite and nutrition. At the same time the children become, not fat, but healthy. The acorn coffee is more efficacious than alkalies, preparations of lime, tonics (Peruvian bark and extract) and carminatives. Moreover, the children drink it readily,

without becoming tired, and the painful, formal, and frequent administration of medicine is avoided.

DR. BLACHE, PARIS.

This author, in the *Journal de Therapeutique*, May, 1878, gives the following as his treatment in all cases, modifying it according to circumstances: 1. Reduction of the quantity of food given; suitable injections, repeated according to need, and poultices on the belly. 2. The administration each morning, during three, four, or five consecutive days, of a small teaspoonful of equal parts of *castor oil* and syrup of gum arabic, simply emulsified by shaking the bottle at the time it is used. When the child is under six months old, 15 grains of castor oil are enough for a dose; and if from six months to two years old, from two to three grammes are necessary.

If after the second day the diarrhœa be less but has not entirely disappeared, no more of the medicine should be given than on the day before. On the other hand, if the stools be particularly fœtid and glairy, another dose must be given on the same evening, as well as on the next day. If the case be one of profuse liquid diarrhœa, recurring twelve, fifteen, or even more times, in the twenty-four hours, the mixture must be altered, doubling or trebling the dose of gum, and adding a little vinum opii, from one to three drops, at the most, according to age, in the four and twenty hours, and the medicine must be repeated every two or three hours.

The object or effect of this castor oil treatment is to cleanse the mucous membranes, which it modifies, without, however, purging, in the general acceptation of the term. Injections are equally useful. First, a large injection of camomile tea is given, followed in twenty minutes by a small injection of starch. These are repeated whenever a series of four or five actions of the bowels occur in the space of from six to ten hours. In the latter case, bran of marsh-mallow is substituted for camomile. As to the absorbents, more especially bismuth, so often used in these cases, Dr. BLACHE distrusts them, as they may bring on convulsions, doubtless by preventing the cleansing of the mucous membrane.

DR. JAMES L. TYSON, PHILADELPHIA.

The treatment of this practitioner is by cold baths, chloral enemas and *oxide of zinc*.

The cold bath is insisted upon at least three times a day, but not at a lower temperature than 80°–85° Fahr.

The enema he uses is:

975. ℞. Chlorali hydratis, ʒ ss.
Aquæ amyli, f. ʒ ij. M.

For an enema. One to one and a half teaspoonfuls to be forcibly thrown into the bowels from a small glass syringe.

In some cases when the discharges were lienteric and the tenesmus excessive, this spasmodic action of the sphincter and lower bowels could only be controlled by repeated resort to the remedy, two or three applications being requisite before it could be retained, and then only by directing the nurse or mother to compress the glutæi muscles on either side, close over the anal orifice, for two or three minutes. When thus kept in immediate contact with the inflamed, sensitive, and irritable tissue, the benefits were prompt and enduring. Tenesmus, or choreal spasm of the bowel, was arrested, pain and inflammation were allayed, and the little sufferer would rest or sleep comfortably for several hours. A repetition of the enema was made once, sometimes twice, in the twenty-four hours, with increased comfort and alleviation of all the symptoms.

The oxide of zinc is administered as follows:

976. ℞. Zinci oxidi, ʒ ss.
Pulv. acaciæ,
Sacchari albi, āā ʒ ij.
Lactopeptinæ, ʒ j.
Aquam cinnamomi, q. s. ad f. ʒ j. M.

A teaspoonful every five or six hours.

This combination exerts a happy influence on the primæ viæ, enabling the child to digest its food more thoroughly, and controlling the number while it alters the character of the evacuations in a day or two. It is needless to add that strict attention to diet should be enforced.

RÉSUMÉ OF REMEDIES.

Acacia in solution is both soothing and nourishing.

Alkalies are highly extolled by Dr. J. P. Oliver (*Boston Medical and Surgical Journal*, July, 1875,) in diarrhœal diseases of infants. The alkali should always be combined with an aromatic.

977. ℞. Potassii bicarbonatis, ℈ j.
Aquæ cinnamomi, f. ʒ ij. M.

A teaspoonful or two to a child of eighteen months, in milk or barley water.

This prescription, with a few grains of pepsin if there is atony of digestion, and sometimes a little stimulant, will cure most cases.

Argenti Nitras. In acute catarrhal diarrhœa, summer diarrhœa, and the diarrhœa of dentition, this salt is used by Dr. MÜLLER and others, in doses of gr. $\frac{1}{4}$–$\frac{1}{8}$. He says the special indications for it are: (1.) Croupous deposits on the mouth and fauces; (2) peculiar redness and smoothness of the tongue; (3) irrepressible thirst. In obstinate cases of the chronic form TROUSSEAU recommends as an enema,

978. ℞. Argenti nitratis, gr. j.
Aquæ, f.℥ v. M.
For an enema. A portion to be used twice daily.

Arsenicum. Dr. RINGER advocates gtt. j–ij of the liquor arsenicalis in cases of children from eight to twelve years, where the motions are semi-solid, with lumps of half-digested food.

Bael. This East Indian astringent is growing in popularity in Great Britain. Dr. R. P. RITCHIE, writes of it to the *Medical Times and Gazette*, 1879, that in the chronic diarrhœas of children, especially those of a dysenteric character, it seems especially valuable.

Bismuthi Subnitras is commonly used in the more chronic forms. It is also of value in the acute forms where there are sour-smelling and offensive stools.

Camphora, in acute diarrhœa of infants, may be given as a few drops of the tincture on sugar or in milk, every two or three hours.

Catechu is a favorite astringent with some.

979. ℞. Tinct. catechu,
Tinct. kino, āā ♏x.
Syrupi, ♏xv.
Aquæ cinnamomi, f.℥ ij. M.
For one dose every three hours.

Carbolicum Acidum. In chronic diarrhœa, especially of the feculent variety, Dr. ELLIS has found the greatest benefit from the use of carbolic acid internally in doses of gr. $\frac{1}{4}$–$\frac{3}{4}$ in well-sweetened water, for children about two years old.

Ergota and *ergotin* are recommended in some cases, especially where the diarrhœa is without febrile action, and rather a wasting mucous discharge.

Ferri Tinctura Chloridi. In diarrhœa from the use of impure water or unripe fruit, Dr. LAWSON has found the most effective treatment gtt. ij–vj of this tincture in an appropriate vehicle, several times a day.

Gallicum Acidum, gr. j–v, dissolved in hot water, well sweetened and then allowed to cool, is very serviceable in chronic diarrhœa.

Hœmatoxylon is a favorite astringent with many.

Hydrargyri Chloridum Mite. Many practitioners commence the treatment of acute infantile diarrhœas with small doses of calomel with soda, chalk or other alkali, and perhaps a few grains of rhubarb. Quite large doses of calomel, gr. x–xxx, are undoubtedly valuable in desperate cases. In rickety, scrofulous or tuberculous children, ELLIS advises that no form of mercury be given.

Hydrargyri Chloridum Corrosivum. Dr. RINGER long since recommended minute doses of corrosive sublimate for the infantile diarrhœa with very slimy stools, especially if mixed with blood and accompanied by pain or straining. Lately in this dysenteric and other chronic forms it has been urged by Dr. RUDOLPH RAVENBURG, of Washington, D. C., gr. ss–j to water Oj, of which a teaspoonful may be taken at a dose.

Ipecacuanha, in small and repeated doses, is often most useful in the acuter forms.

Krameria is a pleasant and efficient astringent.

Nux Vomica. In lienteric diarrhœa, where the food passes through the bowels almost unchanged, Dr. MÜLLER regards nux vomica as a specific. The child should have salt-water baths and its diet be carefully regulated.

Opium may be given by enema, with starch, where there is marked griping and tenesmus; or by the mouth, as

980.	℞.	Tincturæ opii,	♏j–ij.	
		Potassii citratis,	gr. iij–vj.	
		Syrupi aurantii,	℥ ss.	
		Aquæ cinnamomi,	f. ℥ ij.	M.

This at a dose every three or four hours.

Pepsin, and the various forms of it, are indispensable in many cases.

Rheum. When at the outset of an attack it is desirable to cleanse the bowels of offending substances, rhubarb is one of the most appropriate means. The powder or spiced syrup may be used; or the alkaline tincture of the German Pharmacopœia, which is especially praised in infantile diseases by some writers. It is prepared as follows:

981.	℞.	Rhei,	100 parts.	
		Boracis,		
		Potassii carbonatis,	āā 10	"
To these add				
		Aquæ bullientis,	850	"
Set aside for fifteen minutes; then add				
		Alcoholis,	100	"
		Aquæ cinnamomi,	140	"

Ricini Oleum. It is excellent practice in acute cases to commence with a mild emulsion of castor oil. (See page 277.)

Salicin is recommended by Dr. LAWSON in summer diarrhœa induced by the direct action of heat on the nervous system; and by Dr. AITKEN in those from both this and other causes which deteriorate the tone of the system.

Salicylicum Acidum. Dr. J. M. KEATING, of Philadelphia, has recently employed with much satisfaction this drug in the acid diarrhœas of children. His formula is

982.	℞.	Acidi salicylici,	gr. ss.	
		Spts. ammon. aromat.,	gtt. v.	
		Aq. menth. piper.,	q. s.	M.

For one dose for a child a year old.

Sodii Benzoas. Dr. E. ULLMANN, of Vienna, (*Allg. Med. Zeit.,* Sept. 6th, 1879,) states

that he had repeatedly proved the value of this substance in the summer diarrhœas of young children. The dose is ʒss–ij, in solution, divided during the day.

Tannicum Acidum is a useful astringent. Dr. ELLIS prescribes:

983. R. Acidi tannici, gr. v.
Acidi nitrici diluti, ♏vj.
Infusi gentianæ comp., f.ʒij. M.
Every three or four hours, to a child of ten years.

Valeriana. Dr. L. A. DAVIDSON, of West Virginia, (*Medical and Surgical Reporter*, Nov., 1877,) commends the following as a most efficacious prescription in the ordinary diarrhœas of children:

984. R. Extracti valeriani fluidi, f.ʒss.
Pulv. calumbæ, ℈ij–iv.
Syrupi rhei, f.ʒss. M.

Zinci Oxidum has been highly extolled by Drs. BRAKENRIDGE, of Edinburgh; TYSON, of Philadelphia; J. C. KENTON, of Glasgow, and others; but Dr. ELLIS finds it disappointing. Its especial value is in nervous, lienteric cases. A child of six months should have gr. ij every six hours, in powder or mucilage. No sugar should be used with it. If so employed, it will be found a remedy of real and great power, capable of restoring even severe dysenteric cases, almost *in extremis*.

DIPHTHERIA.

THE PROPHYLACTIC TREATMENT.

It is the opinion of Prof. E. N. CHAPMAN, M. D., of Brooklyn, that a decided stimulant, especially *alcohol*, taken regularly, will protect persons from the diphtheritic poison. He prescribes for those in health, who are exposed to it, the following:

985. R. Quinoidiæ,
Cinchoniæ sulphatis, āā gr. xxv.
Acidi sulphurici aromatici, f.ʒij.
Spiritûs frumenti, f.ʒviij. M.
Fifteen drops to a tablespoonful, according to age, four or five times a day.

The German Prof. KLEBS, from experiments to ascertain what drugs have a destructive influence on the diphtheritic process, believes that he has shown that the most potent in this direction is the *benzoate of soda*, and is inclined to think that the administration of this substance will strongly tend to prevent the establishment of the disease.

He also uses it when the attack begins, ℥ j–ij, to a child of five years.

In all cases of illness, when diphtheria is prevalent, it is expedient to look into the throat, as, occasionally, when there is not even ground of suspicion, the characteristic spot or layer of mouldiness, like an irregular patch of white kid, will be discerned. Now is the time when one single painting with a strong solution of *nitrate of silver* may effectually destroy the parasite and rescue the patient. Twenty-four hours later, and the attempt will be vain.

GENERAL TREATMENT.

PROF. J. LEWIS SMITH, M. D., NEW YORK.

The internal treatment of this author is as follows, for a child of five years:

986.	℞.	Quiniæ sulphatis,	℥ ss.	
		Elixir taraxaci comp.,	f. ℥ ij.	M.

A teaspoonful every two to four hours.

987.	℞.	Tincturæ ferri chloridi,	f. ℥ ij.	
		Potassii chloratis,	℥ ij.	
		Syrupi simplicis,	f. ℥ iv.	M.

To be given hourly, between the previous mixture.

The tonic effect of the iron is not impaired by the chlorate of potassium, which is added to the mixture, on account of its local action on the inflamed surface.

The *citrate of iron and ammonia*, alone or in combination with carbonate of ammonia, may be given in 2-grain doses, dissolved in simple syrup, in place of the above mixture, when the inflammation of the fauces had considerably abated, or is moderate. If the patient improve, and the disease begins to abate, the intervals between the doses may be lengthened, but not discontinued.

Local Treatment.—Forcible removal of the pseudo-membrane, irritating applications, the use of a sponge or other rough instrument, for making the applications, should be *avoided* as likely to do harm. The applications should be made either with a large camel's-hair pencil, or, better, for most of the mixtures employed, with the atomizer. The hand atomizer, which is cheap and of simple construction, while it carries a heavy spray from the curved tube, which is introduced over the tongue, is very useful; but the constant spray of the steam atomizer is more effectual, and is preferable in severe cases.

The following mixtures he is in the habit of using with the atomizer:

988.	℞.	Acidi salicylici,	ʒ ss.	
		Glycerinæ,	f. ʒ ij.	
		Aquæ calcis,	f. ʒ viij.	M.
989.	℞.	Acidi carbolici,	gtt. xxxij.	
		Glycerinæ,	f. ʒ ij.	
		Aquæ calcis,	f. ʒ vj.	M.
990.	℞.	Acidi carbolici,	gtt. xxxij.	
		Potassii chloratis,	ʒ iij.	
		Glycerinæ,	f. ʒ iij	
		Aquæ,	f. ʒ v.	M.

In many cases of diphtheritic inflammation of the fauces the spray suffices for local treatment, but the following mixture, applied by a large camel's-hair pencil, is also very effectual, immediately converting the pseudo-membrane into an inert mass, and putting a stop to all movements of the bacteria which swarm in it, as Dr. S. has observed under the microscope:

991.	℞.	Acidi carbolici,	gtt. viij.	
		Liquoris ferri subsulphatis,	f. ʒ ij–iij.	
		Glycerinæ,	f. ʒ j.	M.

This may be used two or three times daily, between the spraying, or oftener without the spraying. It is not irritating (such an effect would condemn it,) but it is dreaded by most children on account of the unpleasant "puckering" which it produces.

If there is discharge from the nostrils indicating diphtheritic inflammation of the Schneiderian membrane, a little of the same mixture diluted with an equal quantity of warm water, is injected into each nostril every three to six hours. To do this, the child is placed upon its back, with the head thrown backward and the eyes covered with a towel to prevent the liquid from entering them. A small glass ear or nostril syringe, with a knob or button at the end of the nozzle, is the best form of instrument for these injections.

One-third to one-half of a teaspoonful of the diluted mixture is a sufficient quantity to employ for each nostril. This application, properly made, prevents decomposition, removes the offensive odor, and that which is of the greatest importance, prevents blood-poisoning.

In three or four days, if the case progress favorably, these remedies are employed less frequently, but they are continued until not only

the pseudo-membrane has disappeared, but the inflammation also has in great part abated. When the inflammation has begun to abate, and there is no re-appearance of the exudation, a gargle or drink of chlorate of potash is given.

992. R. Sodii bisulphitis, ʒj–ij.
Tincturæ aurantii, f.ʒ ij.
Aquæ, f.ʒ x. M.

One teaspoonful every two hours. Sometimes, in place of water a bitter infusion, like that of quassia, has been employed.

The sulphites have not been found so valuable in this disease as was expected at their introduction.

THOMAS R. DRYSDALE, M. D., PHILADELPHIA.

This physician, after a wide experience in all the forms of diphtheria, is persuaded that the most valuable of all remedies is *chlorate of potash*, properly and efficiently administered. (*Medical and Surgical Reporter*, March, 1877.) He attributes its failures to the timidity with which it has been given. The formula he is in the habit of using is:

993. R. Pulv. potassii chloratis, ʒ ij.
Syrupi limonum, f.ʒ j.
Aquæ, f.ʒ iij. M.

To a child under two years old, a teaspoonful; from two to ten years old, a dessertspoonful; and over this age a tablespoonful, which is also the dose commenced with in adults; the dose being repeated every three hours, or oftener, according to the severity of the case.

All local treatment, except by the solution itself, is unnecessary, for that it has a solvent action on the membrane, has been proved by experiment; and the parts involved are so frequently bathed by swallowing it, that a true and free topical application is made every time it is administered. Taking advantage of this local action, the physician should direct the nares to be injected with it when they are affected; and in cases of croup, particularly after tracheotomy, apply it by means of the atomizer.

Another advantage is, that other remedies may be used in connection with it. For instance, when there is much spasm of the larynx, emetics may be given, and the chlorate used after them; or, when the case is decidedly asthenic, iron and quinine, stimulants and nourishment, may be administered at the same time.

This treatment has proved so successful, that when called to an ordinary case of diphtheria, before it has reached the larynx, or traveled

upward toward the brain, producing convulsions, Dr. D. feels but little apprehension; for, in a large practice of many years, but few cases have been met with which have resisted it.

Dr. W. W. CARPENTER asserts (in the *South. Med. Rec.*, May, 1879,) that chlorate of potash cannot be borne in sufficient quantity to cure an asthenic case of diphtheria, without causing a dangerous, if not fatal, depression of the heart. If combined with quinine or any of its alkaloids, to steady the heart's action, it can be safely borne in larger doses. In union with tinct. ferri mur. and quinia, we not only have a much more effective remedy, but a far safer one; or it may be combined with sulphurous acid, as:

994. ℞. Acidi sulphurosi, ℥ vj.
Glycerinæ, ℥ iv.
Sat. sol. potassii chloratis, ad ℥ viij. M.
From one-half to two teaspoonfuls every half hour, according to age.

Dr. JAMES TYSON (in the Philadelphia *Medical Times*, February 15th, 1879,) speaks strongly in favor of Dr. BILLINGTON'S treatment of diphtheria. This is the frequently-repeated small dose of tinct. ferri chloridi, and sol. potassii chloratis, alternately, every half hour, following each, for two or three minutes, with a spray, from a hand atomizer, of liq. calcis and carbolic acid. The formulæ are:

995. ℞. Tinct. ferri chloridi, f. ℥ j–iss.
Glycerinæ,
Aquæ, āā f. ℥ j. M.

996. ℞. Potassii chloratis, ℥ ss–j.
Glycerinæ, f. ℥ ss.
Liquoris calcis, f. ℥ iss. M.

997. ℞. Acidi carbolici, ♏ xv.
Liquoris calcis, f. ℥ vi. M.
For spray.

DR. ROBERT BELL, GLASGOW, SCOTLAND.

998. ℞. Acidi carbolici, f. ℥ ij.
Acidi sulphurosi, f. ℥ vj.
Tincturæ ferri chloridi,
Glycerinæ, āā f. ℥ j. M.
Apply to the throat with a large camel's-hair pencil, or by means of the spray apparatus, every two hours.

999. ℞. Potassii chloratis, ℥ iij.
Acidi sulphurosi, f. ℥ iijss.
Tincturæ ferri chloridi, f. ℥ iij.
Glycerinæ, f. ℥ j.
Aquam, ad f. ℥ vj. M.
A dessertspoonful every two hours.

With this medication must be combined free stimulation and plenty of nourishment, in the shape of soups, jellies, and milk, from the very outset of the disease.

DR. CARLO PAVESI, ITALY.

This writer in the (*Annali di Medicina*, August, 1876,) gives a formula which he recommends in the treatment of diphtheria. It is founded on the antizymotic properties of chloral, salicylic acid, and the sulphites. It is as follows:

1000. ℞. Chloral hydratis,
Acidi salicylici,
Glycerinæ,
Sodii sulphitis, āā ʒ iij.
Alcoholis, f. ʒ ij.
Aquæ, f. ʒ vij. M.

The whole is put into a strong glass vessel, which is closed, and exposed to a heat of 100° to 120° Fahr. for a few minutes, until the sulphite, salicylic acid, and chloral are completely devolved. A homogeneous solution is produced, which is filtered through bibulous paper, and preserved in a well-closed vessel. It is an oily, limpid, colorless liquid, having the odor of its constituent parts. It is insoluble with water. On the application of proper tests, the chloral, salicylic acid, sulphite of soda, and glycerine are found to be unchanged.

Used both internally and externally, it is an energetic antiseptic, antifermentative, disinfectant, hæmostatic, and preservative, as well as a destroyer of parasitic organisms. Dr. PAVESI says that it may be used as an antiseptic, and also as a sedative, in a large number of diseases.

THOMAS HILLIER, M. D., F. R. C. P., ETC., LONDON.

1001. ℞. Hydrargyri chloridi mitis, gr. iij–vj.
Pulveris ipecacuanhæ compositi, gr. vj. M.
For six powders; one every two or three hours for a child.

Calomel is now almost discarded in the treatment of diphtheria. Our author is not prepared to give it up. In some of his worst cases, in which recovery occurred, this drug was the remedy. It is not to be used indiscriminately in all cases. It should be limited to children with moderate constitutions, and to cases in which the exudation is firm and thick, or causing laryngeal obstruction with sthenic symptoms. It is to be continued until the bowels are relaxed with greenish

stools. At the same time, abundant fluid nourishment, and sometimes wine, is to be given.

DR. H. V. SWERINGEN, FORT WAYNE, INDIANA.

This observer believes that prompt cinchonism, followed by an alterative tonic, is the most proper and successful treatment for diphtheria. The line of treatment he pursued was as follows, for a child of six years old:

1002. ℞. Quiniæ sulphatis, gr. xxxij.
Acidi tannici, gr. x.
Syrupi simplicis, f.℥j.
Tincturæ olei menthæ piperitæ, gtt. iij. M.
A teaspoonful every three hours until cinchonism is induced.

After which (or it may be administered alternately with the above) the following is given:

1003. ℞. Potassii iodidi, gr. xxxij.
Potassii bromidi, ℥ij.
Syrupi simplicis,
Tincturæ cinchonæ compositæ, āā f.℥j. M.
Make a solution. A teaspoonful every three hours.

Alum and ipecac., as emetics, are useful when the exudation shows a disposition to extend to the larynx, or when there is much difficulty of breathing, from the tumefaction of the fauces, or from the accumulation of the pseudo-membranous deposits.

DR. P. H. KRETSCHMAR, NEW YORK,

Also strongly recommends cinchonism which he produces in children by the frequent use of the following ointment. (*Hospital Gazette*, 1879.)

1004. ℞. Quiniæ sulphatis,
Chloriformi,
Balsami Peruviani, āā ℥ss.
Adipis, ℥vj. M.
For frequent inunction.

DR. E. WISS, PRUSSIA,

Also holds that *quinine* is the most potent drug to prevent the infection and destroy its activity. (*Wiener Medical Zeitung*, No. 35, 1879.) Its action is increased by *muriate of ammonia*, which also acts beneficially on the catarrhal affection. With these iron is needed as a tonic. Hence, Dr. Wiss' treatment is:

1005. ℞. Quiniæ sulphatis, gr. v–x.
Ammon. muriatis, ʒ iss.
Acidi muriatici, gtt. iij.
Syr. cort. aurant,
Aquæ destillatæ, āā f.ʒ iij. M.
Dose, a teaspoonful or desertspoonful for a child.

As soon as the fever disappears he gives from five to ten drops of the tincture of the chloride of iron three times daily, in a wineglass of sweetened water. This practice he has pursued for thirteen years with most satisfactory success.

DR. F. PEYRE PORCHER, SOUTH CAROLINA.

1006. ℞. Potassii chloratis, ʒ j–ij.
Quiniæ sulphatis, ℈ j.
Tinct. ferri chloridi, f.ʒ ij.
Sodii hyposulphitis, ʒ j.
Aquæ, f.ʒ vij. M.
A teaspoonful to a dessertspoonful to persons exposed to diphtheria.

THOMAS HAWKES TANNER, M. D., F. L. S., ETC., LONDON.

1007. ℞. Quiniæ sulphatis, gr. xxiv.
Acidi muriatici diluti, f.ʒ ij.
Tincturæ ferri chloridi, f.ʒ iij.
Infusi calumbæ, f.ʒ vj M.
A tablespoonful, in water, thrice daily.

This preparation is also recommended by Dr. AITKEN for the treatment of diphtheria.

Dr. C. S. KILNER says of *iron*, (*Lancet*, May, 1879,) that it is one of the best remedies in the disease. His treatment is to give the tincture of the chloride in large doses, internally, with chlorate of potash, and to swab the throat with:

1008. ℞. Acidi carbolici, ʒ j.
Acidi sulphurosi, ʒ iij.
Tinct. ferri choloridi,
Glycerinæ, āā f.ʒ ss. M.
Use locally to the throat.

Stimulants and concentrated food from the outset.

DR. T. M. LOWNDS,

Writes to the *Lancet* (March 22d, 1879,) that for eleven years he has pursued the following treatment "with almost unbroken success:"

1009. ℞. Tinct. ferri perchloridi, f.ʒ iij–iv.
Liquoris ammon. acetat., f.ʒ jss–ij.
Potassii chloratis, ʒ j–jss.
Aquam, ad f.ʒ viij. M.

The dose and frequency is modified according to age and severity of the disease; in the worst cases a tablespoonful every hour, during the first day or days of treatment.

He never interferes with the sloughing exudation in any way, only prescribing a gargle or wash containing half a grain of permanganate of potash in an ounce of distilled water, to be used frequently. This may be applied with a sponge or a brush, or inhaled as atomized vapor. He always tries to get one evacuation daily from the bowels, and supports the powers of life by wine, soup, milk, &c., as each case seems to demand. Lastly, he insists on perfect ventilation of the bedroom by a window opened at the top.

DR. B. RHETT, CHARLESTON, S. C.

Upon seeing a case of diphtheria, this writer (*Charleston Medical Journal and Review*, October, 1874; January, 1876,) at once gives a moderate mercurial purgative (hydrargyri chloridi mitis, gr x,) on the importance of which he lays especial stress. (Compare Dr. HILLIER'S remarks, above.) Tinctura ferri chloridi is then administered in suitable doses, and the throat is swabbed, gargled, or atomized with the following:

1010. R. Acidi muriatici,
Acidi carbolici, āā ♏xx.
Glycerinæ, ℥j.
Aquæ, ℥vij. M.

Use frequently.

THE TREATMENT OF THE PARALYSIS.

SIR JOHN ROSE CORMAC, M. D., PARIS.

In an article on this form of paralysis, in the *Edinburgh Medical Journal*, Aug., 1876, this writer observes that iron is particularly indicated, as the patients are always anæmic. There are few cases in which its administration does not prove itself in an obvious manner to be useful in a high degree. Sometimes it is only borne in very small doses.

Nux vomica, either in the form of extract or *strychnia*, taken daily, with some ordinary combination of laxatives, such as the compound rhubarb pill, ought to constitute a part of the treatment in nearly every case. The dose ought to be moderate, for large doses prove too exciting to the nervous system, and so tend to exhaust rather than invigorate its flagging powers. From ½ a grain to 2 grains of the extract once a day, with or without the occasional or constant addition

of from 5 to 10 drops of the liquor strychniæ (B. Ph.,) two or three times a day, are suitable doses.

Local treatment is of the most importance with a view to direct toward the wasted and wasting muscles a greater supply of blood, and thereby improve their nutrition. Occasional *blisters* act very beneficially in this way; but they must not be relied on to the exclusion of the constant use of stimulating pastes or liniments. No local stimulant is more efficacious, or better adapted for continuous use than a *ginger and mustard paste*. The object of using the paste is to maintain a warm glow in the skin without vesicating it. The potency of the paste must therefore be proportioned to the susceptibility of the skin. In some excitable patients who cannot bear long-continued counter-irritation of the skin, gentle kneading or *massage* of the paralyzed muscles, three or four times in the twenty-four hours, will be found useful as a means of directing a supply of blood to them. In such cases, after each kneading, a moderately stimulating liniment containing a small quantity of laudanum may be applied with great benefit. The laudanum prevents an uneasy, bruised feeling, which is often complained of after the kneading, and in irritable subjects is apt to induce restlessness and insomnia.

Galvanic excitement of contraction in the paralyzed muscles is often decidedly useful; but it is a measure which requires to be employed with moderation and at intervals of about twenty-four hours. If resorted to too early, or too freely, it exhausts the nervous power of the affected muscles.

For the paralysis following diphtheria, the following formula (recommended by Prof. METCALFE, of New York,) is useful:

1011. ℞. Strychniæ, gr. j.
Acidi nitrici diluti, f. ʒ j.
Aquæ, f. ʒ vij. M.

From three to five drops, in a dessertspoonful of water, are to be given three times daily to a child of three years.

The anæmic state which succeeds diphtheria is to be remedied by the administration of iron, for several weeks.

RÉSUMÉ OF REMEDIES.

INTERNAL REMEDIES.

Alcohol, according to Dr. E. N. CHAPMAN, of Brooklyn, "neutralizes the diphtheritic poison, sets free the nerves of animal life, subdues the fever and inflammation, destroys the pabulum that sustains the membrane, cuts short the dis-

ease, conquers its sequelæ, and shields the other members of the family from an attack."

Ammonii Murias. Dr. W. W. OGLESBY, of Oregon, has had very favorable results with this agent. He gives:

1012. ℞. Ammonii muriat., Pulv. acaciæ, Sacch. alb., āā ʒ ij. Aquæ font., ʒ iv. M.
A teaspoonful every two hours.

When the depression is marked, he adds alcoholic stimulants; and for a gargle, uses chlorine water.

Apomorphia, in the dose of gr. ¼, by the mouth, or gr. $\frac{1}{15}$, hypodermically, is a certain, rapid, and useful emetic in diphtheria.

Aqua Chlorinii has been found a valuable internal remedy, by Dr. J. S. BENSON. (*Canada Lancet,* January, 1876.) He gives it in doses of a teaspoonful or a dessertspoonful, to children, every three hours. In all cases, it should be given without any addition of water.

Carbolicum Acidum, gtt. j, in solution, every hour, with steam inhalations, is a plan advocated by Dr. F. A. MCEWEN. (*Practitioner,* December, 1878.)

Chloral Hydras. Dr. FARRINI, in Tunis, as well as several Italian physicians, have used with much success, in diphtheria, a solution of chloral in glycerine.

1013. ℞. Chloral hydratis, gr. xxx–xl. Glycerinæ, ʒ iv–v. M.
The dose is varied according to the age, and may be given in water, to the taste.

Dr. ROKITANSKY paints the throat with a fifty per cent. solution.

Cubeba. In the early stages of the affection, M. TRIDEAU recommends cubebs in enormous doses—ʒ ij to a child of one year, ℥ iss to an adult, daily. Other observers have spoken well of this treatment. (*London Med. Record,* July, 1877.)

Cupri Sulphas ranks, according to Dr. W. SQUIRE, with alum as one of the best and most effectual emetics in diphtheria. He directs:

1014. ℞. Cupri sulphatis, gr. v. Aquæ, f. ℥ j.
A teaspoonful at a time, to young children.

**Ferri Chloridi Tinctura* is much employed in diphtheria. It should be commenced on the first day of the illness, or as soon as the patient is seen, and continued until the tongue becomes red and the throat improves. When deposit has already taken place, the good effects of the treatment will be shown, not by any alteration in the size of the patch, but by a diminution in the accompanying secretion, and by improvement of the general symptoms. The iron treatment, as carried out by Dr. WM. YEATS, (*Edinburgh Medical Journal,* July, 1876,) is as follows: As soon as a case came under his notice, he prescribed, for adults, 10-drop doses of the strong liq. ferri perchloridi, with 10 to 15-grain doses of chlorate of potash, to be taken in a wineglassful of

water, every two hours, until decided improvement was evident, when the interval was prolonged. The dose was modified for children, of course. Vomiting was usually set up by the first two or three doses, but the patient, being warned of this, was instructed to persevere, and afterward there was no trouble in this way. Constipation was rarely complained of, and when it did happen, a little glycerine added to each dose, obviated the difficulty. The local treatment was in the following form: Liq. ferri perchloridi and glycerine, in equal parts, which was brushed over the exudations daily. The glycerine helps to dissolve the slough, and the iron hardens the subjacent surface, and considerably modifies further exudation.

Guaiacum. The following formula has been recommended:

1015. ℞. Tincturæ guaiaci ammoniatæ, f. ʒ ss–v.
Tincturæ cinchonæ compositæ, f. ʒ ss.
Potassii chloratis, ℈ iv.
Mellis, q. s.
Aquæ, ad f. ʒ viij. M.

From a teaspoonful to a tablespoonful, from one to five hours, or thrice daily, according to the severity of the case.

Guaiacum, as a gargle, in all varieties of *sore throat*, *hoarseness*, etc., is a remedy of ancient and acknowledged repute.

Hydrargyri Chloridum Mite, Dr. Duer, of Philadelphia, (*American Supplement to Obstetrical Journal of Great Britain and Ireland*, July, 1873,) highly extols the efficacy of small doses of calomel and large doses of the bicarbonate of soda, and the free use of nutritious food and brandy. He states that he has treated a large number of cases, of all grades of severity, by this plan, with satisfactory results.

Dr. P. F. Whitehead combines the calomel with quinine and iron:

1016. ℞. Hydrargyri chloridi mitis, gr. vj.
Sodii bicarbonatis, ʒ j.
Ferri redacti,
Quiniæ sulphatis, āā gr. xxiv.

Enclose in twelve capsules. One every two hours.

Under this treatment, he has repeatedly seen the pseudo-membrane disappear, and, upon the cessation of the mercury and soda, return, and again disappear when the mercury and soda were resumed. The mercury and soda should be continued until *after* all signs of the pseudo-membrane have disappeared. There need be no apprehension of ptyalism. The excess of the alkali prevents it. (*Trans. Mississippi Med. Soc.*, 1878.)

Hydrargyri Cyanuretum. Dr. A. Erichsen (*St. Petersburg Med. Woch.*, April 14th, 1877,) on the strength of twenty-five cases in which he tried it, strongly recommends minute doses of cyanide of mercury (gr. $\frac{1}{40}$–$\frac{1}{20}$) in diphtheria. He believes in the efficacy of mercury abridging the duration of the diphtheritic process, while he knows of no other preparation except this which does not quickly disturb digestion and nutrition. Given in small doses, it scarcely disturbs the alimentary canal at all, even when continued for a long time.

Potassii Bichromas is highly spoken of, gr. $\frac{1}{16}$–$\frac{1}{8}$ being given in water every half hour till vomiting is caused, when it is to be continued every two hours.

Potassii Chloras is the old and tried stand-by in diphtheria. It must be given in large and frequent doses. (Page 507.)

Potassæ Liquor has proved itself of the utmost value in many severe cases. It may be given, gtt. xx, every two or three hours as long as any membrane is present.

Quiniæ Sulphas has been advocated. (F. 1002, 1004.)

Salicylicum Acidum is of doubtful utility.

Sodii Benzoas. Prof. KLEBS, of Prague, (*Der Prak. Arzt.*, Jan., 1879,) praises this as the best of antiseptics and an antidote to the diphtheritic poison. He gives to adults as much as ℥ ss daily, dissolved with an equal amount of mint sugar in water. Others have also spoken well of it in smaller doses, ʒ j–ij daily.

Sulphites and *Sulpho-Carbolates of Sodium, etc.*, have been at times extravagantly praised, and again wholly condemned. In some epidemics they certainly have been very efficacious.

**Stimulants.* Dr. W. SQUIRE, of London, lays down the rule, the less the quantity of nourishment the patient is able to take, the greater must be the dependence on the stimulant. The youngest children may require a teaspoonful of brandy every two hours; a child of three years of age, two teaspoonfuls. It may be given diluted in any way, very small quantities at a time, frequently repeated. Older children take it well mixed with ice or soda water. Champagne is often a good substitute for brandy.

LOCAL APPLICATIONS.

Argenti Nitras. Dr. W. SQUIRE, of London, recommends in diphtheria, when the whole of the false membrane is visible, and its margins within reach, to apply to the patch, and to the surrounding turgid mucous membrane, a solution of the nitrate (one part to three of distilled water.) When there is much redness and pain, a weaker solution (one part to eight or twelve of distilled water,) penciled over the whole surface, tends to prevent further exudation and affords relief. The solid nitrate is objectionable.

Boracicum Acidum has been highly praised, painted over the throat and membranes in saturated solution and used as a gargle.

Brominium. The inhalation of the vapor of bromine has been found of service.

Calcis Aqua. Lime water inhalations are very useful, and as a gargle highly esteemed.

Carbolicum Acidum. Dr. C. SEDGWICK recommends highly (*Medical Times*, February 27th, 1867,) the following formula:

1017. ℞. Acidi carbolici, ♏xx.
Acidi acetici, ♏xxx.
Mix and add gradually,
Mellis,
Tincturæ myrrhæ, āā f. ʒ ij.
Aquam, ad. f. ℥ j.
Use as a gargle for adults; apply by means of a sponge to the throats of children.

Dr. F. C. HORTZ, of New York, (*Medical Record*, August, 1871,) uses:

1018. ℞. Acidi carbolici cryst., Alcoholis, āā ʒj. Aquæ, f.ʒv. Tincturæ iodinii, f.ʒiss. M.

This makes a perfectly clear, transparent mixture, of a brown-red color, which soon, however, becomes pale yellow. This should be applied to the diphtheritic exudation three or four times in twenty-four hours, by means of a camel's-hair brush. In adults it should be used in a diluted form (fifteen to thirty drops to a cup of water) as a frequent gargle, and for injections into the nostrils if the nose is implicated.

Eucalypti Oleum. This has been introduced as a remedy in diphtheria by Prof. MOSLER. He adds a teaspoonful of a mixture of equal parts of the oil with alcohol, to the water used in a steam atomizer, and directs the inhalation to be kept up twenty minutes in each hour. It causes no irritation of the bronchi and acts as a powerful disinfectant.

Ferri Chloridi Tinctura, applied alone or diluted with equal parts of glycerine.

Ferri Sulphas. The following gargle is highly recommended by Dr. DE SABBATA, of Venice:

1019. ℞. Ferri sulphatis puri, ʒj. Acidi sulphurici diluti, ♏xxv. Aquæ, f.ʒiij. M.

Use as a gargle. For a topical application, aquæ f.ʒij should be used in the above. (DOBELL'S *Reports*, 1876.)

Dr. FERA uses the finely powdered dried sulphate. He applies it with a horse-hair brush to the diphtheritic patches, and repeats it twice a day. The benefit is prompt and visible.

Hydrargyrum Chloridum Corrosivum. Dr. TOMASSO BILLOTTI has tried in a number of severe cases:

1020. ℞. Hydrarg. chlor. corrosivi, gr. j. Alcoholis, ♏xv. Aquæ, ♏xx. M.

Apply with a fine camel's-hair brush to the diphtheritic patches, two to five times a day. The application must be performed with care, though he never had any bad results from it. All his patients recovered in one or two days. (DOBELL'S *Reports*, 1877.)

Iodinium. Dr. WARING-CURRAN obtains excellent results from iodine inhalations:

1021. ℞. Potassii iodidi, Iodinii, āā gr. iv. Alcoholis, f.ʒiv. Aquæ, f.ʒiv. M.

A teaspoonful (gradually increased to a tablespoonful) of the solution is to be placed, with a handful of dried garden sage, in a pint of boiling vinegar, in a common inhaling jar, for inhalation. The inhalations are to be repeated about twelve times daily.

**Lacticum Acidum.* Lactic acid inhalations, by means of a spray producer (15 to 20 gtt. aquæ f.ʒss,) are said to act as a powerful solvent of the false membrane.

Limonum Succus is strongly recommended as a gargle.

**Muriaticum Acidum.* Dr. HILLIER prefers this caustic to nitrate of silver. In very dilute solution it is an excellent gargle.

Potassii Chloras in strong solution is an excellent gargle.

Potassii Permanganas. Dr. WATSON CAMPBELL recommends (*Edinburgh Medical Journal*, February, 1867,) the following:

1022. ℞. Potassii permanganatis, gr. x.
Aquæ, f.℥ xx. M.
To be used as a gargle, together with the internal administration of iron and port wine.

Salicylicum Acidum. For those who can gargle, Dr. WAGNER, of Fribourg, recommends the following formula:

1023. ℞. Salicylic acid, 150 parts.
Alcohol, 15 "
Distilled water, 150 " M.
To be used every two hours.

He reports fifteen serious cases as being cured by this method. For children too young to gargle, he gives the acid in water or wine, in doses of $1\frac{1}{2}$ to $4\frac{3}{4}$ grains every two hours.

Sassafras, oil of, is praised as a local application, by Dr. KENNARD, of St. Louis.

Sodæ Chlorinatæ Liquor, used as a disinfectant gargle.

**Sodii Hyposulphis.* Dr. MAYNARD recommends (*Medical Times and Gazette*, December 30th, 1865,) the local application of the hyposulphite of soda. In the very early stages he employs, two or three times a day, the following lotion:

1024. ℞. Sodii hyposulphitis, ℥ ij.
Glycerinæ, f.℥ ij.
Aquæ, f.℥ vj. M.
This, he finds, generally removes the incipient exudation in forty-eight hours, or less. In advanced stages he washes the throat out well with warm water by means of a flexible syringe, and then dresses the affected part with the above solution, using at the same time the following gargle:

1025. ℞. Sodii hyposulphitis, ℥ j.
Glycerinæ, ℥ j.
Aquæ, Oj. M.

The effect of this solution he asserts to be most marked; it appears to solidify and dry up the false membrane, and when the syringe is again used, which it should be frequently, the force of the water will wholly or partially wash it away. The exudation rarely re-forms, and the patient makes a comparatively rapid recovery.

Sulphur. The insufflation of sublimed sulphur was first recommended by Dr. BARBOSA. (*Practitioner*, November, 1868.) The unwashed flower of sulphur

should be applied, by means of a simple tube slightly bent, directly to the affected surfaces. Reports of its utility are conflicting.

Terebinthinæ Oleum. Dr. SYMONDS advises (*British Medical Journal*, March 14th, 1868,) the application of turpentine at the very commencement. Hot turpentine epithems also often relieve the local distress. Dr. TAUBE uses turpentine inhalations, 15 to 20 drops of the oil in hot water, hourly.

HYDROCEPHALUS, ACUTE AND CHRONIC.

C. WEST, M. D.

The value of *purgatives* can scarcely be overrated in acute hydrocephalus, but they must be given so as not merely to obtain free action of the bowels, but to maintain it for some days. This end is best secured, after having once overcome the constipation, by giving small doses of a purgative every five or six hours. The administration of strong cathartics every morning will not answer the end nearly so well; if they cause sickness, it is better to give a single full dose of calomel, and follow it up with sulphate of magnesia at short intervals. The following mixture is then advised:

1026.	R.	Magnesiæ sulphatis,	℥j.	
		Potassii nitratis,	gr. x.	
		Syrupi limonis,	f.℥iij.	
		Aquæ,	f.℥ix.	M.

A dessertspoonful (f.℥ij) thrice daily, for a child of one year.

In all cases, of course, the solution and regulation of the purgatives must be determined by the strength of the child.

The local abstraction of blood by *leeches* sometimes proves serviceable when there is much febrile action. They should be placed on the crown of the head rather than on the temples. They are inadmissible when the patient is much debilitated.

J. S. RAMSKILL, M. D.

The *iodide of iron* is usually well borne by hydrocephalic children, unless there be a tendency to congestion or inflammatory action. Among the children of the poor, the combination of *cod-liver oil* and syrup of the iodide almost always gives satisfactory results.

The *mercurial* plan of treatment advised by Prof. GOLIS, of Vienna,

is regarded by Dr. RAMSKILL as one of the best. The head should be shaved, and the following ointment prescribed :

1027. ℞. Unguenti hydrargyri, gr. xx–xl.
Unguenti olei juniperis, ℥j. M.
To be rubbed on the shaved scalp, twice a day.

The child should wear a woolen cap, to prevent the risk of the perspiration being checked by the cold air. *Calomel* (gr. ¼–ss) should be given thrice daily. If this purges too much, the mercurial inunction should be alone employed. The treatment is to be persevered in for thirty or forty days, when, if there be some improvement, the remedies may be gradually diminished, but the cap is to be worn after the inunction has been discontinued. If there be no marked improvement after six or eight weeks, some diuretic, as *acetate of potash*, or *squill*, may be added, and a couple of *issues* may be inserted in the occiput. *Blisters* to the nape of the neck may be advantageously substituted for these. Whenever there is heat of head, and the child grows fretful, restless and irritable, a couple of *leeches* behind the ears will be found of service. When convalescence has begun, it may be accelerated by small doses of *quinine*.

DR. A. N. READ, OHIO.

This writer has reported remarkable success in several cases of chronic hydrocephalus, by the external use of pure *glycerine*. (*Transactions of the Ohio Medical Society*, 1876.) He gives, for instance, the case of a child, eighteen months old; head, twenty-four inches in circumference; sutures separated, and bulging of integuments. He applied twice daily to the head glycerine, with a little tincture of iodine, and directed the use of a close-fitting cap. The application caused the child "to sweat dreadfully." This suggested that glycerine, because of its strong affinity for water, had caused an exudation of serum, which, if continued, might cure the child—a hope strengthened by remembering the drain following its application to indurations of the uterus. After a year's use, the child was cured. In 1874, the child was attending school, with fair intellect and good health.

Dr. MERVEL, of Monroeville, Ohio, has reported the result of a partial trial in one case. Child under one year old; head circumference, twenty-two inches; eyes much protruded, as well as integuments over separated sutures. Applications of glycerine were followed by

profuse serous flow. In three weeks the eyes were restored to their natural position, and there was no protrusion between cranial sutures; but the head was not reduced in size.

PROF. ELLERSLIE WALLACE, M. D., PHILADELPHIA.

The following is one of the best tonics which can be given in this disease:

1028. ℞. Potassii iodidi, ℈j.
Syrupi tolutani, f.℥ss.
Aquæ, f.℥ij.
A teaspoonful morning and evening, after food.

In some cases, the *elixir quiniæ, ferri et strychniæ*, acts in a most satisfactory manner.

DR. NATHAN S. DAVIS, CHICAGO.

The method in chronic hydrocephalus proposed by Prof. BRAINARD, of puncturing the head and injecting a weak solution of iodine and iodide of potassium, has been tried, but no successful case has been reported. The objects toward which medical treatment must be directed, are, first, to allay the morbid excitement of the cerebral structures; and, second, to exert a gentle, yet persistent alterative and diuretic influence, avoiding, carefully, any impairment of the digestive organs. Dr. DAVIS has succeeded in accomplishing these purposes by the following prescription:

1029. ℞. Extracti fluidi scutellariæ, f.℥ij.
Tincturæ digitalis, f.℥ss.
Potassii iodidi, ℥ij.
Extracti fluidi hyoscyami, f.℥ss. M.
Twenty drops, four times a day, in sweetened water.

If the digitalis is found to be exerting too much influence, the dose must be diminished. *Mercurials* are of no advantage in the chronic stage; though, in the early inflammatory stage, combined with mild laxatives, they might check the progress of the disease.

RÉSUMÉ OF REMEDIES.

Antimonii et Potassæ Tartras is now much less employed than formerly, being considered less efficacious than cod-liver oil, iodine, and nutritives.

Hydrargyri Chloridum Corrosivum has been given in doses of gr. $\frac{1}{30}$ to $\frac{1}{12}$, with good results, but calomel is generally preferred, when mercury at all is given. The mercurial treatment of acute hydrocephalus, once so general, is now

rarely resorted to, being regarded as of little value, if not actually hurtful. In *chronic* hydrocephalus, it is, however, still employed.

Magnesii Carbonas has been advised in doses of ʒj–ij, saturated with lemon-juice, taken every two or three hours, as a purgative, which sets well on the stomach, even when very irritable.

Potassii Iodidum is recommended by Dr. HILLIER, gr. j every four hours, for young children, when the disease is declared, together with ice or cold lotions to the head, mercurial aperients and absolute rest in a quiet, darkened room.

Terebinthinæ Oleum is recommended by Dr. COPLAND in incipient hydrocephalus, in doses of ♏v–x, with ♏xx–xl of castor oil. He also speaks highly of turpentine enemata.

**Cathartics* have a high value in cases of acute hydrocephalus.

Leeches to the crown of the head are of service when there is much febrile action, if the patient be not too much debilitated.

EXTERNAL REMEDIES.

Croton Oil counter-irritation to the shaven scalp, has been recommended by Dr. R. S. TURNER. (*Edinburgh Medical Journal*, November, 1868.) He uses the following liniment:

1030. ℞. Olei tiglii, 1 part.
Olei olivæ, 3 parts. M.

**Hydrargyrum.* Mercurial inunction is recommended by Prof. GOLIS and Dr. RAMSKILL.

Iodine lotions to the scalp, or inunction of iodine ointment, used conjointly with iodide of iron and cod-liver oil, internally, offer a chance of success in the advanced stage.

Iodoform inunctions of the scalp have been praised by Dr. MOLESCHOTT, of Turin.

Ipecacuanha. The following counter-irritation is said to have produced great amelioration of the symptoms:

1031. ℞. Pulveris ipecacuanhæ, ʒij.
Olei olivæ, f. ʒij.
Adipis, ʒss. M.

To be rubbed on freely for fifteen or twenty minutes, thrice daily, and the parts then enveloped in flannel. In thirty or thirty-six hours, an eruption appears, which remains out for three or four days.

INFANTILE PARALYSIS.

ALLEN M'LANE HAMILTON, M. D., NEW YORK.

The most active and useful agent in the therapeusis of this disease, is *electricity*, either as galvanism or faradism, applied to the muscles. As, however, there is a central lesion, it is advisable to begin an energetic course of bromides and ergot (gtt. v of the fluid extract), with the actual cautery, before the atrophic condition commences. *Strychnia* is also an efficient agent. Young children may commence with gr. $^1/_{120}$, which may slowly be increased. A palatable form is:

HAMMOND'S SOLUTION:

1032.	℞.	Strychniæ sulphatis,		gr. j.	
		Quiniæ sulphatis,			
		Ferri pyrophosphatis,	āā	ʒj.	
		Acidi phosphorici diluti,			
		Syrupi zingiberis,	āā	f.ʒ ij.	M.

Sixteen drops contain gr. $\frac{1}{120}$ of strychnia.

Cod-liver oil, sea-air, good food and tonics are all important. The paralyzed muscles should be treated by massage, heat and cold, and the faradic and galvanic currents. Some writers speak highly of "JOUNOD'S Boot," the paralyzed limb being placed in the boot and the air exhausted.

Much may be done to prevent the contractions and deformities which accompany old cases of this disease, by the daily use of passive exercises and shampooing; recovery of power is often contributed to by the use of *galvanism*. The mild, continuous current is found to be especially useful in the class of flaccid muscles, whilst no good is ever done by galvanism in the class of rigid muscles.

Dr. WEST gives in this disease *nux vomica*, gr. $\frac{1}{8}$ to a child three years old, increasing the dose till it reaches $\frac{1}{3}$ of a grain, thrice daily.

The use of *ergot* has also been advocated, gtt. v of the fluid extract thrice daily, to a child two years old.

The etiological treatment has reference to dentition, worms, constipation, anæmia, præputial irritation, etc.

INFANTILE SYPHILIS.

EDWARD ELLIS, M. D., LONDON.

This author remarks that *mercury* is the best sheet-anchor. In treating children he prefers the use of gray powder, in doses of from ½ a grain, or 2 grains, twice or thrice daily, with a few grains of compound cinnamon powder to prevent the mercury running off by the bowels. This treatment should be persevered in from six to twelve weeks, occasionally substituting corrosive sublimate with bark. Vomiting and diarrhœa are indications for temporarily stopping the mercurial course, or at least for changing its form. Sometimes a little chalk or carbonate of potash added to the gray powder enables it to be well borne. *Black-wash* is the best local application; anal condylomata should be dusted over with calomel, and kept scrupulously clean. Occasionally they may require a touch with nitrate of silver. Caustic is also useful in ulcerations of the mouth and tongue. Iodide of potassium, bark, sarsaparilla, and the syr. ferri iodidi are of value, after the mercurial course, in improving the general health. Baths of corrosive sublimate are recommended in the skin complications.

As examples of prescriptions he gives:

1033.	℞.	Potassii iodidi,	gr. ss–vj.	
		Spiritûs ammoniæ aromatici,	♏j–v.	
		Syrupi sarsaparillæ,	♏x–f.℥j.	
		Aquæ,	f.℥ij–f.℥j.	M.
For syphilitic cachexia in infants, *p. r. n.*				

Where the iodide of potassium does not agree, he prescribes the sodium iodide:

1034.	℞.	Sodii iodidi,	gr. iv.	
		Syrupi sarsaparillæ,	f.℥ss.	
		Decocti sarsaparillæ,	f.℥iv.	M.

R. W. TAYLOR, M. D., NEW YORK.

In the monograph by this author, (*Syphilitic Lesions of the Osseous System in Infants and Young Children*, N. Y., 1875,) he prefers, for the treatment of these lesions, a mixed plan, combining *mercury* and *iodine*. His usual prescription is:

1035. ℞. Hydrargyri bichloridi, gr. j.
Potassii iodidi, ʒ iv.
Syrupi aurantii,
Aquæ, āā f. ʒ ij. M.

Five drops for a child about two months old, increased to fifteen or twenty drops, if the disease does not yield.

There need be no apprehensions of salivation, nor other noxious effects of the mercury, even if, as is generally the case, the medicine has to be continued for a long period of time, for the iodide, in this combination, corrects any such hurtful tendency. It is an important point in the treatment, to suspend the medicine altogether, from time to time, as, otherwise, the system will become habituated to its use, and it will fail of its remedial effect.

A well-regulated and sufficient diet must be maintained while the child is under treatment. As a nurse is liable to contract syphilis from such an infant, cows' milk is the best resource, if the mother is not able to suckle it.

Dr. TAYLOR advises strongly against both hypodermic injections and endermic inunctions of mercurials, as uselessly severe and of doubtful results. Locally, for ulcerations, he applies *iodoform* in the cavities, with a covering, to the other parts, of balsam of Peru ointment. Nodes on the scalp may receive daily frictions with mercurial ointment. When they degenerate into abscesses, a free crucial incision should be made, the detritus carefully removed, and the whole thoroughly mopped out with strong carbolic acid; the cavity then to be stuffed with charpie, and cold-water dressing applied. The next day, this should be removed, and the cavity dusted with iodoform. Cold lotions should be continued as long as any inflammatory symptoms remain.

DR. P. BRYNSBERG PORTER, NEW YORK.

This practitioner states (*American Journal of Obstetrics*, July, 1878,) that he has found, as a general rule, the treatment by mercurial *inunction*, to be the most serviceable, usually in conjunction with such tonic or alterant remedies as seemed indicated. It has the great advantage of not interfering with digestion, as is sometimes the case with agents given by the mouth; though he has almost always found minute and somewhat frequently-repeated doses of calomel well borne, especially when their administration was intermitted from time to time. He generally combines the calomel with soda.

PROF. J. STEINER, M. D., PRAGUE.

As the result of his extensive experience in the Francis Joseph Hospital of Prague, this writer advises the mercurial treatment in infantile syphilis. The preparation he prefers is *calomel*, which he gives in doses of gr. $\frac{1}{4}$–$\frac{1}{3}$–$\frac{1}{2}$, three or four times a day. If there is anæmia, he combines it with saccharated carbonate of iron; if colic and sleeplessness, with Dover's powder. He also uses calomel, locally, for condylomata, fissures, ulcers, etc.

He believes the calomel acts best on lesions of the skin; but when the bones and viscera are involved, he prefers *iodine*, giving it either as iodide of potassium, or as syrup of the iodide of iron. The long-continued use of any form of the drug, he considers prejudicial; but he has observed a wide difference in the tolerance of the drug in infants. He uses tincture of iodine for a local application to syphilides.

PAROTITIS, OR MUMPS.

EDWARD ELLIS, M. D., LONDON.

The swelling of the parotid gland should be fomented several times a day, with a flannel wrung out in a hot lotion containing an opiate, and a linseed-meal poultice applied occasionally. The bowels must be kept open by laxatives.

Should there be metastasis to the brain, a few leeches may be applied to the temples, the feet should be immersed in hot mustard water, and a brisk aperient given every three or four hours. Metastasis to the testicles or mammæ requires fomentations and the same general treatment in the way of purgatives and derivatives.

When the parotitis occurs in the course of measles or scarlatina, it is usually significant of an adynamic condition, and requires supporting and stimulant medication.

PERTUSSIS.

PROF. JOHANN STEINER, M. D., PRAGUE.

This judicious author remarks that we have no specific remedy for whooping-cough, and of all those which have been recommended, *belladonna*, in doses of the extract of $\frac{1}{6}$ or $\frac{1}{2}$ a grain three or four times a day, either alone or in combination with quinine or the oxide of zinc, seems of greatest service. The dose of belladonna is to be gradually increased until symptoms of intoxication appear. When there is abundant mucous secretion and no vomiting, an occasional emetic is useful.

Prof. BARTHOLOW and others, consider the best form for administering belladonna is a solution of the sulphate of atropia:

1036. R. Atropiæ sulphatis, gr. j.
Aquæ destillatæ, f. ℥ j. M.
Two to four drops at a dose.

He believes it most effective in the spasmodic stage, when there is profuse bronchial secretion.

MR. JOHN REYNOLDS, LONDON.

1037. R. Quiniæ sulphatis, gr. xvj.
Acidi sulphurici diluti, q. s.
Tincturæ aurantii, f. ℥ j.
Aquam, ad f. ℥ ij. M.
Two teaspoonfuls every three hours.

Mr. REYNOLDS claims for quinine a *specific abortive* power over whooping-cough. With the above formula he cures his cases in two days. Other physicians report favorably of the method. To do good it must be pushed to a quantity equal to a full antiperiodic dose. To a child under three years, ten grains should be given in twenty-four hours; to a child twelve years old from sixteen to twenty grains should be given in the same time.

Dr. F. FORCHEIMER, of Cincinnati, prefers to give quinine by insufflation. For this purpose a laryngeal insufflator is used—it matters not what kind; this is introduced, and three or four of the powders, the formula for which follows, are blown daily into the larynx, but especially upon the epiglottis and surrounding mucous membrane:

1038. ℞. Quiniæ sulphatis, ℈ j.
Sodii bicarbonat.,
Pulv. acaciæ, āā gr. xx. M.
For ten powders.

When this method is used as described, according to his experience, no cases withstand.

DRS. MEIGS AND PEPPER, PHILADELPHIA.

1039. ℞. Aluminis, ℈ ijss.
Syrupi zingiberis,
Syrupi acaciæ,
Aquæ, āā f.℥ j. M.
A tablespoonful thrice daily, every five or six hours.

This recipe, when prepared with good syrups, tastes very much like lemonade, rendering it acceptable to children.

Our authors more generally employ alum in combination with belladonna. They have obtained better results from the following formula than any other ever employed:

1040. ℞. Extracti belladonnæ, gr. j.
Aluminis, ʒ ss.
Syrupi zingiberis,
Syrupi acaciæ,
Aquæ, āā f.℥ j. M.
A teaspoonful morning, noon and night; also once in the night, if the cough be troublesome.

1041. ℞. Potassii carbonatis, ℈ j.
Cocci., ℈ ss.
Sacchari albi, ʒ j.
Aquæ, f.℥ iv. M.
Dessertspoonful thrice daily, to a child a year old.

This mixture has long enjoyed a high reputation in this country and abroad. Our authors, believing its efficacy to be due to the carbonate of potash, ordinarily omit the cochineal. This recipe, together with the alum and belladonna mixture given above, presents the most useful agents we have to keep down the violence of the disease.

DR. GOLDING BIRD, LONDON.

1042. ℞. Aluminis, gr. xxv.
Extracti conii, gr. xij.
Syrupi rhœados, f.ʒ ij.
Aquæ anethi, f.ʒ iij. M.
A medium-sized spoonful every three hours in the second or nervous period of the disease, after the subsidence of inflammatory symptoms, and when the patient is harassed and exhausted by the attempts to get rid of the copious bronchial secretion.

Under these circumstances, this author considers *alum*, which he administers according to the above formula, the most satisfactory of all remedies, affording the speediest and most marked relief.

PROF. FELIX VON NIEMEYER, M. D., TÜBINGEN.

This author attaches considerable value to a well-managed treatment by *sweating*, especially at the commencement of the disease. When there is mucus in the throat, and a paroxysm of coughing is threatened, he gives:

1043. ℞. Coccinellæ, gr. xij.
Potassii carbonatis, ʒ j.
Syrupi simplicis, f. ʒ j.
Aquæ, f. ʒ iij. M.
A teaspoonful at a dose.

Dr. NIEMEYER cannot admit that any narcotic whatever (belladonna included) has any specific action against this disease. Should the treatment given above prove ineffective, should the child empty its stomach with every paroxysm, should his nutritive condition begin to suffer from constant vomiting and sleepless nights, should convulsions or signs of actual suffocation occur during the seizures, the administration of narcotics is indicated. *Belladonna* enjoys this advantage over opium that, in the condition of the pupil, we have an index for regulation of the dose. To children between the ages of two and four years, we may give the $\frac{1}{8}$ of a grain of the drug, night and morning, gradually increasing the dose up to $\frac{1}{2}$ a grain, or until the pupil begins to dilate. For older children small doses of *morphia*, (gr. $^1/_{12}-^1/_8$, *in die.*) If, immediately after the cough, there still remain audible râles in the chest, if the child grow short of breath, or the respiration become enfeebled throughout a part of the thorax, an *emetic* should be given forthwith, and repeated whenever the symptoms recur. In the third stage, when impoverishment of the blood and general exhaustion furnish the most urgent symptoms, the free administration of meat diets, eggs, wine, and the ferruginous preparation, is indicated.

RÉSUMÉ OF REMEDIES.

Acidum Hydrocyanicum, useful after the catarrhal symptoms have diminished. Dr. WEST was accustomed to prescribe a dose of $\frac{1}{2}$ a minim of dilute hydrocyanic acid every six hours for a child nine months old, gradually increasing the dose to 1 minim every four hours for a child of that age, and so in proportion for older children.

Alumen. Dr. RINGER is of opinion that in complicated cases few remedies give better results than alum; he gives gr. ij–vj every three hours. (See pp. 528-9.)

Ammonii Picras. Dr. Z. T. DELLENBAUGH (*Medical Times*, September, 1878,) reports a number of cures with this agent in from twenty-four to seventy-two hours, and claims it as a specific. The dose to babies is gr. $\frac{1}{12}$; to children, gr. $\frac{1}{8}$, every three hours.

Amyl Nitrite. This is one of the late cures for whooping-cough. Dr. SAWAROSKY directs the patient to breathe several times a day a mixture of a few drops of nitrite of amyl in a drachm of chloroform, at the same time administers, internally, for three days, every two hours, $\frac{1}{12}$ of a grain of silver cyanate and 3 grains of pure clay. Hot food and drinks must be avoided. A cure is effected in a few days. Dr. GEORGE BAYLES has also reported on its use very favorably. (*Va. Medical Monthly*, August, 1877.)

Argenti Iodidum, gr. $\frac{1}{8}$, to a child three years old, is recommended by Dr. BARTLETT as a most effective and pleasant remedy.

Argenti Nitras. Drs. MCNUTT and MAXWELL (*Boston Medical and Surgical Journal*, August 16th, 1871,) use a solution of nitrate of silver, gr. xv to the ounce, applied by the spray atomizer, which seldom fails to effect a cure.

Argenti Oxidum. Dr. W. MACFARLANE (*Australian Medical Gazette*, December 15th, 1869,) has every reason to believe that oxide of silver shortens the pertussis; dose, $\frac{1}{6}$ of a grain, three or four times daily, in any simple powder, up to one year of age.

Belladonna. (F. 1040.) Prof. J. LEWIS SMITH, of New York, commonly employs the *extract of belladonna* in 1-grain pills. For an infant one year old, one pill is dissolved in eight teaspoonfuls of water; three years, in four teaspoonfuls. A teaspoonful to be given one, or, if there be no appreciable effect, three or four times daily. If there be no modification of symptoms, an additional half spoonful should be given on the third day. If *atropia* is used, gr. $\frac{1}{120}$ twice daily, is sufficient.

Benzine, in doses of gtt. xx–xxx in sweetened mucilage, is praised by Drs. BOTTARE and LOCHNER. It has also been inhaled.

Bryonia. In a communication to the *Journal de Therapeutique*, May 25th, 1878, Dr. LOUVET-LAMAR stated that he had derived great advantage from treating the catarrhal stage of pertussis by the tincture of *bryony*, and the paroxysmal stage by the tincture of *drosera*. Of the former, he gives 1 gramme per diem to a child seven years old, and although it may not abridge this first stage of the disease, it diminishes the tracheo-bronchitis very sensibly, and therefore the violence of the cough. When the bronchial tubes are overloaded with mucosities he also administers an emetic. As soon as the paroxysmal character becomes well established, he gives the tincture of drosera, (one gramme daily for a child seven years old,) and as long as there are any râles heard in the chest he associates the bryony with it. It soon lessens the violence of the paroxysms, but may have to be continued two or three weeks before convalescence is established. These agents were introduced by American "eclectic" physicians.

Calx. The carbolate of lime is recommended by Dr. ED. M. SNOW. The gas from the lime used in gas-works has been shown by Dr. W. S. KING to be a re-

markable alleviate in whooping-cough. (*Med. and Surg. Reporter*, May, 1867.)

Castanea, chestnut leaves, recommended by Dr. LUDLOW, of Cincinnati:

1044. ℞. Castaneæ vescæ, ℥ss.
Aquæ bullientis, Oj. M.

Add to this a pint of cold water; sweeten with white sugar, to make it palatable, and administer cold. As much should be given during the day and evening as the patient can be induced to take.

Camphoræ Monobromas is a useful sedative.

Cerii Oxalas. This salt is given in doses of gr. ss–ij, before breakfast, once daily. Dr. T. CLARK has recommended it in the *Practitioner*, 1879; and a New York physician, Dr. MORJE, has reported favorably from its use.

Chloral, in small doses, allays the cough. Dr. P. B. PORTER, of New York, after extensive trials, says he has found it, on the whole, the most reliable and satisfactory agent that he has employed. It has the great advantage over quinine in solution (which he has also used with success), of not being unpleasant to the taste when given in syrup.

Croton Chloral has been highly praised by recent writers. A child a year old can take 1 grain every four hours. It should be specially impressed on parents and nurses, that to do good, it should at first be given every four hours, *night and day*, even should the patient require waking up. At the end of a week, it need only be given every four hours during the day, and at night when the patient is awake.

The worst cases usually completely yield in a fortnight. The drug does not upset the digestive organs, and, by lessening the frequency and duration of the paroxysms, puts an end to troublesome epistaxis and vomiting. Sometimes the first few doses produce a feeling of irritation about the throat and fauces, but this soon passes off. It may be given, gr. j–ij dissolved in compound tincture of cardamom, and sweetened with glycerine.

Drosera. See *Bryonia.*

Hydrargyri Sulphuretum Nigrum, in doses of gr. vij daily, is strongly recommended by Dr. CHIRICOZZI. (DOBELL'S *Reports*, 1877.)

Hydrobromate of Cicutin. This salt of the alkaloid of hemlock has been employed in whooping-cough, asthma, and phthisical cough, by M. LANDUR, with satisfactory results; gr. $\frac{1}{20}$ to $\frac{1}{10}$ may be given an adult every hour or two. (*Bull. Gen. de Therapeutique*, May, 1876.) In pertussis, it is given in doses of $\frac{1}{12}$ of a grain, if necessary, every hour, for a child three years of age, or $\frac{1}{18}$ of a grain for a child of one year, and $\frac{1}{6}$ of a grain for adults.

Morphia, especially the bimeconate, in small doses, is an excellent sedative for the cough.

Morrhuæ Oleum. Mr. PRESTWICH (*Lancet*, December 9th, 1871,) reports a few cases, selected from more than thirty in his own practice, in order to show the value of cod-liver oil in this complaint, which he looks upon as a specific.

Petroleum. Dr. LESSER reccommends rubbing the chest twice a day with a teaspoonful of this substance.

Potassii Bromidum and *Ammonii Bromidum* are popular and efficient sedatives. They may be combined with belladonna, or syrup of wild cherry:

1045. ℞. Potassii bromidi, gr. j–v.
Extracti belladonnæ, gr. $\frac{1}{6}$–j.
Syrupi papaveros, ♏xv.
Aquæ, f. ℥ ij. M.
For one dose every two or three hours. (Dr. E. Ellis.)

Potassii Nitras. The inhalations of nitrous fumes has been recommended.

Potassii Sulphuretum, commended by Dr. MacKelkan, of Canada, in doses of gr. iij–vj in sweetened water. Its beneficial effects are not perceived for five days, when the intervals between the paroxysms of cough become longer, and, after that, their violence diminishes from day to day, until, at the end of ten or fourteen days, it is seldom necessary to pursue the treatment further. As the drug easily spoils by keeping, it is important to have it fresh.

Quinæ Sulphas, is regarded as an almost certain abortant by many. (See above.) Dr. C. F. Swan, of Chicago, (*Med. Jour. and Examiner*, 1877,) recommends Prof. C. Binz's formula:

1046. ℞. Quiniæ sulphatis, ℥j.
Acidi tannici, gr. xv. M.

This aborts one-third to one-half the cases, in three or four days. Dr. Lasinsky treats his patients by insufflations of a powder composed of 15 grains of hydrochlorate of quinine, 30 grains of salicylic acid, and 7 grains of bicarbonate of soda and white sugar. A small quantity of this powder is blown into the larynx twice a day. He states that, in the course of eight days, the attacks become greatly reduced in violence and frequency. (Dobell's *Reports*, 1877.)

Terebinthinæ Oleum, in pertussis complicated with irritative fever, bronchitis, or convulsions, is praised by Dr. Bedford Brown, of Alexandria, Va.

Tonka Bean has been employed with success by Dr. John Cooper, of Philadelphia; gtt. v–viij of the fluid extract every three hours, to a child five years old.

INHALATIONS.

The inhalation of very numerous substances has been tried in whooping cough. Referring for the complete list to the works of Dr. J. Solis Cohen and others, we mention as most promising of success:

Alumen. ℥j to water ℥ vj, to be used twice daily, ten minutes at a time. (Siegle.)

Ammoniæ Liquor, f. ℥ j to a gallon of boiling water. Place in an open pan by the bed-side and evolve steam by introducing a red-hot brick.

Amyl Nitrite, gtt. ij–iij, on a handkerchief, when a paroxysm is impending.

Argenti Nitras, gr. ss–j to water f. ℥ j. Inhale by a nebulizer f. ℥ ss twice daily. Protect the face with a mask, or by smearing with salt and butter.

Belladonna. Make an infusion and inhale the vapor; or, better, throw about ℥ ij of the leaves on burning coals and let the patient inhale the smoke. (Schroeder.)

Benzine. Place small quantities in a number of shallow vessels about the room.

Brominium. Dr. VOGELSANG, of Switzerland, finds that one or two scruples of *bromine*, and as much *bromide of potassium*, to a tumblerful of hot water, placed in the room of a child suffering from whooping cough, affords it great relief The mixture should be renewed three or four times a day. Dr. J. J. CALDWELL recommends:

1047. ℞. Potassii bromidi, ℈ j.
Ammonii bromidi, ℈ ij.
Extracti belladonnæ fluidi, gtt. x.
Aquæ destill., f.℥ ij. M.

A tablespoonful once or twice daily with a nebulizer.

Calcis Carbolas. Dr. E. M. SNOW, of Providence, R. I., has often recommended *carbolate of lime* as a remedy to relieve the spasmodic fits of coughing in this disease, and the evidence is abundant that it is of real value for this purpose. It is used by exposing it to the air in the rooms where the children live and sleep, so that the odor will be plainly perceptible at all times.

Carbolicum Acidum, in a solution of one and a half to two per cent., boiled in a Siegle apparatus and inhaled three times a day into the widely-opened mouth. The violent paroxysms of cough disappear in two or three days. (BURCHARD.)

Chloroform may be inhaled to check the coughing.

Ether is valuable for the same purpose.

Ferri Tinctura Chloridi, gtt. iij–x to water f.℥ j, in the nebulizer, sometimes succeeds remarkably.

Sodii Carbolas, is called by Dr. PERNOT, of Lyons, a specific in the disease. He places the carbolate of soda in a small porcelain crucible held above the flame of a spirit-lamp, which keeps it in an unvarying temperature as long as wished; the carbolate of soda becomes volatilized, so that scarcely any of it remains in the crucible, but the atmosphere of the sick room is impregnated with the vapor of carbolic acid mixed with the elements of coal-tar. The little apparatus above described is not always at hand, but a fire-brick is generally to be had, either in town or country, and this, heated to a sufficiently high temperature to vaporize the carbolate of soda, is generally employed by M. PERNOT.

Sulphurosum Acidum, evolved by sprinkling some flour of sulphur on red-hot coals, has been extensively employed in Europe in whooping-cough.

Terebinthinæ Oleum, in vapor, has been repeatedly praised in this disease. Professor SKODA directs that some be poured on boiling water and the patient inhale the vapor for fifteen minutes at a time. Dr. A. GERTH, of Switzerland, prefers that twenty drops be placed on a handkerchief, held to the mouth and nose, and inhaled in thirty or forty deep inspirations. This is repeated thrice daily.

PLEURITIS.

S. HENRY DESSAU, M. D., NEW YORK CITY.

It is observed by this writer (*Medical Record*, September, 1878,) that pleurisy is frequently overlooked when it occurs in infants. For its detection as well as an aid to treatment, he recommends that whenever a doubt exists in the mind of the physician in regard to the diagnosis of even the simplest case of pleurisy, it should at once be cleared up by an exploratory puncture of the chest-wall with an ordinary hypodermic syringe, as recommended by EUSTACE SMITH, and later by Dr. THOMAS BARLOW and Mr. R. W. PARKER, of London. The operation is perfectly harmless, does not give much pain, and may be repeated several times if necessary. The puncture is best made in the intercostal space, immediately below and on a line with the angle of the scapula. When the effusion is localized or circumscribed, as is sometimes the case, the puncture is advised, by the last-mentioned writers, to be made over the centre of maximum dullness.

Dr. DESSAU has frequently found the withdrawal of a syringeful of fluid, obtained on exploratory puncture, to rapidly hasten the absorption of the effused fluid. This has been explained as due to the relief of pressure stimulating the absorbents of the pleura.

For internal treatment he prefers small doses of infusion of *digitalis* together with syrup of the *iodide of iron*. Moderate counter-irritation over the back is occasionally useful, and as a tonic to hasten convalescence, sulphate of cinchonidia.

EDWARD ELLIS, M. D., LONDON.

This writer is satisfied of the relief which *calomel and opium* often give in the acute pleurisy of childhood, and sees no objection to their employment. The best form is:

1048. ℞. Hydrargyri chloridi mitis, gr. ss–j.
Pulveris ipecac. et opii, gr. j–iij. M.

He can speak well of both *aconite* and *veratrum viride* in the earliest stages, but both of these, especially the latter, must be discontinued as soon as a decline in the pyrexia is established.

For the relief of the pain we may prevent the movement of the side

by fixing it in place by strips of adhesive plaster several inches wide, and long enough to reach from the middle of the spine to the middle of the sternum. They should be applied at the close of an expiration while the lung is emptied of its air. Another means is a lotion of aconite or opium applied immediately over the painful spot, and covered with a poultice.

Later in the disease, when the pyrexia has disappeared, a combination of iodide and citrate of potash with digitalis will be found very useful, *e. g.:*

1049.	℞.	Potassii iodidi,	gr. viij.	
		Potassii nitratis *vel* citratis,	gr. xxxij.	
		Infusi digitalis,	f.℥j.	
		Syrupi,	f.℥ij.	
		Aquam,	ad f.℥iv.	M.

A tablespoonful for a child six years old.

Care should be taken that the infusion of digitalis be freshly made.

For the treatment of the effusion, painting the side with iodine tincture, or a succession of flying blisters, or finally, paracentesis thoracis, are our resources. The last-mentioned operation is growing more into favor, the more extensively it is adopted. It should not be postponed until the patient is *in extremis* and the powers of nature are exhausted.

DR. THOMAS BARLOW AND MR. R. W. PARKER.

In regard to the treatment of pleuritic effusions in children, these writers (*British Medical Journal*, August 25th, 1877,) strongly recommend an exploratory puncture, and the removal of a small quantity of serum. When the history is recent, and the effusion serous and small, they abstain from further operative interference. When three weeks elapse without improvement, they recommend the additional removal of a small quantity, either by the hypodermic syringe or the aspirator. If the effusion be considerable, it is right to perform paracentesis at once; not only to relieve dyspnœa, but to give the lung a chance of re-expansion before adhesions bind it down. Paracentesis should be performed quite irrespectively of pyrexia.

As to drugs, they have seen no benefit whatever from their use in pleuritic effusion. No harm results from the external application of *iodine;* indeed, it has seemed that its use, combined with the internal administration of *iodide of potassium*, has produced benefit. In this,

as in every other wasting disease of childhood, cod-liver oil is invaluable.

If the exploratory puncture reveals the presence of pus, it is recommended to withdraw as much as possible with the hypodermic syringe. It is quite marvelous to observe the rapid improvement which frequently follows the emptying of a very small collection of pus. If the quantity of pus removed be incommensurate with the extent and intensity of the dullness, subsequent punctures must be made. If the pus do not become fœtid, and if at each successive operation the quantity notably diminish, there seems no reason to limit the number of attempts to cure the empyema by repeated aspiration. If the pus should become fœtid, or rapidly re-accumulate in larger quantity, permanent drainage is recommended. In all cases, it is contended that this should be by a double opening. If possible, the first opening should be made in the front of the thorax, and the second below and internal to the angle of the scapula. A long probe, threaded with a piece of drainage-tube, may be passed downward and backward from the first opening, and the second incision made over the point of the probe when it is felt through the integuments. The drainage-tube should then be drawn through and secured by tying the two ends together.

Most of the cases with which they have been concerned have been dressed with oakum. They have seldom had need to use stimulant injections; but in one case they saw marked and rapid improvement from the use of a solution of *quinine*, 5 grains to the ounce. One of the strongest arguments in favor of the method of double openings is, that in a large proportion of cases, it dispenses with the need of washing out the empyema cavity. It is well known that washing out the chest has been followed, in a certain number of cases, by sudden death.

PNEUMONIA, INFANTILE.

THOMAS HILLIER, M. D., LONDON, F. R. C. P., ETC.

Usually the best treatment in the lobular pneumonia of children is to keep the patient in bed in a room of about 60°, well ventilated, without a draught, milk diet during the height of the fever, and when the temperature falls, some good beef tea, and a simple saline mixture, such as:

1050. ℞. Potassii citratis, ℈j.
Syrupi aurantii, f.℥ij.
Aquam, q. s. ad f.℥ij. M.
Two teaspoonfuls as required.

The tendency of the disease in children is to recovery. The great point is to do nothing which will interfere with rapid convalescence. Antimony is seldom desirable or necessary; if given at all, it should be confined to those cases in which the pulse is full and strong, the temperature very high, and the skin and mucous membranes very dry and injected, and it should be given only for a short time, at an early stage of the disease. Counter-irritation is not much to be relied upon. When there is severe pain in the side, a mustard plaster is of service. Blisters are seldom or never to be recommended, certainly not in the acute stage. If resolution comes on very slowly, and there is persistent pleuritic pain, an occasional flying blister will be of service. Calomel is not to be recommended except as an occasional aperient. If the pneumonia is complicated with bronchitis, and the bronchi contain much mucus, a stimulant expectorant is indicated, such as:

1051. ℞. Ammonii carbonatis, gr. viij–xij.
Tincturæ scillæ, ♏xx.
Syrupi, f.℥ij.
Decocti senegæ, q. s. ad f.℥ij. M.
Two teaspoonfuls for a child three years old.

During convalescence, the use of iron, in a mild form, is of service, as:

1052. ℞. Ferri et quiniæ citratis, ℈j.
Syrupi limonis, f.℥ij.
Aquæ, q. s. ad f.℥ij. M.
Two teaspoonfuls thrice daily.

EUSTACE SMITH, M. D., M. R. C. P., ETC., LONDON.

1053. ℞. Liquoris ammonii acetatis, f.℥iv.
Potassii nitratis, ℥j.
Potassii bicarbonatis, ℥iss.
Spiritûs ætheris nitrosi, f.℥iss.
Aquæ carui, q. s. ad f.℥vj. M.

A tablespoonful every third hour for a child six or seven years old, in cases of "pulmonary phthisis." At the same time, the chest should be kept covered with hot linseed-meal poultices, frequently renewed, and the child confined to his nursery or bedroom.

After the cough has become loosened, and the oppression of the chest has subsided, expectorants should be given with an alkali:

1054. ℞. Spiritûs ammoniæ aromatici,
Spiritûs ætheris nitrosi,
Vini ipecacuanhæ, āā f.℥j.
Potassii bicarbonatis, ℥j.
Infusi calumbæ, q. s. ad f.℥vj. M.

A tablespoonful every sixth hour.

Afterward, when the secretion is free, easily brought up, and the fever has disappeared, an astringent is useful, combined with expectorants and a little opium.

1055. ℞. Liquoris ferri pernitratis,
Acidi nitrici diluti, āā f.℥j.
Tincturæ opii camphoratæ, f.℥ij.
Oxymellis scillæ, f.℥j.
Infusi calumbæ, q. s. ad f.℥vj. M.

A tablespoonful thrice daily.

When unabsorbed pneumonic deposits continue, alkalies are extremely useful. The inhalation of sprays of weak solutions of bicarbonate, nitrate, or chlorate of potash, promotes expectoration.

In chronic pneumonic consolidation, irritants are sometimes useful:

1056. ℞. Olei tiglii, f.℥j.
Linimenti saponis, f.℥j. M.

To be rubbed into a limited spot on the chest twice a day till pustulation, and then once a day for a week.

So long as there is much heat of the skin, counter-irritants should not be employed.

PROF. J. LEWIS SMITH, M. D., NEW YORK

In the earlier stages, the following is a useful formula for a child of five years:

1057. ℞. Tincturæ ipecacuanhæ compositæ, gtt. xvj–xxiv.
Tincturæ aconiti radicis, gtt. xvj.
Syrupi tolutani,
Aquam, ad f.℥j. M.
One teaspoonful every three hours.

In the second stage—that is, when there are signs of lung hepatization, such as bronchial respiration and dullness on percussion—aconite and veratrum viride do harm. The following may then be employed:

1058. ℞. Morphiæ sulphatis, gr. j.
Syrupi ipecacuanhæ, f.℥j.
Syrupi tolutani, f.℥iij. M.
Teaspoonful every three hours.

In feeble children, and in secondary pneumonitis, *quinine* is preferable to any other agent, for reducing the temperature and pulse, as it does so without causing depression.

LEONARD WEBER, M. D., NEW YORK.

In simple pneumonia, whether of children or adults, this practitioner states (*American Journal of Obstetrics*, April, 1878,) that he has been accustomed to prescribe:

1059. ℞. Infusi digitalis (℥ss of the leaves), f.℥vj.
Sodii nitratis, ℥j. M.
A teaspoonful every two or three hours, to a child of ten, when the pulse and temperature are high.

When there are signs of the heart giving out, camphor, carbonate of ammonia, and wine, are required. Protraction of resolution in the lung is often caused by a state of acute anæmia, and demands a liberal diet, the discreet use of stimulants, and *iron*.

In severe and extensive broncho or catarrhal pneumonia, a most valuable resource is the *hot mustard bath*.

As soon as pneumonia develops, in cases of capillary bronchitis, the temperature rises to 103°, or more, in a few hours, the pulse beats fast, the face becomes flushed, the child is exceeding restless, wears an anxious expression of countenance, but soon becomes apathetic and somnolent. The course of the disease is rapid, and ends fatally, by cyanosis. He immerses the patient in a hot mustard bath (105°), prepared by diffusing a pound of mustard in a baby tub full of hot water, keeping the child in ten minutes, making thorough friction all over the surface, until the skin becomes pinkish. Then the patient is

put in a warmed bed. If necessary, repeat in four hours. Its *modus* of action is "ubi irritatio, ibi affluxus"—it relieves the congested lung and overburdened heart, by increasing the amount of blood in the peripheral circulation; also by stimulating, reflexly, the vaso-motor centres.

It may be claimed for the use of the bath, that it is easily prepared; that the materials for it can be procured in the household of the poor as well as the rich; that its action is prompt; that there is no danger whatever, in applying it as often as the urgency of the case may require it, and that it is a valuable means for fulfilling the vital indication in severe cases of pneumonia in children.

Q. C. SMITH, M. D., CALIFORNIA.

In all acute pulmonic inflammations in small children, this practitioner states (*Pacific Med. and Sur. Journal*, January, 1878,) that he has for several years used, with very satisfactory results, the *moist girdle*, as directed by VOGEL, of Dorpat; and he has found the measure greatly to promote relief. He manages it thus: A piece of white woolen flannel, two yards long, wide enough to cover the patient's body from the hips close up under the arm-pits, after being wrung out of warm water, so that it will not drip, is closely, but not oppressively so, wrapped around the body, and the terminal end secured by two small pins. This moist wrapper is snugly covered by a dry one, which outer wrapper must be changed as often as it gets wet. The inner wrapper should not, ordinarily, be removed for several days, but is to be kept moist by applying, as often as necessary, warm water, with a small, soft cloth or sponge. In from four to seven days, when the more urgent symptoms have been subdued, the moist girdle may be supplanted by a dry one, which should be applied for a few days longer. Of course the attendant will not neglect to make use of such other remedies and measures as may be deemed necessary in any given case.

RACHITIS (RICKETS.)

EDWARD ELLIS, M. D., LONDON.

Fresh air, abundant and nutritious food, and frequent bathing, are measures always demanded in this disease. Tepid salt-baths followed by friction with a towel over the whole body are most useful. Bleeding, blisters or mercury are never to *be thought of.* Of medicines none is more valuable than *cod-liver oil* combined with an equal portion of lime water, and the compound syrup of the phosphate of iron, f. ʒ j every day. To check the extreme perspirations which often occur, *tannin,* gr. ½–j, thrice daily, or *belladonna,* may be given. For the diarrhœa, a gentle purge, as rhubarb and soda, with some carminative, or a dose of castor oil, will be useful.

P. BRYNSBERG PORTER, M. D., NEW YORK.

In the treatment, aside from the regulation of the diet and the improvement of the hygienic conditions of the child (which are, of course, matters of vital importance,) there are no remedies which, in the opinion of this physician, are to be compared to *cod-liver oil* and the *syrup of the iodide of iron.* They should be intermitted from time to time, and especially if diarrhœa occurs, as it not infrequently does in rachitis. Where they are not well borne (and such cases are according to his experience very rare exceptions,) an emulsion of cod-liver oil with bitter almonds, to which the hypophosphites of lime and soda are added, will often be found an excellent substitute; and it has the advantage of usually not affecting the bowels unfavorably when diarrhœa is present. It is a mistake to be too sparing of the oil, and teaspoonful doses several times a day can be borne by quite young children.

C. CURRIE RITCHIE, M. D., MANCHESTER.

The treatment of rickets requires as its essential condition the restoration of healthy nutrition—hence diet and hygienic measures are of the utmost importance. Regular feeding at stated intervals; abundance of milk with a fourth part of lime water, and the addition of a teaspoonful or two of cream to the half-pint; as the child gets older, a little beef tea with bread, eggs, or light puddings; if potatoes be given, they must be finely mashed with a little meat gravy; after eighteen or

twenty months, meat twice a day, or strong soup in small quantities—these are the chief dietetic indications.

Daily tepid chalybeate or salt-water baths, plenty of warm woolen clothing, warm but well-ventilated rooms, and as much dry open air (the bracing sea air to be preferred) as practicable, are points which will at once suggest themselves.

As to strictly medicinal treatment, it has for some time been the stereotyped phrase in our text-books—"There is no specific remedy for rickets."

Cod-liver oil is one of our most important remedies. Its efficacy is greatly enhanced by a combination with iron. The *phosphate of iron* is the preparation which Dr. R. has found most benefit from; it may be given either as the simple syrup, or in the form of Parrish's compound syrup of the phosphates; in private practice he has found children take it remarkably well with the cod-liver oil.

Of course, before administering cod-liver and iron, we must see that the motions have become healthy and the tongue clean. Dr. R. usually employs Sir. WM. JENNER'S plan for this purpose, viz., to give a single dose of an aperient, such as a teaspoonful of castor oil, or a little gray powder with jalap, even though the bowels should be rather loose—as the stools are frequently most offensive, from the acidity which is always present in these cases, and which is relieved by an occasional dose of rhubarb, with soda or magnesia.

RÉSUMÉ OF REMEDIES.

Aqua Calcis, with milk, or cod-liver oil, is useful to prevent acidity and diarrhœa.

Calcii Lacto-phosphas. M. DUSART finds that in every case in which the diet, though sufficient in quantity, was unsuited to the digestive organs, the addition of lacto-phosphate of lime caused rapid improvement. Very interesting observations upon this subject have been collected in the large hospitals of Paris. (*Gazette Medical de Paris*, March, 1879.)

Calcii Sulpho-carbolas. Dr. ERNEST SANSOM says he has used this "calcium salt (which is one of the most soluble known) in rickets . . . with uniformly good results, in doses of three to five grains, or more." Others who have tried it have been disappointed with it.

Ferrum, either as the phosphate or the iodide, is esteemed by all writers. Dr. AITKEN recommends:

1060.	R.	Vini ferri,	f.℥j–ij.	
		Quiniæ sulphatis,	gr. j.	
		Acidi sulphurici diluti,	♏j–ij.	M.

Oleum Morrhuæ is almost indispensable. Dr. WILLIAM GOODELL recommends it in

small doses (gtt. xx, to an infant;) but Dr. P. B. PORTER believes much larger amounts may be taken with advantage. If any of the oil is passed by stool, the quantity should be diminished.

Dog's Milk has been found by Dr. BERNARD, of Monttrum, France, to be the best of aliments in rickets. (*Gazette Hebdomadaire*, 1877.)

RUBEOLA, (MEASLES.)

PROFESSOR M. CHARTERIS, M. D., GLASGOW.

Measles is an essentially dangerous disease in infancy and in old age, though the danger is not in the disease so much as the sequelæ it leaves behind it.

All exposure to cold must be avoided. The room should be darkened and the patient kept in bed. Milk diet is advisable and a light diaphoretic mixture, as:

1061.	℞.	Vini ipecac.,	f. ℥ iss.	
		Syrupi,	f. ℥ ss.	
		Tinct. camphoræ comp.,	f. ℥ iij.	
		Liquoris ammoniæ citratis,	f. ℥ ss.	
		Aquam,	ad f. ℥ ij.	M.

A teaspoonful every two hours.

When the cough is troublesome, an emetic often gives relief; and for the diarrhœa, cold compresses may be applied to the abdomen.

In "black measles," which is the hemorrhagic form of the disease, and a very fatal complaint, the system must be actively supported by wine or brandy, and the bronchi kept clean by stimulating expectorants.

HIRAM CORSON, M. D., PENNA.

This practitioner has practiced and advocated for many years the cooling treatment of measles. (*Medical and Surgical Reporter*, vol. XXVI.) He allows the child abundance of cool or cold water to drink, opens the windows to allow free ventilation, keeps the temperature of the apartment low, and if the heat of skin be excessive, sponges the body frequently with cool or tepid water. Internally, small doses of neutral salts to move the bowels are all that are generally required. Ice is given *ad libitum*, to allay thirst.

By this method he believes the dangerous complications are prevented and a light eruption on the skin is secured.

DR. DAVIS, NEW YORK.

This writer (*Medical Record*, July, 1871,) considers the following formula one of the best preparations in the first stage of severe cases of measles:

1062. ℞. Syrupi scillæ comp., f.℥iss.
Vini antimonii, f.℥ss.
Tinct. opii camphoratæ, f.℥ij.
Tinct. veratri viridis, f.℥j. M.
One teaspoonful every three hours in water.

If the bowels are costive, they should be moved by a mild laxative.

When symptoms of pneumonia arise, they may be met with the following:

1063. ℞. Liq. ammon. acetatis, f.℥iss.
Syrupi ipecac., f.℥ss.
Tinct. opii camphorat., f.℥j.
Tinct. veratri viridis, f.℥j. M.
Ten drops every two or three hours, for a child a year old.

The chest should be covered with fomentations.

RÉSUMÉ OF REMEDIES.

Ammonii Acetatis Liquor. An excellent diaphoretic. Dr. AITKEN prescribes:

1064. ℞. Liq. ammon. acetatis, f.℥j.
Spiritûs ætheris nitrici dulcis, ♏x–xx.
Misturæ camphoræ, f.℥ss. M.
To a child six years old every four or six hours.

Ammonii Carbonas. Mr. ERASMUS WILSON recommends that as soon as an attack of measles is suspected, the patient should have a mild purge, followed promptly by gr. v of carbonate of ammonia every two or three hours, in water, broth or milk.

Aqua. Cold water is given to any extent by recent practitioners. For the laryngitis which often develops, a sponge may be wrung out in very hot water and applied to the throat. For the rather common and sometimes very perilous epistaxis, water, as hot as it is possible to bear, containing a few grains of sulphate of zinc to the ounce, is used by Dr. JACCOUD, of Paris.

Nitricum Acidum, and the other mineral acids, are useful in the hemorrhagic variety; gtt. xv to water Oij, may be given as a drink.

Potassii Bromidum is called for when there is sleeplessness and nervous excitability.

Potassii Chloras, in large doses, with stimulants, is recommended by Dr. ELLIS when the fever is of low type, with brown tongue and failing powers.

Veratrum Viride is used by Dr. DAVIS to reduce the febrile symptoms in severe cases (F. 1063.)

SCARLET FEVER.

PROPHYLAXIS OF SCARLET FEVER.

Of asserted prophylactics, *belladonna* easily stands at the head of the list. The testimony regarding it is very conflicting. On the one side, Prof. J. LEWIS SMITH believes, from the weight of evidence, that it is entirely inert. Dr. ANDREW WOOD, at Heriot's Hospital, Edinburgh, and Dr. ALLEY, at the Orphans' Asylum, Boston, experimented with it, administering it to one-half the children in their institutions, and, to use the words of the latter, "there was no manifest difference between the two classes as to susceptibility to the contagion;" and THOMAS, in his exhaustive article in ZIEMSSEN'S Cyclopedia, speaks of belladonna as the "much-vaunted pseudo-prophylactic."

On the other hand, RILLIET and BARTHEZ think it worthy a trial. Professors MEIGS and PEPPER think favorably of it. Dr. MCKEE, of South Carolina, thinks he used it with success. Dr. PORCHER, after a review of four hundred volumes of literature on the subject, expresses himself in favor of it; and Professor STILLÉ, after reviewing the whole subject, says: "We feel bound to express the conviction that the virtues of belladonna, as a protection against scarlatina, are so far proven that it becomes the duty of practitioners to invoke its aid whenever the disease breaks out in a locality where there are persons liable to the contagion—particularly in boarding-schools, orphan asylums, and similar institutions, and among the families of the poor; whenever, in a word, it is difficult to place the healthy at a distance from the sick." Dr. CHARLES W. EARLE, of Chicago, from an extended experience in that city, reached the conclusion that although its administration does not prevent children taking the disease, it mitigates the character of the attack.

The *bisulphites and hyposulphites of soda and magnesia* come next in importance. They may be given in solution in syrup and water, gr. $\frac{3}{4}$–j, for each year in the child's age, four times daily. Recent and strong testimony to their efficacy has been added by Dr. G. H. HARMAN. (*Ohio Medical and Surgical Journal*, April, 1878.)

Tonic doses of *tinctura ferri chloridi* during an epidemic have been found by Dr. J. A. LARRABEE, of Kentucky, to exert a protecting influence. He believes that the action of the iron directly upon the

blood will prevent the scarlatinal poison from involving the system. (*Trans. of the Kentucky State Medical Society*, 1865.)

The *sulpho-carbolate of soda* has been urged on theoretical grounds by Drs. SANSOM and BRACKENRIDGE, to persons exposed to the poison of scarlet fever, and the latter relates several striking instances of what he believes to be its protective powers. He gives the salt in doses of gr. v–xxx, three or four times daily. Its use in this country has not answered expectations, and it has rather been found to depress the vital powers and tend to cause the patient to succumb.

The value of *inunction* as a prophylactic has been prominently set forth by Prof. JAMES B. WALKER, M. D., of Philadelphia. (*Med. and Surg. Reporter*, Aug. 23d, 1879.) He believes that patients anointed several times daily with fat bacon, warm sweet oil, or similar fatty preparation, become, in a great degree, unable to propagate the infection, as the epidermic scales, which are generally conceded to spread the poison, are, by this means, prevented from escaping into the surrounding atmosphere.

For prophylactic purposes, Dr. JOHN C. PETERS, of New York, relies upon *sweet spirits of nitre*. (*Medical Gazette*, July, 1869.) It lessens fever and prevents, by its diuretic action, the occurrence of disease of the kidneys. It may also eliminate the poison so rapidly and completely that the system cannot become affected, nor the disease reach its full development.

Complete and continuous *isolation* is probably the only sure safeguard against infection.

PROF. J. LEWIS SMITH, M. D., NEW YORK.

In moderately severe and grave cases, the external treatment should be by cold applications to the head and sponging to the face and arms. This may be frequently repeated. Immersion in cold water or pouring it upon the person is questionable, as such a shock may increase the liability to chronic convulsions.

The itching of the skin should be relieved by *inunction*. The best substitute for this purpose is sweet oil or glycerine, to each ounce of which 6 or 8 drops of carbolic acid are added. [Other authors commend, as still better, cocoa butter, *theobroma cacao*, which has a marked cooling effect.] The inunction should be made with linen or muslin, and the substance should be applied frequently to those parts of the surface which itch.

As an *internal remedy*, carbonate of ammonia is one of the best:

1065. ℞. Ammonii carbonatis,
Ferri et ammonii citratis, āā ℥ ss.
Syrupi simplicis, f. ℥ iv. M.
A tablespoonful every three hours, to a child three years old.

In the malignant forms of the disease, with the temperature at 105°, drowsiness, delirium and restlessness, the sulphate of quinine, in full doses, is more useful than any other remedy; gr. iij–v, thrice daily, to a child of five years. If the stomach will not retain it, give doses of gr. xij by enema. A hot mustard-bath or foot-bath develops the rash, and allays nervous excitement; it is especially indicated if the convulsions occur attended by disappearance of the eruption.

For the *pharyngitis*, a slice of salt pork, cut thin, and stitched to a single thickness of muslin, should be applied to the throat. It should pass from ear to ear. This application should be continued throughout the fever, being left off for a day or two, if too much soreness is induced. It is a gentle and effectual counter-irritant. Local applications to the fauces are still more important:

1066. ℞. Acidi carbolici, gtt. xv–xxx.
Potassii chloratis, ℈ iij.
Glycerinæ,
Aquæ, āā ℥ iij. M.
For a gargle.

1067. ℞. Acidi carbolici, gtt. v.
Liquoris ferri subsulphatis, f. ℥ ij.
Glycerinæ, f. ℥ j. M.
To be applied with a camel's-hair pencil, three or four times daily.

Yeast is useful in many of these cases, given in doses of f. ℥ ss–f. ℥ j, several times a day. No drink should be allowed for several minutes after swallowing it.

HIRAM CORSON, M. D., NORRISTOWN, PA.

This writer has, for several years, been a prominent champion of the *ice* and *cold-water* treatment of scarlatina, advocated, early in this century, by Dr. JAMES CURRIE, of London, and later by Professor TROUSSEAU, of Paris.

He applies the ice in moderate quantities, tied up in two small pieces of bladder, and one placed on each side of the neck, over the parotid gland, and retained by a strip of muslin brought under the jaw and tied on the top of the head, not around the neck. If no

bladder nor gutta-percha bag can be procured, fold a strip of old muslin twice, so that, when thus folded, it shall be three inches wide, and long enough to extend from the bottom of one ear, under the jaw, to the bottom of the other. To each end of this, sew a strip of muslin of the same width, and a foot or more in length, by which, when applied, it may be tied to the top of the head. Have a line of stitches run crosswise through the middle of the fold; there will then be a pocket for ice on each side of the neck. For the first application, wet this with cold water alone, and tie it on; after wetting it a few times, slip into the pouch, on each side of the neck, three or four large lumps of ice, as large as a shellbark, and keep them well stocked with ice. Give the ice freely inside, apply it over the nose, and sponge the body and limbs freely with cool or cold water.

STILES KENNEDY, M. D., MICHIGAN.

According to this writer, two medicines only have gained much reputation for mitigating or subduing the symptoms of fever in this disease, or the disease itself, and the profession is about equally divided as to their respective merits. One is the *chlorine mixture*, which, for ready use, may be prepared about as follows:

1068. ℞. Potasii chloratis, ʒj.
Acidi muriatici,
Aquæ, āā f.ℨj. M.

From two to eight drops of this to a tablespoonful of water, may be given every two hours. For children over eight years of age, a solution made of two drachms of the mixture and a pint of water, is strong enough to give, in tablespoonful doses. It is generally prepared sweetened with simple syrup, but, at best, it is an unpleasant dose to many children, and often makes them complain of burning in their throats.

The other medicine alluded to is the *liquor ammonii acetatis* of the Pharmacopœia. Probably no anti-febrile mixture has stood the test of the experience of the profession for so long a time, with so much satisfaction, as this, not in scarlet fever, particularly, but in all febrile diseases; and our author does not remember ever to have heard it complained of when the vital powers begin to flag. An excess of carbonate of ammonia may be added, in the quantity of five or ten grains to the ounce:

1069. ℞. Ammonii carbonatis, ℈ij–iv.
Liquoris ammoniæ acetatis, f.℥ iijss.
Syrupi simplicis, f.℥ ss. M.

Give from half to a whole tablespoonful, in a little water, every one or two hours, according to the age of the patient and the urgency of the symptoms.

FREDERICK T. ROBERTS, M. D.

In reference to the treatment of special symptoms, this author gives the following recommendations:

The *throat symptoms* are best relieved by sucking ice or inhaling steam. A few leeches about the angle of the jaw are occasionally advisable. For ulceration and gangrene, antiseptic gargles are demanded; or, if the patient cannot gargle, inhalations or sprays. The antiseptic may be either carbolic acid, creasote, chlorate of potash, permanganate of potash or sulphurous acid.

The nostrils, if blocked up, must be washed out occasionally with a weak disinfectant solution. Ulcerations may be touched with a solution of nitrate of silver. A weak solution of chlorate of potash may be allowed freely as a drink. But in a large number of cases, the only hope of recovery lies in the *free support* of the patient by food and stimulants. As often as the child cannot or will not swallow, and the necessary materials cannot be introduced into the stomach, they must be administered by enemata. At the same time, tincture of iron, in full doses, ♏xx–xl, every three or four hours, with quinine or mineral acids, is called for.

THE ALBUMINURIA AND DROPSY.

Dr. W. H. Thompson, of New York, considers that with reference to the nephritic complication, no case is to be despaired of in its acute stage, for recoveries from apparently the most desperate circumstances (as in cases in which urine has continued suppressed for seven and nine days), have taken place. The measures to be adopted are oiling the skin, the hot-water pack, dry cupping, counter-irritation by means of spoons heated in hot water and applied momentarily over the kidneys, the free use of the infusion of digitalis, etc., after diaphoresis, large injections of warm water. The injections are preferable to purgatives, because the action of the warm water favors the discharge of water from the bladder. A quart may be perhaps used as many as six times a day, and passing the urine may come only with the last injection. The infusion of digitalis should be given to children in very nearly as large doses as are required for adults.

When purgatives are used, the usual one is *elaterium:*

1070. ℞. Pulveris elaterii, gr. $\frac{1}{8}$.
Pulv. scammon. comp., gr. v.
Potassii bitartratis, ʒss. M.
For a child of ten. (E. Ellis.)

Elaterium is objectionable on account of its tendency to excite vomiting, unless carefully combined.

Digitalis is the most approved diuretic. It may be given in the fresh infusion, or as follows:

1071. ℞. Tinct. digitalis, ♏iij.
Tinct. hyoscyam., ♏v.
Syr. aurantii, ʒss.
Aquæ camphoræ, f.ʒ iv. M.
This amount for a five-year-old child, every six hours.

1072. ℞. Infusi digitalis, ʒss.
Potassii acetatis, gr. v.
Spiritûs juniper. comp., ♏x.
Decocti scoparii, ad f.ʒ ss. M.
For a child five years old every six hours. (Dr. Edward Ellis.) ,

The use of *iron* in as large doses as the system can bear without producing headache or nausea is recommended by Prof. M. Charteris:

1073. ℞. Tincturæ ferri chloridi, f.ʒ ij.
Infusi digitalis, f.ʒ vij. M.
A dessertspoonful thrice daily.

The diet should be generous with plenty of milk and a uniform temperature insisted upon.

When convulsions supervene, Dr. S. Wilks, of Guy's Hospital, and other leading English authorities, do not hesitate to practice *venesection* to f. ʒ iij–vj. In many instances, where every other means failed, patients have recovered by the judicious employment of the lancet.

RÉSUMÉ OF REMEDIES.

Aconitum in small and frequent doses serves to diminish the fever.

Ammonii Spiritus Aromaticus has recently been recommended in the following form by Dr. Sweeting:

1074. ℞. Spiritûs ammoniæ aromatici, f.ʒ iij.
Sodii et potassii tartratis, ʒj.
Tinct. lavandulæ comp., f.ʒ j.
Aquam, ad f.ʒ iss. M.
A teaspoonful every third hour for a child five years old. With this he orders as a diet undiluted sweetened milk, and uses no external treatment whatever.

Ammonii Carbonas is highly esteemed by many authorities. Mr. G. J. S. CAMDEN (*Medical Times and Gazette*, February 1st, 1873,) gives with it at the very onset of the disease, in distilled or cold boiled rain-water filtered. He never gives emetics or aperients, nor bleeds, nor does anything to lower the vital powers. Mr. ERASMUS WILSON (*Diseases of the Skin*) confesses to a strong leaning in favor of ammonia treatment, and, instead of salines, begins, from the first, with a solution of the carbonate of ammonia; 2 or 3 grains for a child under seven years of age, and 4 or 5 grains for a child above this age, dissolved in from 2 to 4 drachms of water, and administered every one, two, three, or four hours, according to the degree of severity of the fever. (See, also, F. 1065.)

Argenti Nitras. Dr. EDWARD COPEMAN remarks, in the *St. George's Hospital Reports*, 1870, that for the relief of those severe cases in which there is a profuse ichorous discharge from the throat and nostils, with disposition to sloughing ulcers in the pharynx, he has seen no local remedy so successful as a free application of a solution of nitrate of silver (from 4 to 8 grains to an ounce), by means of a brush or syringe. Dr. NIEMEYER also recommends the nitrate. He says that, in anginose cases, as soon as the sloughs have been detached, we may touch the ulcers in the throat, daily, with a solution of nitrate of silver (℥j to ℥ij water), applied by means of a probang; and for the coryza, we may inject a weak solution of nitrate of silver (gr. v–x to ℥ij water) into the nostrils. Croup complicating angina maligna indicates the administration of an emetic and the application of a solution of nitrate of silver to the glottis.

Baptisia Tinctoria. The electic physicians assert that a gargle prepared from the wild indigo weed, acts specifically in the sore throat of scarlet fever. (SCUDDER.)

Brominium. Dr. W. H. THOMPSON (New York) has met with far fewer throat complications since he has used this agent. He employs it as follows:

1075. ℞. Potassii bromidi, q. s. ad saturandum.
Aquæ, f.℥ij.

To this, add very slowly, and with frequent shaking:

Brominii, f.℥j.
Aquam, ad f.℥iv.

Of this solution, 1 drachm is added to 1 ounce of water, and a teaspoonful is given in a tablespoonful of sweetened water, as required, the solution being kept in a dark place. As a local application, equal parts of the solution and of glycerine are used, or, in bad cases, the solution alone. Occasional purges of calomel and jalap may be given, until the action of which the antiseptic may be suspended.

Carbolicum Acidum, gr. j–ij to aquæ f.℥j, has been used as a gargle for the sore throat. (See F. 1066, 1067.)

Chlorini Aqua is very highly praised by nearly all writers. One formula for the chlorine mixture is given above. (F. 1068.) Another is:

1076. ℞. Potassii chloratis, gr. lxxx.
Acidi muriatici diluti, f. ʒ ij.
Aquæ, Oij. M.
This amount to be taken in small doses, in the twenty-four hours.

Mr. Erasmus Wilson's formula is:

1077. ℞. Potassii chloratis, ʒ j.
Acidi nitrici diluti, f. ʒ j.
Aquæ, f. ʒ viij. M.
For a gargle.

Copaiba. Mr. A. Rowand (*Medical Times and Gazette*, February 17th, 1871,) gives balsam of copaiba in 4 or 5-drop doses, mixed in ʒ ij syrup, and ʒ ij mucilage of gum arabic, three or four times a day, with most satisfactory results. Under its use, the tongue and sore throat get rapidly clean and well, and the usual sequelæ do not appear.

Digitalis. Prof. Bartholow declares that, in a considerable experience in the treatment of scarlatina, he has found digitalis uniformly successful, and, taking in a group the ordinary cases of scarlatina simplex and scarlatina anginosa, it is the most efficient remedy we possess. The particular effect of digitalis, in preventing nephritis and other glandular inflammations, has been mentioned in the *Lancet*, January 23d, 1869, by Dr. Sydney Fennel. He has used it largely in scarlatina, and says that, when administered early in the fever, the inflammatory action in the glands of the neck subsides gradually. The fever leaves the patient in the usual time, desquamation is very slight, and the chances of chronic nephritis are reduced to a minimum. He also confidently asserts that the infectious character of the disease is lessened by the remedy, if not destroyed.

Ferrum. Dr. R. Aldridge (*British Medical Journal*, August, 1871,) speaks favorably of the use of iron in scarlatina. He has found if it be given as soon as the disease makes its appearance, that not only does it shorten and lessen the severity of the attack, but it also fortifies the patient against the after consequences—dropsy, etc. The form which he has mostly used has been the liquor of pernitrate of iron, in syrup of glycerine, in doses of 10 minims every three hours.

Hydrogen Peroxide. This substance has been warmly urged in scarlatina, by Dr. John Day, of Australia. His formula is:

1078. ℞. Hydrogen peroxide (ozonic ether), ʒ iv.
Pure lard, ʒ iv.
Benzoic acid, ʒ j.
Otto of roses, gtt. iv. M.
To be carefully mixed without the aid of heat.

With this the body of each patient is rubbed, over the whole surface, three times a day. He also prescribes, throughout the whole course of the disease, a mixture composed of 2 or 3 drachms of ozonic ether in ½ pint of water; the dose ranging from a teaspoonful for a child twelve months old, to a tablespoonful for an adult, to be taken every second hour. This is used for the double purpose of benefiting the throat symptoms and disinfecting the breath.

Potassii Chloras, is perhaps the most widely used of all drugs in scarlet fever. (F. 1068.) Large doses may be given to the youngest infants, especially in the adynamic type of the fever. It has been amply shown by Dr. DRYSDALE, of Philadelphia, that this salt can and ought to be given far more freely than is usually done. (See p. 507.)

Quiniæ Sulphas. In malignant cases some have advocated large doses of quinine to obtain decided antipyretic effects. The result of this measure is questionable.

Salicylicum Acidum has been experimented with by Dr. DAVID J. BRACKENRIDGE, of Edinburgh, (*Medical Times and Gazette*, December, 1876,) but his results were not satisfactory. Dr. POWNALL, on the other hand, (*Brit. Med. Jour.*, Dec. 21st, 1878,) claims that it is one of the most reliable remedies. He uses:

1079. ℞. Acidi salicylici, ʒj–ij.
Syrupi simplicis, ʒiv.
Mucilag. tragacanth., ʒj.
Tinct. aurantii, ʒiv.
Aquam, ad ʒvj. M.
A tablespoonful every second hour.

Sodii Sulpho Carbolas. This has been administered by Dr. BRACKENRIDGE in doses of gr. v–xxx three or four times a day, and he asserts that it has proved very beneficial. American experience is against it. Dr. C. S. EARLE, of Chicago, says that not only has it failed to mitigate a single symptom, after the development of the disease, or to diminish the susceptibility of those liable to contract it, but it has seemed to diminish the *vis medicatrix naturæ*, to lessen absolutely the chances of recovery, by its impoverishment of the system. (*Trans. of the Illinois State Medical Society*, 1878.)

Sulphur. The use of this old remedy has been very highly lauded of late. Mr. HENRY PIGEON writes to the *Lancet*, Nov. 25th, 1876, in these words: "The marvelous success which has attended my treatment of scarlet fever by sulphur, induces me to let my medical brethren know of my plan, so that they may be able to apply the same remedy without delay. All the cases in which I used it were very well marked, and the epidermis on the arms in each case came away like the skin of a snake. The following was the exact treatment followed in each case: Thoroughly anoint the patient twice daily with sulphur ointment; give 5 to 10 grains of sulphur in a little jam three times a day. Sufficient sulphur was burned twice daily (on coals on a shovel) to fill the room with the fumes, and of course was thoroughly inhaled by the patient. Under this mode of treatment, each case improved immediately, and none were over eight days in making a complete recovery, and I firmly believe in each it was prevented from spreading by the treatment adopted." Dr. F. L. SIM, of Tennessee, (*Medical and Surgical Reporter*, Dec., 1877,) has had remarkable success by thoroughly fumigating the child under a blanket, with the fumes of burning sulphur.

Veratrum Viride has been employed to reduce the pyrexia.

EXTERNAL MEASURES.

Baths, of all temperatures, are used. Dr. HIRAM CORSON is earnest in favor of the cold bath. (P. 547.) Dr. EDDISON, and others, prefer baths commencing at 90°–100° cooled down slowly or rapidly to 70°. Danger from "driving

in the rash" is asserted to be imaginary. Dr. G. JOHNSON prefers the warm bath only. Tepid and cold sponging will often be found sufficient. In adynamic cases, with low pulse, pallid skin, and cerebral symptoms threatening, a hot mustard-bath will often have the best effect; or the child may be stripped and wrapped in a sheet well wrung out with mustard water, and then packed in between two blankets. When the temperature reaches 104°, the cold wet pack may be used, and is never followed by any harm. Wring from a wet sheet the water at the ordinary temperature, wrap the child in it, and over that lay one wrung out of iced water. The prompt manner in which the symptoms improve shows the wet pack to be one of the great therapeutic resources in this class of cases.

Inunction with olive oil, fresh butter, bacon rind, cocoa butter, warm benzoated lard, and such preparations, repeated three or four times a day, should be employed. The value of this is that it is the most effectual means of relieving the itching of the skin, and the excessive restlessness which is due to the irritation of the peripheral nerves, caused by the heat of the skin. This is relieved more rapidly by oiling than by sponging with tepid water. Oiling, too, is truly antipyretic, reducing the temperature. Another reason for its use is found in the close sympathy found existing between the skin and the kidneys. It is also recommended for its prophylactic properties. (See p. 546.) Dr. L. C. JOHNSON (*Cinn. Lancet and Clinic*, Sept., 1879,) prefers the following ointment:

1080. ℞. Glycerinæ, ℥ ij.
Acidi carbolici, gr. viij.
Olei rosæ, gtt. ij. M.

Anoint with the palm of the hand after the patient has been bathed and dried.

STOMATITIS, INFANTILE.

ALFRED VOGEL, M. D., PROFESSOR IN THE UNIVERSITY OF DORPAT, RUSSIA.

1081. ℞. Sodii biboratis, ℈j.
Aquæ, f.℥j. M.
To be used to cleanse the mouth, every hour, in cases of *stomatitis* in infants.

This feebly-alkaline solution combats the tendency of the profusely secreted saliva rapidly to become sour. The chest is to be protected against getting wet by a piece of oil-silk, which is secured under the jacket, and the infant is only to be allowed to drink cow's milk, with water. The painful ulcers may be relieved for many hours, and even permanently, by cauterizing them with the solid nitrate of silver.

In idiopathic stomatitis, spontaneous recovery takes place in eight, or, at the longest, fourteen days. Symptomatic stomatitis in febrile disease does not usually call for any particular interference.

1082. ℞. Potassii chloratis, ℈j.
Syrupi, f.℥ij.
Aquæ, q. s. ad f.℥iv.

JOHN SYER BRISTOWE, M. D.

The form of stomatitis known as ulcerative, presents itself as excoriated patches on the surface of the gums, cheeks and tongue. There are usually febrile symptoms attending it, but the course of the disease is always with a tendency to recovery, its duration, when not checked, being about ten days. The local treatment required may be carried out with mel boracis, or chlorate of potash in solution. Internally, a little chlorate of potash, or other febrifuge medicine, may be administered.

Gangrenous ulceration of the mouth, or *noma*, is mainly limited to children between the ages of one and five years. It may, at times, become very extensive and destroy life. In the treatment, it is, in the first place, of paramount importance that the patient's strength should be maintained by the regulated administration of food, alcohol and tonic medicines. *Opium* may be of great service. Locally, it is necessary to keep the parts cleansed; to wash them frequently with antiseptic fluids, and to treat the gangrenous tracts themselves freely with

escharotics, of which, probably, the most valuable are pure hydrochloric or nitric acid, and the actual cautery.

RÉSUMÉ OF REMEDIES.

Acidum Hydrochloricum. This is a useful application, applied in a dilute form, combined with honey. It may be used locally, and also swallowed in moderate doses, with benefit. *Nitric acid* is employed in the same manner and with equal advantage.

Alumen may be used either in solution as a wash, powdered and mixed with honey, or by being applied as a powder to the ulcerated spots, several times a day.

Aqua Calcis. In infantile aphthæ, with greenish discharges from the bowels, Dr. DEWEES, of Philadelphia, found great advantage from the use of this alkali, in small quantities, with milk

Gallicum Acidum, on account of its astringent qualities, is of considerable service in many cases.

Mel Boracis is an excellent preparation, and usually readily given to infants.

Mel Rosæ has slightly stimulant and astringent qualities, and may be used in light cases, either alone, as an addition to a mouth-wash, or undiluted, or combined with borax or chlorate of potash.

Potassii Chloras is probably the most generally valuable of all applications in infantile stomatitis. It may be used in a simple solution, powdered and rubbed up with honey, or in an atomized solution. Most writers speak of it as quite sufficient to check the disease in nearly every case.

Sodii Boras is, next to the above, the most popular remedy for sore mouth, and is very efficient. A favorite form is the honey of borax. The glycerole of borax, ℥j of borax to ♆j of glycerine, is a convenient substitute.

Sodii Chloras has been found quite as useful as the potash chlorate, and is somewhat more soluble.

Thymi Oleum, or *Thymol*, has proved advantageous in some severe cases. A solution of 1:3000 was used as a lotion, with which the parts were syringed.

VIII. TOXIC DISEASES.

Alcoholism (Inebriety; Delirium Tremens)—Arsenicism (Chronic Arsenical Poisoning)—Hydrargism (Chronic Mercurial Poisoning)—Opiism (Opium Eating; the Opium Habit)—Plumbism (Chronic Lead Poisoning.)

ALCOHOLISM (INTOXICATION; DELIRIUM TREMENS; CHRONIC ALCOHOLISM.)

The therapeutics of alcoholism embraces the treatment of this form of poisoning as it is presented in three distinct forms: 1. *Drunkenness*, including the gastritis, headache, etc., it leaves behind it. 2. *Acute Alcoholism*, known as delirium tremens, mania à potu, etc., and, 3. *Chronic Alcoholism*, including the numerous and grave structural changes brought about by the prolonged consumption of alcoholic fluids.

I. DRUNKENNESS.

In cases of drunkenness or coma from alcoholic intoxication, the first indication is to empty the stomach. This may sometimes be accomplished by tickling the fauces with a feather; by the free administration of warm water, or mustard and water, if the patient can swallow; or, in some instances, by the hypodermic injection of apomorphia, or the internal use of brown emetine, gr. ij–iv, which acts very promptly. These failing, the stomach pump is the next resort.

Cold affusion, especially cold water, poured from a height of five or six feet upon the head, is a powerful revulsive, and may often advantageously be employed. Galvanism or electricity may also be resorted to. It is generally important to promote warmth, especially when the face is pale and the extremities cold. Sinapisms to the feet, bottles of hot water around the limbs, and mustard to the epigastric and cardiac regions, are then required. It is a great mistake to take a man who is partially intoxicated into the cold air under the impression that it will restore him. The change and sudden checking of the cutaneous transpiration are very apt to render him completely drunk.

When the stomach can retain fluids, the patient may take very strong,

hot coffee, without milk or sugar, in tablespoonful doses every five minutes. Or one of the following mixtures:

1083. ℞. Ammonii acetatis, ℥ iij.
Syrupi aurantii florum, f.℥ iss. M.
To be taken in tablespoonful doses, in a small cup of tea, at quarter of an hour intervals.

1084. ℞. Ammonii acetatis, ℥ ijss.
Sodii chloridi, ℥j.
Syrupi, f.℥ iss. M.
To be given in a small cup of strong coffee in two doses at quarter of an hour interval.

The following is recommended by Dr. JAMIESON, of the Mercer Hospital, Dublin, as very efficacious in dispelling drunkenness:

1085. ℞. Sesqui-carbonate of ammonia, ℥j.
Table vinegar, f.℥j. M.
This amount for one dose; to be repeated in half an hour if necessary.

This is a cheap extemporaneous plan of preparing spirits of mindererus.

The nausea, vomiting and irritable stomach consequent upon alcoholic excess may be treated with iced milk diluted one-half, with Vichy, Apollinaris, or Saratoga water, or with lime water, a tablespoonful every five or ten minutes. A bladder of ice to the epigastrium is also efficient.

In the persistent retching and vomiting that sometimes follow a debauch, *liquor potassæ arsenitis*, in one-drop doses every hour or half hour, either alone or combined with a few grains of capsicum, is extremely efficacious.

For the nervous prostration, sense of anxiety and of impending misfortune, *nux vomica*, gtt. v–xv of the fluid extract, has been highly commended. This amount may be taken three or four times a day.

Dr. ALFRED L. LOOMIS, recommends the following in cases of "rum stomach," with gaseous distention of the stomach and bowels:

1086. ℞. Tr. nucis vomicæ, gr. v–xv.
Tr. gentianæ comp.,
Tr. columbæ comp., āā ℥j. M.
Take before meals.

The bowels are kept soluble by an aloetic and mercurial purge.

"Bitters" of different kinds are very popular as restoratives. *Quas-*

sia is supposed to be peculiarly efficacious, but almost all the vegetable bitters are employed. The following is a palatable combination:

1087. ℞. Liquoris ammoniæ acetatis,
Tincturæ aurantii amari,
Syrupi aurantii amari, āā gtt. xx.
Aquæ, f.℥j. M.
For one dose; to be repeated every half hour or hour.

For the headache and wakefulness which follow a debauch, Dr. A. McLane Hamilton prescribes *monobromide of camphor*, finding that it possesses peculiar hypnotic power.

1088. ℞. Camphoræ monobrom., ℥j.
Confect. rosæ, q. s. M.
Make twelve pills. One or two as required.

Dr. A. A. Smith, of New York, states that the first indication is to remove the alcohol from the intestinal canal. For this give of rhubarb and magnesia calcined, each a half drachm, and then give the following:

1089. ℞. Spiritûs ammoniæ aromat., ℥ij.
Tincturæ camph., ℥iss.
Tincturæ hyoscyami, ℥ijss.
Spiritûs lavandulæ comp., q. s. ad ℥ij. M.
℥j every hour until the headache is relieved, and then give capsicum, gr. ij, and quinine, gr. lij, before each meal, for several days. If there be sleeplessness, give:

1090. ℞. Sodii bromidi, ℥ss.
Chloral hydrat., ℥ijss.
Syrupi aurantii cort., ℥ss.
Aquæ, ℥iijss. M.
℥ss at night; repeat in two hours if necessary to produce sleep. (*N. Y. Medical Record.*)

The following "quieting mixture" has been long used with the greatest success by Dr. F. Peyre Porcher, of Charleston, S. C., and is confidently recommended:

1091. ℞. Chloral hydratis, ℥iss.
Potassii bromidi, ℥ij.
Spts. ætheris compos., f.℥ij.
Tincturæ valerianæ, f.℥iij.
Aquæ, f.℥vj. M.
A tablespoonful every two, three or four hours in the nervousness following a debauch, commencing delirium tremens, excessive nervous excitement, etc.

Dr. J. H. Nowlin, of Arkansas, has found the following of great value (*Louisville Medical News*, July, 1878:)

1092. ℞. Chloral hydratis,
Potassii bromidi, āā ℥ iss.
Tinc. capsici, ℥ ij.
Aquam, q. s. ad ℥ viij. M.

℥j or ℥ij, largely diluted with water or milk, every hour or two till sleep is produced in cases of delirium tremens, or till the nerves are quieted in other cases; and afterward repeat as needed.

II. ACUTE ALCOHOLISM OR DELIRIUM TREMENS.

PROF. WILLIAM AITKEN, M. D., EDINBURGH.

The two indications for treatment are: 1. The elimination of the poison; 2. The sustenance of the patient during this period. Our author opposes bleeding and the administration of opiates or stimulants in large doses. The strength is to be supported by *nutritious diets*, such as yolk of eggs, soups, beef tea, and egg-flip, in small quantities and often.

The danger in the first instance is from exhaustion, which is to be met by careful nursing. *Opium* may only be administered in protracted cases, and then never in doses larger than would be considered safe for a healthy person of the age and sex of the patient.

G. H. BARLOW, M. D., LONDON.

1093. ℞. Camphoræ, gr. ij.
Ammonii carbonatis, gr. iv.
Tincturæ hyoscyami,
Tincturæ lupulinæ,
Syrupi aurantii,
Mucilaginis acaciæ, āā f.℥j.
Aquæ camphoræ, f.℥j. M.

For one dose, to be taken at bedtime, after the action of an aperient.

J. WARING CURRAN, M. D., DUBLIN.

1094. ℞. Zinci oxidi, ℈j–ij.
Confectionis rosæ, q. s. M.

For 10 pills; one thrice daily.

When morphia or cannabis has done its duty in this disease, the after treatment by *oxide of zinc* is something to be observed rather than described; the constant dread, restlessness, and disturbed sleep, are quickly overcome by the bracing agency of the drug. (*London Lancet*, October 24th, 1868.) In administering the oxide of zinc, care must be taken not to give it upon an empty stomach, as it produces nausea and a dislike for the medicine.

PROF. R. J. GRAVES, M. D., DUBLIN.

1095. ℞. Antimonii et potasssii tartratis, gr. iv.
Tincturæ opii, f.℥j.
Camphoræ, gr. xv.
Alcoholis, f.℥ss.
Aquæ destillatæ, f.℥viij. M.

Powder the camphor by the aid of the alcohol, add the water, pass through a piece of fine linen and then add the tartar emetic and the laudanum. Give a tablespoonful every two hours.

G. M. JONES, M. D., JERSEY, ENGLAND.

1096. ℞. Tincturæ digitalis, f.℥iss.

A tablespoontul (f.℥ss) to be given at a dose, mixed with a little water. If the first be not sufficient, which, however, it generally proves to be, a second, equally large, is to be administered in about four hours. If a third dose be, in rare instances, required, it should not exceed a dessertspoonful, (f.℥ij.)

Under the influence of this medication, it is stated, the pulse becomes fuller, stronger and more regular, the skin grows warm and the cold, clammy perspiration ceases. These effects are followed by a sleep of several hours' duration. No action on the kidneys, nor any alarming symptoms are observed.

This treatment answers best when the symptoms have assumed a resemblance to those of acute mania, and when there has not been much exhaustion.

DR. LYONS, HARDWICKE HOSPITAL, DUBLIN.

1097. ℞. Pulveris capsici, gr. xx–xxx.
Mellis rosæ, q. s. M.

Make a bolus. For one dose.

This usually suffices to produce quietude and sleep. In exceptional instances, however, a second and even a third dose is required before full tranquillity is secured. The drug is well borne, and quiets the stomach in cases in which irritability and vomiting are present. Our author sums up (*British Medical Journal*, November 7th, 1869,) his experience as follows: 1st. Capsicum is a valuable and reliable drug when opium fails, or is for any cause contra-indicated. 2. It is a safe drug for general employment in delirium tremens, and as such may be confidently recommended. 3d. It is not open to the objection which attaches to the continued use of opium, which, when it fails to tranquillize and produce sleep, adds to the state of excitement, and when pursued beyond a certain limit may induce opium coma. 4th. Capsi-

cum has been employed in the delirium of fever when opium has failed to cause sleep, and with marked success in certain cases.

DR. GEORGE W. BALFOUR, EDINBURGH.

This writer (*Lancet*, February 1st, 1879,) speaks in the most decided terms of the superior efficacy of *chloral hydrate*, in delirium tremens. He recommended it in all cases, from the lightest to the most severe. After a full trial of it for nine years, he pronounces it most satisfactory. He states, however, that there are very few cases, indeed, which yield to a less dose than 50 grains, and a considerable number which require a great deal more; those cases requiring the largest doses being those ushered in by the *status epilepticus*, which chloral arrests as rapidly and safely as it does delirium tremens itself. But, even in these cases, he has not found it necessary to give more than 120 grains of Liebreich's chloral, in divided doses; and this dose, though large, is not a dangerous one. From the irritated condition of the mucous lining of the stomach of a drunkard, it is probable that the absorption of ingested fluids is not so rapid as usual; it is but fair, therefore, for that reason, also, to allow a moderate interval between the doses, so as to avoid, as far as possible, any risk of giving more than enough. At the same time, we must shun the opposite extreme of giving doses in themselves too small to have any decided effect, and which have any possible cumulative effect destroyed by too long an interval being permitted to elapse between the giving of each dose. Acting upon these principles, he is in the habit of treating cases of delirium tremens by giving gr. xl chloral hydrate every hour, for three times, if necessary. Sometimes, but rarely, the first dose is enough; most commonly, two doses are required, and it is only in the very rarest instances that the third dose is necessary. If the attack be ushered in by the *status epilepticus*, he shortens the intervals between the doses to half an hour, as, in these cases, time is of the utmost importance, and a large dose is sure to be required. Should the heart be feeble, he gives each dose of chloral in half an ounce or an ounce of the infusion of digitalis. Under this treatment, the results are flattering. Unquestionably, fatal cases must occasionally occur under this, as well as under other modes of treatment, but the number of them are much decreased, because, from the rapidity with which a cure is brought about, many dangerous risks are averted. Thus we avoid all the risks arising from a long continuance of maniacal excitement, or from a suicidal state of

mind, all risk from the exhaustion following persistent sleeplessness, or defective nutrition, the result of long-continued insufficiency of food, &c.

PROF. JOHN CURNOW, M. D., LONDON.

In the opinion of this teacher, (*Lancet*, February, 1878,) delirium tremens must be differently treated in the young and in the old. In first attacks in young subjects, complete abstention from alcohol, light and easily-assimilated food (milk diet), moderate purgation, and, occasionally, tartrated antimony, in doses of from $^1/_{16}$ to $^1/_8$ of a grain, very carefully watched, are required. If the patient is restless for two or three nights in succession, 30 grains of bromide of potassium, or 20 grains of chloral hydrate, may be given every four hours, for two or three doses; but, as the disease in young people is spontaneously curable, sedatives must not be pushed. One or more experienced attendants should be always present, but no form of mechanical restraint is permissible, for it always shows a lack of proper attendance.

In older cases, a mild purge should begin the treatment, and light but very nourishing food should be administered at short intervals. Milk, beef tea, raw eggs beaten up with milk, strong soup, and such articles, are to be given freely, and very small quantities of stimulants may be occasionally put into them, so as to coax the patient to take them, when, by careful management and good nursing, a very severe attack may be tided over, and natural sleep will return in from three to seven days. The early administration of sedatives is to be deprecated; but, should the restlessness persist, in spite of careful and assiduous feeding, a full dose of *laudanum* (30 to 40 minims), at bedtime, is of great value. In the absence of albuminuria, lung complications, or any sign of failure of the heart's action, this drug is preferable to other sedatives. If the opium alone fails, its combination with an alcoholic stimulant, (brandy, whiskey, and especially stout,) often succeeds. If there be any tendency to syncope, if pneumonia should come on, and in cases complicated with shock, as in surgical injuries, a free use of stimulants is imperative.

III. CHRONIC ALCOHOLISM.

PROF. WILLIAM A. HAMMOND, M. D., NEW YORK.

In the treatment of chronic alcoholism, the physician should peremptorily insist upon entire cessation from the use of alcoholic liquors.

A mild purgative should commence the treatment, the bowels being always more or less deranged:

1098. ℞. Pulv. aloës,
Ext. fel. bovis exsic., āā gr. xv.
Resinæ podophylli, gr. ij. M.
For five pills. One every alternate day.

For the special treatment of the condition, the *oxide of zinc* has been highly commended, and certainly possesses great power, (gr. ij–iij, *ter die.*) But the bromides are yet more efficacious, especially the *bromide of zinc:*

1099. ℞. Zinci bromidi, gr. ij.
Syrupi simplicis,
Aquæ, āā f. ʒj. M.
This amount three or four times a day, gradually increased as rapidly as the stomach will permit, to two or three times the quantity.

Digitalis is an important adjunct to the treatment. It is the most active agent we possess as an eliminant of alcohol through the kidneys, and is also a heart tonic. It may be given in the infusion, f. ℥ ss thrice daily; or of the tincture gtt xv–xxx, as often.

In the acute form of alcoholism, that which follows the sudden cessation of the wonted stimulus, the main indication is to procure sleep as soon as possible. No means in such cases is so effectual as the hypodermic injection of a full dose of morphia, gr. ¼–½, as often as may be required, combined with the internal administration of brandy or whiskey in moderate quantities.

When, however, the affection has come on *during* a debauch, these substances add fuel to the flames. In such cases, the bromides, in large doses, combined with digitalis, are the most effective remedies:

1100. ℞. Potassii bromidi, ʒj.
Infusi digitalis, ℥ ss. M.
This amount every hour or two until the patient sleeps.

The monobromide of camphor, gr. iv in capsule, every hour, has been well spoken of.

With the medical treatment of either form of alcoholism, the strength should be supported by beef tea, and after convalescence, quinine, iron and strychnia will prove of service.

DR. T. D. CROTHERS, HARTFORD, CONN.

In the practice of this able specialist, the liquor is taken from the patient *at once*, and the following given:

1101. ℞. Ammonii bromidi, gr. xl.
Tincturæ zingiberis, ℥j.
Aquæ, ℥j. M.
This, with the addition of tinct. cinchonæ, is often given every three hours.

The first and second night the following is used:

1002. ℞. Chloral hydratis, gr. xv.
Tinct. zingiberis, ℥j.
Aquæ or syrupi, ℥j. M.
If this acts well it is used until natural sleep is restored.

In some cases the following is prescribed:

1103. ℞. Spiritûs ætheris sulphurici compositus, ℥j.
Syrupi cinchonæ, ℥j. M.

This is often a substitute for liquor, and if it does not disturb the stomach may be freely used. *Congress* and *mineral waters* are given freely.

1104. ℞. Bromidi ammoniæ, gr. xxx.
Quassiæ infusi, ℥ij. M.
Is often used with good results.

Phosphoric acid and *cinchona* form the basis of all the tonics given. The *iodide* and *bromide of potassium* are valuable, but are not certain, and often disagree with the stomach. Bathing and electricity are always good, although the latter is not well borne in many cases. Remedies that derange the stomach are avoided if possible. The first want of the disordered system is rest. Neuralgia and obstinate insomnia follow in nearly every case. Of the iron preparations, the *citrate* is the most *useful*, with *cinchona; quinine*, unless indicated by the presence of malaria, frequently causes cinchonism. No effort is made to cause sleep until night, then one of the above remedies is given. Fluid extr. lupulin is excellent with bromide of ammonia.

All *tinctures* and *alcoholic* extracts are carefully avoided after the first few days. Infusions and other preparations are used. Fruits of all kinds are recommended. Bathing and reclining, with some of the above remedies, will often suspend the depression complained of. As a gentle tonic, nothing is more useful, after the system recovers from the immediate effect of liquor, than:

1105. ℞. Potassii chloridi, gr. x.
Infusi calumbæ, ℥j. M.
Taken four times a day for a long time.

After the patient has been under treatment a few days the following cathartic is excellent:

1106. ℞. Hydrargyri pilulæ, gr. x.
With Seidlitz powder in the morning.

The treatment varies somewhat with each case. In some instances, no medicines are tolerated, and only external means, with exact hygienic rules, can be applied. In others, general alterative plans of treatment give good results. Narcotics are always transient in their effects, and more or less uncertain; and stimulants are frequently irritating and complicate the trouble. In delirium tremens, *constant nursing, nutritious food, bathing, chloral* at night, with the *bromides, mineral waters,* etc., are the most effectual means. Occasionally, Dr. C. gives *milk-punch* in protracted delirium, but does not think it the most valuable remedy. A steam-vapor bath is equally as good. *Milk,* and *tea* and *coffee* are given *ad libitum.* Beef tea, etc.

DR. N. KEELER MORTON,

Physician to the New York Inebriate Asylum. This physician gives the following plan of treating the partial nausea, loss of appetite, nervous irritation, prostration and headache, which follow prolonged excessive alcoholic indulgence, symptoms to which the Germans apply the significant name, *Katzenjammer.* (*Medical and Surgical Reporter, April,* 1875.)

If, in such cases, we continue the exhibition of alcohol, (brandy and soda, etc.,) we temporarily alleviate the suffering, but are surely adding fuel to the fire. Experience has shown that, if we can substitute the stimulus of nourishing food for liquor, we can accomplish our end without running any risk to our patient. But, to do this, we must create an appetite for the food, and cause it to be retained and assimilated. For this purpose, Dr. MORTON universally pursues the following plan:

A double Seidlitz powder is administered in as large a quantity of water as possible, for the purpose of producing a rapid and thorough evacuation of the stomach and bowels. This is followed by:

1107. ℞. Etheris chlorici, gtt. xv.
Glycerinæ, f. ʒ ss.
Tincturæ capsici, gtt. iij.
Syrupi zingiberis,
Tincturæ cinchonæ comp., āā f. ℥ ss.
Aquæ, f. ℥ iss. M.
For one dose.

This is only given two or three times, once each morning, followed, during the day, by a teaspoonful of the following, every three hours:

1108. ℞. Lactopeptini, ℥ iij.
Acidi hydrochlorici, gtt. xxx.
Glycerinæ, f.℥ ss.
Aquæ aurantii, f.℥ iij. M.
For a mixture.

The result of this treatment is almost always satisfactory.

DR. S. B. MARKEL, PENNSYLVANIA.

1109. ℞. Quiniæ valerianatis, gr. v.
Ferri sulphatis, gr. x.
Spiritûs myristicæ, f.℥ ss.
Aquæ menthæ piperitæ, f.℥ iij. M.
A teaspoonful whenever the craving for drink is felt. (Tilden's *Journal of Materia Medica*, May, 1877.)

The following formula, similar to the above, has been considerably employed for the same purpose:

1110. ℞. Ferri sulphatis, gr. v.
Magnesiæ, gr. x.
Aquæ menth. pip., ʒ xj.
Spir. myristicæ, ℥ j. M.
This amount twice daily, to appease the craving for liquor, is said to remove it entirely, and prevent the physical and mental prostration that accompany the absolute cessation.

Or the following:

1111. ℞. Pulv. calumbæ,
Pulv. pruni virginianæ, āā ℥ iij.
Pulv. capsici, ℥ j. M.
Mix well and sift. A teaspoonful in a glass of cold or hot water, when needed, to allay the desire for stimulants.

1112. ℞. Tinct. capsici, f.ʒ iij.
Tinct. digitalis, f.ʒ j.
Aquam camphoræ, ad f.℥ vj. M.
A tablespoonful, as required.

1113. ℞. Tinct. capsici, f.ʒ ij.
Tinct. nucis vomicæ,
Acid. nitro-hydrochlorici diluti, āā f.ʒ j.
Infusum gentianæ, ad f.℥ xij. M.
Two tablespoonfuls, as required.

Either of the above preparations is stated by writers in the *Lancet*, (June, 1877,) to be very useful in allaying the craving for alcoholic stimulus, and removing the sense of sinking and faintness so much

complained of by intemperate persons who have ceased indulgence in their wonted stimulus.

The *oxide of zinc* has also proved of much service in these cases. Dr. ROBERTS BARTHOLOW recommends that it be combined with pepper:

1114. ℞. Zinci oxidi, ℥j.
Piperinæ, ℈j. M.
For twenty pills. One three or four times a day.

These, he says, relieve the trembling and the gastric catarrh, and diminish the appetite for stimuli. When commencing the administration of oxide of zinc, it should be given on a full stomach, otherwise, it is apt to produce nausea.

MR. C. O. GROOM NAPIER, ENGLAND.

This gentleman pointed out, in a paper read before the British Association for the Advancement of Science, in 1875, that a vegetable diet materially decreases the desire for alcohol in those addicted to its use. Most people find that they can take wine with animal food, but not with farinaceous or amylaceods food. Hence, vegetarianism is a valuable aid in checking habits of inebriety.

Mr. NAPIER states that certain articles of vegetable diet are especially antagonistic to the taste for alcohol. These are: Macaroni, haricot beans, green dried peas and lentils, soaked for twenty-four hours and well boiled, onions, celery, rice, and highly glutinous bread. It is well known that nations who consume but little meat, subsisting principally on fruits and vegetables, are conspicuously temperate; and individuals who, for other reasons, adopt an exclusively vegetable diet, soon lose their desire for even an accustomed stimulant.

RÉSUMÉ OF REMEDIES.

Alcohol. Most practitioners used to believe that in acute alcoholism in feeble subjects, moderate doses of alcohol are indicated. The latest authorities generally deem it needless.

Ammonii Bromidum has been employed in delirium tremens.

Ammonii Carbonas is valuable in inebriety. (See above.)

Ammonii et Potassii Tartras is much employed by German physicians, in this affection, but little used in America or England, excepting in combination with opium, when it often induces sleep after the failure of opium alone.

Arsenicum. Fowler's solution, in 1-drop doses, proves serviceable in the vomiting after a debauch, and in the morning vomiting of chronic alcoholism, either alone or combined with from 3 to 5 grains of capsicum.

Asarum Europæum. The leaves of this herbaceous plant enjoy a great repute in Russia as a remedy for the deranged state of health consequent on habits of intoxication. They are used in infusion, (℥ ij–iv to aquæ Oj), or powder, (gr. iij, in pill.)

Atropia, hypodermically, is recommended by BARTHOLOW when there is obstinate insomnia with great restlessness, weakened action of the heart, coldness of the surface, clammy sweat, and a failure of nutrients, bromide of potassium, chloral and hypodermic injections of morphia.

Camphora is recommended by Dr. LAYCOCK in delirium tremens in persons of a nervous habit, where the exhaustion is great, and morphia inadmissible. The *monobromide* of camphor has been praised also.

Cannabis Indica is regarded by Dr. ANSTIE as preferable to opium when there is any reason, from the quality of the pulse, to believe the circulation much enfeebled. He prescribes gr. ¼–½ of a good extract. TYRRELL records (*Medical Press*, March 13th, 1867,) a case of delirium tremens, in which, after three doses of ♏xx of the tincture of cannabis indica, every third hour, the benefit was marked after the failure of capsicum, and when opium was contra-indicated.

**Capsicum,* in large doses, is strongly recommended by Dr. LYONS and others.

Chloral has been successfully combined with bromide of potassium in the indescribable nervousness, uneasiness and malaise which supervene in chronic alcoholism:

1115. ℞. Chloral hydratis, gr. x.
Potassii bromidi, ʒj.
Syrupi simplicis, f. ℥j.
Aquæ, ad f. ℥j. M.
This amount every hour.

Very much larger doses have been given by some physicians, (℥ ij of chloral at a dose, Dr. F. BRADNACK, in the *Buffalo Medical and Surgical Journal*, September, 1877.) But the practice is undoubtedly dangerous. It has been shown beyond reasonable doubt, by Dr. MADISON MARSH, of Louisiana, and later by Dr. ERNEST MAGNAN, of Paris, that drunkards do not bear chloral at all well. Its use by them even in moderate doses is liable to be followed by sudden death. The latter physician abjures it entirely in alcoholic cases. (See, however, p. 562.)

Cinchona, in strong infusion, is said to act very happily in inebriety and in the tremulousness which affects habitual drunkards.

Conium is recommended by Dr. HARLEY, in combination with opium, thus:

1116. ℞. Succi conii, f. ℥ iv–vj–viij.
Tincturæ opii, ♏xx–xxx. M.
For one dose.

Dr. KITCHEN recommends full doses of the fluid extract of conium to control the muscular action in alcoholic nervousness and delirium tremens.

Fermentoleum Solani. Dr. MAGNUS HUSS recommends the empyreumatic oil, which gives that special flavor to Irish whiskey or potato brandy, the *fermentoleum*

solani, in doses gr. j–ij, five or six times a day, in a capsule or in pills. This remedy seems to act principally in diminishing the epigastric pains and pyrosis, and appears to have given much satisfaction.

Herba Serpylli. The wild thyme is a popular remedy for habitual drunkenness, in Russia. A teacupful of an infusion, ℥j to Oj, is given every half hour the first day, every two hours the second day, and then four to six times a day for two or three weeks, when the cure is complete. The thyme at first causes vomiting, diarrhœa, diuresis and diaphoresis; afterwards, increased desire for food and acid drinks, for which lemonade, etc., should be supplied.

Ipecacuanha has been very successfully used in delirium tremens by Dr. W. L. SCHENCK, (*N. Y. Medical Journal*, Oct., 1872,) in doses of ℈j of the powder every fifteen minutes until ℥ij are taken. Emesis is not necessary, and is often not produced by these doses. It has also been used with success to destroy the appetite for liquor in inebriates. The patient is confined to his room, on a low farinaceous diet, but allowed his favorite stimulus in any quantity. After a preliminary purge of calomel, he is given, the next day, ℥j of powdered ipecac., and this daily repeated. Its effects are said to be almost certain and permanent. (*Cincinnati Lancet and Observer*, July, 1877.)

Nux Vomica is a valuable tonic in the nervous prostration of inebriates. (F. 1113.)

Oleum Morrhuæ. Prof. LIEBIG, in his *Animal Chemistry*, long since pointed out that the use of cod-liver oil has a tendency to promote the disinclination for the use of wine. It is, therefore, especially useful in the exhaustion from prolonged alcoholism. The great art in giving it, is to commence with small doses (f.℥ss–j), and it is rarely necessary to increase these to more than double this quantity.

Opium is no longer employed indiscriminately in heroic doses, in every case of delirium tremens. To give it in large and repeated doses, on the principle that sleep must be produced at all hazards, is to run the risk of killing the patient. Dr. ANSTIE (*The Practitioner*, July, 1868,) asserts that great mischief was formerly done by the custom of plying the patient with larger and larger successive doses of opium, to drown the delirium in narcotic stupor, and says that opiates should never be given by the mouth when the hypodermic injection of morphia is possible. Prof. GRAVES recommends, in young, robust subjects, when there is much vascular excitement, the following combination:

1117. ℞. Tincturæ opii,
Vini antimonii, āā ♏xx. M.
To be repeated every three or four hours, according to circumstances.

When the patient is old, and when there is much depression, the opium may be advantageously combined with carbonate of ammonia (gr. iij–iv), or quinine (gr. ij–iij), or with camphor. Prof. STILLÉ says the best method of administering opium in delirium tremens, is to begin with gr. ¼, or its equivalent, and progressively augment the dose by small and hourly additions, until sleep is produced, or a sufficient degree of tranquillity obtained.

Phosphorus is a very useful remedy in the treatment of chronic alcoholism, according to Dr. D'ANCONA. (*Jour. d'Hygiéne*, February 21st, 1878.) It is perfectly

tolerated in doses which no one has dared to give heretofore—10 centigrammes (nearly 1½ grains) a day, for many weeks. He says the remedy gives to drinkers a feeling of comfort and strength, and furnishes the force necessary to carry on their organic functions, which they have been accustomed to get from alcoholic liquors.

**Potassii Bromidum* is recommended as of conspicuous benefit, by removing the delusions, calming the delirium, and procuring sleep, in the earlier stages of mania-à-potu, before the delirium has become furious. It is also of service in removing any delusions that may remain after the attack has been partially subdued.

**Quiniæ Sulphas* is the nervine tonic in which Dr. ANSTIE has the most confidence, in grain doses, two or three times daily. It should be given from the first, if possible, being, if the stomach is very irritable, administered in effervescence with bicarbonate of potash and citric acid.

Sinapis. In that stage when a timely emetic will cut short the attack, none is so appropriate as mustard.

Strychnia. On account of its excellent powers as a nerve tonic, strychnia is often given to restore the tone of the system after alcoholic excesses. It is said to be an ingredient in several of the "bitters" used as "pick-me-ups," among *habitués* of saloons. Dr. H. C. MOREY relates a case of a drunkard who, after long habit, would take a number of grains at once, to restore his tone. (*Pacific Medical Journal*, 1875.)

Zinci Oxidum is a most valuable nervine sedative, in the tremor and exhaustion from alcoholic excess. (See above.)

ARSENICISM, (CHRONIC ARSENICAL POISONING.)

Chronic arsenical poisoning is probably often overlooked. It is produced by the dust thrown off by many kinds of wall papers, from the consumption of candies, etc., colored with arsenical pigments, among laborers in arsenical manufactures, etc. Varying degrees of fever attend the attack, the digestion is deranged, the appetite impaired, bowels irritable, tongue white, furred and sore, mouth and throat dry and sore, and conjunctivitis frequent. Pain and weakness in the back and limbs, (arsenical paralysis) are not uncommon, as well as other nervous symptoms.

DR. GUENEAU DE MUSSY, PARIS.

It is well to commence the treatment with free bathing and a moderate purge, so as to eliminate any remains of the poison deposited on the skin or mucous membranes. This done, the *phosphide of zinc*

should be administered in regular doses. It has been found to act as an efficient antidote in these cases, and the arsenical reaction, which is usually quite marked in the patients' urine, will, under the influence of the zinc, rapidly diminish. The phosphide may be given in pill form, combined or not with nux vomica. Its beneficial effects should be perceptible in a week's time. In some instances, the nervous symptoms disappear with astonishing rapidity under its use.

DR. A. S. TAYLOR, LONDON.

When arsenic has been taken into the system in a gradual manner no reliance can be placed on the chemical antidotes usually recommended. The treatment should begin with emetics, purgatives and baths, so as to remove as much of the poison from the surface as possible. ORFILA has recommended that diuretics be employed, in order to promote the secretion of urine and thus favor the more speedy elimination of the poison from the system. In some cases the urinary secretion is deficient or suppressed, when proper measures are required to restore it.

JAMES COPLAND, M. D., F. R. S.

To treat the *nervous symptoms* which are associated with arsenicism, this writer believes that *opium* and *camphor* are the most reliable agents; in addition to these he recommends embrocations containing turpentine; and mild tonics and restoratives in small doses. If the paralytic symptoms continue, exercise in the open air, the preparations of nux vomica or strychnia and external irritants are the chief means of cure. For the condition of constipation often present, *olive oil* taken in frequently repeated doses, and administered in enemata, is the most appropriate aperient. The disturbances of the digestive organs are apt to be very obstinate and are best relieved by change of air, by traveling and by strict attention to diet. Spirituous liquors should be avoided and farinaceous substances preferred.

Dr. EMERSON (in the *Amer. Journal of Pharmacy*, VIII, p. 346,) believes that the use of *tobacco* is to a certain extent antidotal to the effects of arsenic; and those exposed to such poisoning might with advantage become consumers of the weed.

OPIISM (OPIUM EATING; THE OPIUM HABIT.)

DR. C. H. HUGHES, LOUISIANA.

This physician recommends the substitution of *quinine* for the opium. He administers gr. ij–iv for every grain of morphia withdrawn. Should the prostration become very great, tinctura cannabis indica will usually relieve it. For the pains which are usually complained of, he exhibits elixir valerianæ ammoniat., f. ʒ ij–iv, and chloral at night. Instead of the latter, camphor may be substituted. Should the discharges from the bowels be sufficient to weaken the patient, the use of tannin will generally check them. The patient will require constant surveillance for a few weeks, especially when passing through the crisis of reduction. (*New Orleans Medical and Surgical Journal*, January, 1877.)

DR. W. C. BLALOCK, GEORGIA.

The treatment successfully adopted by this physician is as follows (*Atlanta Medical and Surgical Journal*, February, 1877): Having ascertained the exact amount of the opiate, which the patient is accustomed to consume daily, he administers a somewhat less amount *combined with strychnine*. For instance, if the amount taken is 6 grains of morphia daily, he prescribes:

1118. ℞. Morphiæ sulphatis, lxiv.
Strychniæ sulphatis, gr. j.
Aquæ, f. ʒ ij.
Syrupi simplicis, f. ʒ vj. M.
Dose, a teaspoonful three times a day.

This is a reduction from 6 grains down to 4. It is continued until it is exhausted, which will be fourteen or sixteen days, when the following is prescribed:

1119. ℞. Morphiæ sulphatis, gr. lvj.
Strychniæ sulphatis, gr. j.
Aquæ, f. ʒ ij.
Syrupi simplicis, f. ʒ vj. M.
Dose, same as before.

This is a reduction from gr. iv to gr. iijss of morphia per diem. After another two weeks, another reduction of gr. ss is made, and so on until the strychnia solution alone is given. The quantity of

strychnia is never diminished. It gives tone to the large bowel and nervous system, and to some extent takes the place of opium. During the treatment, constipation must be guarded against, and digestive troubles met by appropriate diet and remedies.

SIR ROBERT CHRISTISON, EDINBURGH.

After considerable experience in the management of opium-eaters, this author doubts if success can be obtained by the gradual reduction of the amount consumed. He believes the drug can safely be left off abruptly, even after many years' indulgence. The nervous irritability which ensues he treats with full doses of bromide of potassium; and the insomnia with chloral. For the first three days after the cessation of the habit, the patient suffers from great mental depression, nausea and vomiting; but by the fourth night these symptoms usually disappear; the patient obtains a refreshing sleep, after which the progress is satisfactory. The diarrhœa apt to occur he treats with suppositories of morphia.

He acknowledges, however, that there is great danger of a relapse after apparent cure.

DR. J. B. MATTISON, PARRISH HALL, BROOKLYN, N. Y.

This writer, who has long given special attention to the treatment of opium-eating, believes in the gradual and systematic reduction of the accustomed dose. As a tonic, he has found *cod-liver oil* of signal benefit; also *arsenic*, as liq. potassæ arsenitis, gtt. v–x, *ter die*.

For the obstinate insomnia which usually arises on the withdrawal of the drug, he prescribes *hydrate of chloral*, or the following combination:

1120. ℞. Potassii bromidi, gr. xx.
Tinct. hyoscyami, f.℥ij. M.
This amount at night.

Full hot baths are also very useful to dispel the insomnia.

Another source of annoyance is profuse hydrosis. This may be checked by atropia, gr. $^1/_{60}$, hypodermically. This drug, too, exercises an excellent effect on the obstinate constipation, which is a frequent feature of such cases.

The bromides—preferably of sodium—are beneficial for the nervousness, given in full doses, 2 to 8 drachms per diem, according to

requirement. A moderate degree of bromism is usually essential. Hydrobromic acid is sedative, and, with some monobromide of camphor, acts kindly. The lesser soporifics have a value, and various combinations will suggest themselves.

During the opiate withdrawal, strong nerve tonics are demanded, and among these strychnia, iron and arsenic hold a leading place. The following combinations are valuable:

1121. ℞. Tinct. ferri chloridi, ℥ iv.
Liq. potass. arsen., ʒ ss.
Strychniæ, gr. j.
Glycerinæ, ℥ iijss. M.
Take two teaspoonfuls in water after each meal.

1122. ℞. Elix. iron, strych. and quinine, (Wyeth's.)
One to three teaspoonfuls after meals.

1123. ℞. Ferri pyrophos., ℥ ss.
Strychniæ,
Acid. arseniosi, āā gr. ij.
Ext. gentianæ, ʒj. M.
Fiat pilulæ, No. 60.
Two pills after each meal.

Good food, proper exercise and cold, salt, sponge or shower-baths, all exercise a distinctly roborant effect. Whatever remedies employed, it is essential to success that the treatment be conducted under frequent professional supervision, moral as well as physical, and as restraint is sometimes requisite, the best results follow treatment in inebriate institutions, or under the private care of those who devote themselves exclusively to the management of this disease. Successful self-treatment is very rare.

DR. T. D. CROTHERS, HARTFORD, CONN.

This physician is accustomed to reduce the amount of opium gradually in some cases, rapidly in others. The more rapid the reduction, the more marked the insomnia, anæmia and nervous exhaustion; but if these can be combated successfully, the final recovery is more positive and permanent.

After the opium is discontinued, the following nerve-tonic is often used with good effect:

1124. ℞. Tincturæ nucis vomicæ, gtt. xij.
Acidi phosphorici diluti, gtt. xx.
Syrupi pruni virginiani, f.ʒ ss. M.
This amount, at one dose, twice a day.

Another very excellent tonic for the nerve depression, alway present in these cases, is:

1125. ℞. Acidi phosphorici diluti, gtt. xx.
Tincturæ cinchonæ, f.℥ ss.
Syrupi simplicis, f.℥ ss. M.
This amount three or four times a day.

The following is also a favorite for the nerve depression:

1126. ℞. Ammonii bromidi, gr. xxx.
Tincturæ cinchonæ, f.℥ ss.
Syrupi, f.℥ j. M.
To be taken every three or four hours.

Also the following, which is varied from time to time, combining with it fluid ext. lupulin, or *valerian*, or some of the bitter tonics:

1127. ℞. Chloral hydratis, gr. xx.
Syrupi cinchonæ, f.℥ j. M.
Taken every three hours.

The ferri et quiniæ citratis is given in many cases, but cinchona and some of the vegetable tonics seem to work best. In addition to medicines, he orders a hot or tepid bath every day, enjoins out-door exercise, light, nutritious diet, and the galvanic current over the spine.

For the *insomnia*, he only gives remedies at night, after a warm bath, usually one of the following:

1128. ℞. Chloral hydratis, gr. xxv.
Syrupi, ℥ ss. M.
To be repeated in two hours, if it does not act well.

If this does not work well, but is followed by nausea, or other disturbances, next day the following may be used:

1129. ℞. Ammonii bromidi, gr. xl.
Tincturæ zingiber., ℥ j.
Aquæ, ℥ ij. M.
This may also be repeated.

No other remedies in his experience seem more certain than these. *Electricity* frequently increases the insomnia. *Valerian*, *belladonna*, and *lupulin* occasionally work well, but are not alike in their effects, and derange the stomach. *Tea*, *coffee*, and *port wine* act well in many cases, taken just before bed-time. Rubbing and bathing and perfect quiet, in good surroundings, and the entire confidence of the patient,

are essentials. The diarrhœa seldom requires particular attention; if it does, the following is usually sufficient:

1130. ℞. Bismuthi subnitratis, ℈j.
Acidi tannici, gr. x. M.
For one powder, every three hours.

The excessive sweating will usually yield to acid mixtures, of which the dilute phosphoric acid is always the base. In both these conditions, the free use of subacid fruits, such as lemons, oranges, limes and grapes, is extremely advantageous.

Special attention must be given to the mental condition, as melancholia and brooding are prominent symptoms, and require to be met by light occupation, cheerful conversation, amusements, varied society, etc.

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1131. ℞. Extracti hyoscyami,
Extracti gentianæ,
Camphoræ pulv.,
Quiniæ sulphatis, āā gr. xx.
Capsici pulv.,
Zingib. pulv.,
Cinnamomi pulv., āā gr. xl.
Sapon. castil., }
Syrupi simplicis, } q. s. ut ft. massa.
Make ninety pills. One five to ten times a day.

The efficacy of these pills in overcoming the opium habit, and in preventing the suffering on giving up the use of that drug, is stated to have been proved in numerous cases.

HYDRARGISM (CHRONIC MERCURIAL POISONING.)

PROF. WILLIAM A. HAMMOND, M. D.

The earlier symptoms of chronic mercurial poisoning are salivation with swollen gums, fœtid breath, loosening teeth, and ulcerations. Mental and physical weakness, paralysis and convulsions, and caries and necrosis of the bones, are results which manifest themselves later.

The specific treatment, in all cases, is by the internal administration of *iodide of potassium*, which as MELSENS has shown, separates mercury from its combination with the tissues of the body, forming with it the iodide of mercury, which is eliminated with the urine. The

iodide of potassium must be given in full doses, say gr. xxx, in divided doses, every day. The urine can be readily tested for the mercury eliminated under its influence, by placing a few drops, excreted during the second day, on a bright copper plate, and adding a drop of hydrochloric acid. A bright metallic stain will be found on the plate, if mercury is present; the iodide of mercury is decomposed, and the metallic mercury is precipitated.

Of course, while under treatment, the patient must not be subjected to continued poisoning by mercury, either medicinally or through his avocation.

Tonics, such as iron, quinine, and strychnia, are useful adjuncts. The prognosis, under favorable circumstances, is generally good, even in severe cases.

JAMES E. GARRETSON, M. D., D. D. S.

Mercurial ulitis, when confined alone to these parts, will generally disappear on the cessation of the drug. If this should not prove the case, nothing better can be done than to scarify and paint the gums with tincture of iodine; as a rule, the officinal tincture, diluted one-half. Chlorate of potash as a wash, and also used internally, may be employed; to an adult, gr. x in a tablespoonful of water, four or five times a day, is an appropriate dose. As a local application, ℥j to aquæ f. ℥j, is a very good strength. The bowels are to be kept in a lax condition by saline cathartics.

When the mercurial poisoning passes to that stage which results in the breaking down of the tissue, the treatment must be more active, and directed quite as much to the constitution as to the mouth itself. Locally, the fœtor will urgently demand attention; and one of the best means to correct this will be found in the permanganate of potash in solution, gr. ij–x to aquæ f. ℥j. Constitutionally vigorous tonic medicaments are required. If hemorrhage intervenes, tincture of *Erigèron Canadensis,* gtt. j–ij, repeated occasionally until such bleeding is controlled. Locally, *cobweb* saturated in alum water may he used. Laid carefully upon the bleeding part, and retained in position, it will seldom be found to fail. Monsel's solution, etc., should not be used, owing to the great liability to sloughing.

Incisions may still be made, but few in number and cautiously, and the tincture of iodine applied should be diluted with two-thirds water. The dilute aromatic sulphuric acid is also a happy local remedy in

such cases, say f. ʒ j to aquæ f. ℥ viij. A combination for local use, of beneficial effect, is:

1132.	℞.	Potassii chloratis,		ʒ ss.
		Sodii biboratis,		
		Aluminis pulveris,	āā	ʒ ij.
		Potassii permanganatis,		gr. xxv.
		Aquæ coloniæ,		f. ℥ j.
		Tincturæ cinchonæ,		f. ℥ ij.
		Tincturæ myrrhæ,		f. ℥ j.
		Tincturæ capsici,		f. ℥ j.
		Tincturæ krameriæ,		f. ℥ j.
		Aquæ,		f. ℥ viij. M.

For a mouth-wash.

If, in defiance of all that is done, the parts should slough, one of three things occurs—the disease will seem to have exhausted itself, and the parts, after a little rest, give evidence of recovery; or the bone follows the ulcerative action, and sloughs likewise; or the patient dies from irritation and exhaustion.

In the second case, it is important that the dead bone be left to detach itself, and not be removed by the surgeon.

Mercurial glossitis and ulceration of the tongue are also conditions frequently demanding treatment. In rapid swelling of the tongue, it may be necessary to leech the throat vigorously, to sweat the patient thoroughly, and follow this with a saline cathartic. These measures, combined with an arterial depressant, aconite, digitalis, or veratrum, will usually relieve from immediate danger. Great lassitude and depression are apt to follow.

Locally, sage tea, saturated with chlorate of potash; common table tea; and the internal use of bromide of potassium, gr. xx, three or four times a day, are grateful measures.

For the mercurial ulcer, equal parts of bismuth, red bark and borax act sometimes very happily. Chlorate of potash, tannic acid and glycerine form another excellent combination. Solutions of sulphate of copper or zinc, gr. j to aquæ f. ℥ j, are cleansing and stimulating applications.

PROF. JAMES SYME, SCOTLAND.

Persons whose constitutions have been injured by the use of mercury, frequently suffer from sores, either superficial and confined to the integuments, or deep-seated and affecting the periosteum or bones. In both cases the condition concerned is distinguished by characters

which a practiced eye readily recognizes, and proves very obstinate under ordinary treatment.

For these ulcers Prof. JAMES SYME recommends *blisters*, which shall not extend much beyond the ulcerated surface, in connection with small doses of *iodine*, gr. ij, three times a day, in simple solution. This simple and powerful mode of treatment has, in his hands, completely restored limbs which had been condemned to amputation by other surgeons, for ulcerations and disease of the bones. (*Surgical Works*, 1866, p. 816.)

Dr. JUKES STYRAP, physician extraordinary to the Salop Infirmary, has found the following prescription exceedingly efficacious in controlling ptyalism—in fact, a positive "specific" for it:

1133. ℞. Sulphur præcip., ℈ ij–iv.
Potassii chloratis, ℈ ij–℥ j.
Liq. morphiæ, f. ℥ j–iss.
Mist. amygdalæ, f. ℥ viij.
Mix well. Two tablespoonfuls every three or four hours. Shake well.

Especial care must be taken to diminish the quantity if any relaxation of the bowels supervene. In thirty-six hours, the secretion and tenderness of the gums become very sensibly diminished.

PROF. S. D. GROSS, PHILADELPHIA.

1134. ℞. Liquoris plumbi subacetatis, f. ℥ j.
Aquæ, f. ℥ viij. M.
To be used as a mouth-wash every hour or two, in cases of *mercurial stomatitis*.

The only objection to this lotion is, that it discolors the teeth, which effect, however, quickly disappears. At the same time, internally, the chlorate of potassa should be administered. Fifteen to thirty grains are to be taken *ter die*, in mucilage or lemonade.

Dr. FAHNESTOCK, of Pennsylvania, has stated that an infusion of the inner bark of the root of the sumac, *Rhus glabrum*, is almost a specific for the sore mouth attending inordinate mercurial salivation.

The hypodermic injection of the *sulphate of atropia* is a powerful agent in arresting mercurial salivation. Dr. EBSTEIN, of Breslau, arrested, by this means, in seven minutes, a case which had continued a month; on doubling the dose, the secretion was arrested for twelve hours. This action of the drug is explained through its inhibitory influence on the permanent irritation of the secretory fibres of the salivary glands.

Pilocarpin has been found useful to relieve the system of the drug.

PLUMBISM—LEAD POISONING.

PROF. WILLIAM A. HAMMOND, M. D.

In the numerous forms of chronic lead poisoning—whether this assumes the character of lead colic, paralysis, encephalopathy, hyperæsthesia, or anæsthesia—the specific treatment consists in the administration of the *iodide of potassium* in full doses. Although some claim that the resulting compound—the iodide of lead—is very poisonous, Dr. H. has never seen the least untoward result, and he has always used the potassic salt in large doses from the very beginning.

In the treatment of lead encephalopathy, the free administration of the iodide of potassium, combined with the bromide of potassium, affords the best prospect of success.

In lead colic, the hypodermic injection of morphia, in doses sufficient to keep the pain in check while the iodide of potassium is doing its work, with an occasional purgative, will generally be all the treatment required.

But, in lead paralysis, in addition to the iodide, we must use direct measures. Chief among those is electricity. The induced current, if it will cause the muscles to contract, is to be preferred. Each paralyzed muscle must be acted on for two or three minutes every alternate day. In ordinary cases, two months will suffice to effect a cure.

When the electric contractility of the muscles is completely abolished, the primary interrupted current must be used until contractility is established. Frictions, kneading of the muscles and passive exercise are also useful.

PROFESSOR WILLIAM PEPPER, M. D., PHILA.

This practitioner remarks that the treatment of lead colic should have several points in view. First, the removal of lead from the intestinal canal; second, its elimination from the tissues; and third, the treatment of special manifestations.

For the removal of lead from the intestinal canal he prefers the *sulphate of magnesium* with *dilute sulphuric acid*. This converts it into an insoluble salt, and acts also as a purgative. Internally, to eliminate the lead from the tissues, he gives the iodide of potassium in full doses. This forms the iodide of lead, which is excreted by the skin

and kidneys. With regard to the treatment of special symptoms, if there is severe colicky pain it must be relieved by anodynes or anæsthetics. The following is a preparation which acts well:

1135. ℞. Ext. colocynth. comp., gr. ij.
Ext. opii, gr. ss.
Ext. belladonnæ, gr. ⅙. M.
This pill repeated until the pain is relieved and the bowels opened.

The palsy may be relieved by the internal administration of *strychnia*, and locally by the application of the faradic current to the affected muscles.

The anæmia is best treated by the iodide of potassium and the salts of iron.

PARIS HOSPITALS.

Sulphuric acid is much employed in the Paris hospitals in the treatment of saturnine poisoning, with the most marked success. Mild cases yield in about three days, severe ones in six or seven days.

1136. ℞. Acidi sulphurici diluti, f.℥ ij.
Aquæ, Oij. M.

This quantity is given during the day. The stomach soon becomes accustomed to it, even when the first dose or two is rejected. The abdominal pains are relieved after the first or second day, the constipation yielding soon after. This treatment should be combined with the repeated use of sulphur baths.

DR. LUTZ, PARIS.

1137. ℞. Sulphuris loti,
Mellis despumati, āā ℥ iv. M.
Give an ounce and a half of this electuary three consecutive days in lead colic, then give in doses gradually lessened. On the third day the acute pain has disappeared.

1138. ℞. Chloroformi, f.℥ ss.
Alcoholis diluti, f.℥ ss.
Mix and add,
Aquæ, f.℥ viij. M.
To be given as an enema in lead and nervous colics.

1139. ℞. Podophyllin,
Extracti nucis vomicæ,
Extracti belladonnæ, āā gr. iij. M.
Divide into ten pills. One twice or thrice a day, to relieve the painful constipation of workers in lead. At the same time, sulphur baths are to be administered.

PROFESSOR NIEMEYER.

1140. R. Olei ricini, f.℥ ij.
Olei tiglii, gtt. iij. M

A tablespoonful every two hours in lead colic. The patient also to take in the twenty-four hours three opium pills of from gr. ¼–¾. Warm baths, narcotic fomentations, enemata, sometimes purgative, sometimes narcotic.

GEORGE HAY, M. D., PHILADELPHIA.

This recent writer (*Medical Times*, March, 1878,) objects to the exhibition of potassium iodide in cases of chronic lead poisoning on the ground that the iodide of lead is more insoluble than the chloride of the same metal. Preferably he would exhibit *sodium chloride* in drachm doses, three times a day, because, as he says, the kidneys eliminate the chloride of lead freely or an oxide of lead dissolved in a solution of a chloride. In addition to this a tepid bath ought to be employed daily, for three reasons, viz., to keep the skin active, to remove whatever lead has been excreted in that way during twenty-four hours, and to prevent its re-absorption. The use of a soft flesh-brush would be a great assistance to the bath by removing mechanically from the skin any lead, in whatever form, adhering to its surface. Sponging of the body might be substituted if the patient is too weak to bear the fatigue of bathing. During the course of recovery from chronic lead poisoning, to improve the nutrition and build up the strength of the patient, analeptics, nervine tonics, and nutrients are indicated, such as tinctura ferri chloridi, liquor strychniæ (not the sulphate,) or tinctura nucis vomicæ, tinctura cinchonæ, or the alkaloid quinia (not its sulphate,) together with animal broths, milk, eggs, etc.

JOHN SYER BRISTOWE, M. D.

This author advises, in the treatment of lead colic, that the pain and discomfort be relieved by opiates and fomentations, and that no purgatives whatever be administered, but the bowels be left to act of themselves, which they usually do in a few days. At most, copious enemata of warm water or warm gruel may be given. The recommendation of Dr. Pereira, was baths medicated with potassium sulphide.

1141. R. Potassii sulphidi, ℥ ij.
Aquæ, C xv. M.

The theory is that the lead escaping from the surface of the skin is converted into an insoluble sulphide. Dr. Bristowe, however, doubts

whether the baths promote the escape of the lead in any important degree.

For the restoration of the paralyzed and wasting muscles, galvanism is the only effectual remedy. The most effectual is the slowly interrupted constant current, used three times a week, ten or fifteen minutes at each sitting. Each muscle should be separately galvanized.

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