SOUTHERN

MEDICAL AND SURGICAL JOURNAL.

EDITED BY

PAUL F. EVE, M. D.,
AND
I. P. GARVIN, M. D.

Medical College of Georgia.

"Je prends le bien où je le trouve."

VOL. III.—1847.—NEW SERIES.

Augusta, Ga.

JAMES McCAFFERTY,
PRINTER AND PUBLISHER.

1847.
Of Mercury and its Compounds. By John M. B. Harden, M. D., of Liberty County, Georgia—Correspondent of the Academy of Natural Sciences, Philadelphia.

There is no substance probably to be found either in the organic or inorganic kingdoms of Nature which possesses more interest and importance than Mercury, whether we consider the beauty and variety of its Compounds, or its utility in the Arts and Sciences. The Chemist can experience ever new delight in studying its varied combinations. The Philosopher, by its means, is enabled to measure the temperature and weight of the atmosphere—to foretell with some degree of certainty the approach of typhoons and hurricanes, and to determine the relative heights of different localities on the Globe. The Artist employs to great advantage many of its amalgoms. The votary of the toilet finds in them a just representative in the reflected image, and in the daguerrian process it brings out the photographic likeness with the magic of Aladdin’s wonderful lamp. But it is in Medicine that it has attained its highest reputation, and it is to some of its more simple compounds and their effects upon the animal system, that we design in this article to direct attention.

Mercury seems not to have been familiarly known to the ancients, although it is distinctly alluded to in the writings of Aristotle, Dioscorides and Pliny, the latter of whom gives us a very correct method of obtaining it from its ores. He speaks of it under the names of "Argentum Vivum," and "Hydrargyrum," and evidently intends to make a distinction between the substances designated by these terms, but I think we may conclude from the very little that he says upon
the subject that they were identical. The "Argentum Vivum" he
denominates also, from its fluid properties, "Vomica liquoris aeterni;"
and says it was found in an ore obtained from veins of Silver.
The following are the properties he ascribes to it:—it corrodes and
destroyed all vessels (probably meaning only metallic). All things
float upon it, except Gold (proving that next to Gold it was the heavi-
est substance known). The best way, to purify it, was by shaking
it well in earthen vessels into which cloth or articles of wearing appa-
rel were thrown (these last absorbing its dross). To separate it from
Gold, the amalgam was thrown into skins that were strongly pressed
or kneaded with the hands so as to cause the Mercury to escape by
the pores, and leave the Gold pure.

The "Hydrargyrum," compounded of two Greek words, ὕδας and
στερεός signifying fluid Silver, was obtained from an ore called by
him "Minium," or more correctly, the "Secundarium," a kind of
refuse ore of Minium. It is plain, however, that the Minium spoken
of by him is not the Minium of the present day, which is nearly a
pure peroxide of Lead; but that he must have intended the ore known
to us as "Cinnibar," consisting for the most part of Sulphur and
Mercury, forming the Sulphuret of Mercury. The word "Cinnibar,"
however, as used by Pliny, he tells us, was of Indian origin, and was
applied to designate the mixed Blood of a Dragon and Elephant who
had been mutually killed by each other. The process, which he gives
for procuring the Mercury from this ore, is so similar to that employ-
ed at the present day, and shows, withal, so great a degree of chemical
knowledge, at so early a period, that I must beg to have it here re-
corded in his own words:—He says, "It autem duobus modis: aere-
is mortariis pestillosque trito minio ex aceto: ut patinis fictilibus im-
positum ferrea concha, calice coopertum, argilla superillita: dein
sub patinis accensum follibus continuo igni, atque ita calicis sudore
deterso, qui fit argentī colore et aquae liquore. Idem guttis dividī
facilis et lubrico humore confluere."

It is now, as formerly, obtained by distillation from native Cinni-
bar or Sulphuret of Mercury. In order to purify it, it is recommend-
ed to re-distil it with half its weight of iron turnings, or by digesting
the metal with a small quantity of Nitric Acid or with a solution of
Chloride of Mercury, which rides it of the metals more oxidable than
itself.—(Graham.)

The name Mercurius or Mercury was first given to this metal by
the alchemists, from some fancied resemblance to the planet of that
name, as they gave the name of Mars to Iron, Saturn to Lead, Luna to Silver, and Venus to Copper—or more probably in honor of the god Mercury on account of its extreme mobility. It is well known to be perfectly fluid at the ordinary temperatures of the atmosphere and has a silvery metallic lustre. Its constant fluidity has caused some philosophers to consider it as a peculiar metallic water, and in consonance with the Greek "Hydragyrum," they have denominated it "Aqua non madefaciens manus."

Its chemical symbol is Hg. Graham gives its equivalent as 1265.8, or adopting the Hydrogen scale 101.43, but a very recent and careful examination of this metal by M. Millon, has determined its true equivalent to be an exact multiple of Hydrogen by 100, making it 1250.6. This result has been confirmed by the experiments of Erdman and Marchand.—It has a density varying according to temperature from 13.5 to 14, which is said to be its density in a state of congelation which takes place at about 39° or 40° below Zero of Fahrenheit's thermometer.

Mercury forms two compounds with Oxygen. The first is the Black oxide, Sub oxide, Mercurous oxide, and is the same substance as that called Æthiops per se by the older writers, consisting, as is now believed, of two equivalents of Mercury and one of Oxygen. It is obtained in various ways. The easiest and most common are to triturate the metallic mercury with conserves or unctuous substances, as is done in the preparation of the Blue mass or Blue pills and Mercurial ointment, or probably better by mixing briskly together a cold solution of Caustic Potash and Calomel. This seems to be, however, a very uncertain and unstable combination, and has a great disposition to be reduced to the state of metallic mercury and the binoxide or simple oxide. Indeed it has recently been announced by M. Guibourt, that in this mixture nothing was formed but the binoxide and metallic mercury, and M. Lefort has confirmed the opinion. I have taken a little pains to test this point myself, and having preserved the precaution suggested by M. Donovan of keeping it excluded from the light, I have set aside the oxide thus formed for many days, and after that time have not been able to detect, by the aid of a glass, the least globule of Mercury in it—thus tending to prove that the Oxygen had really entered into combination with the black particles; nor could I discover the least appearance of the red oxide.

In the case of the pharmaceutical preparations above alluded to,
however, the state of things appears to be very different. From the experiments given to us by Dr. John Warren in his View of the Mercurial Practice—and indeed from the general belief, we had concluded that in these there was the formation of the Black oxide. I was therefore somewhat surprised to see it stated by Mr. Graham, "that there can be no doubt that it is in this divided state, and not as the Black oxide, that Mercury is obtained by triturating it with fat, turpentine, syrup, &c., in many pharmaceutical preparations." I therefore put it to the following simple experiment: I poured a strong solution of Caustic Potash repeatedly upon a portion of strong mercurial ointment that had been standing fully 17 years. After dissolving out all the fatty matters the residue seemed to consist for the most part of metallic mercury and the black oxide. I did not determine the relative proportions, but certainly a large quantity of Mercury was found in the metallic state—but that a good portion also remains as black oxide, I could not deny without doubting the evidence of my senses. Besides, the experiment does not even make it necessary for us to suppose that any of the Mercury was in the metallic state while the compound remained as mercurial ointment. For it is possible that the presence of the Potash in the mixture induced the formation of some highly oxidized organic acid, whose oxygen was obtained at the expense of the Black oxide, and which afterwards united with the Potash.

However this may be, it is very certain that these preparations act upon the system, and produce all the peculiar effects of Mercury; and it seems more reasonable to suppose that the oxide would act more readily than the metal, because more soluble; but we must confess that upon this point there is great uncertainty, for from all that we know of their properties, the Oxide is as insoluble as metallic Mercury, and Calomel more insoluble than either.

This same Oxide is formed when Limewater is poured upon Calomel in place of the Potash, and is the way indeed in which the London Pharmacopeia directs the preparation of this black oxide. I know not whether it has ever been recognized as an officinal preparation; but this mixture of Limewater and Calomel is familiarly known among practitioners as the "Black wash," and has been much used for the cleansing of venereal ulcers, and I believe with good effect, but surely its good effects must be more attributable to the Chloride of Lime which is formed, than to the Oxide of Mercury, and appears to me to be one of those incompatible compounds made by those
unacquainted with Chemistry where the effects are ascribed altogether to a wrong agent.

This Oxide of Mercury in the form of Blue Pills is applied to most of the purposes for which Calomel is used, and seems to produce very nearly the same effects. They are both of them, in my opinion, very uncertain in their operation, but when I have had occasion to use them, I have generally given a preference to this, believing it to be probably milder in its action.

The other combination of Mercury with Oxygen has usually been regarded as a binoxide, although it is now found to contain one equivalent of each ingredient. It is known under various names, as the red oxide, red precipitate, oxide of mercury, mercuric oxide, and is prepared either by oxidating the Mercury at a high temperature, or by expelling all the Nitric Acid from the Nitrate of Mercury by the application of heat. The same Oxide is obtained by mixing together a solution of Caustic Potash and Corrosive Sublimate, but instead of being red, it is precipitated as a powder of a lemon yellow color. When Limewater is used in place of the Potash, we have the same precipitate formed; and this mixture is the Aqua phagedenica of the older writers, and is familiarly known as the Yellow wash, which, like the Black wash already spoken of, has been used for the treatment of ill-conditioned ulcers of various kinds, more particularly those of a venereal character.

It is interesting to inquire into the cause of this difference of color. My own impression had always been that the red precipitate was anhydrous, while the yellow was thrown down as a hydrate, and that this presence or absence of water was the sole cause of the change. M. Millon has recently declared, however, contrary to the observation of M. Schanffur, who has described a hydrate of the peroxide containing three equivalents of water, that a "hydrate is not to be found among the interesting modifications which are presented by the red oxide of Mercury." From his experiments it appears that the two oxides are entirely isomeric, and the difference in color depends altogether upon their states of molecular aggregation, the red being crystalline, while the yellow is amorphous. This change of color from a simple change in the arrangement of alternate molecules is certainly an interesting fact, and is not confined to this combination alone. It is remarkable in Charcoal and the Diamond, and I have seen the Iodide of Mercury suddenly change its color from a simple touch by which its least particle was moved. A similar phenomenon
is witnessed in those toys of unannealed glass, known as Poince Rupert's drops, where the least particle broken off, will cause a sudden and complete disaggregation of the whole mass.

Notwithstanding this perfect identity of composition noticed by M. Millon, these two Oxides exhibit another curious anomaly worthy of notice, and that is a difference in their chemical reactions. For example:—While Oxalic Acid will attack the yellow Oxide directly and produce a white Oxalate, the red Oxide resists completely its action. It may be made to boil in the same solution which attacks so readily the yellow Oxide, without changing in the least degree the red color. So also, in an alcoholic solution of the Bichloride of Mercury, the yellow Oxide is converted by boiling into a black Oxichloride while the red Oxide suffers no change by the same treatment. A similar difference is shown also in the reactions of the Bichromate of Potash.

This red oxide, or red precipitate, as it is more commonly called, acts with great energy upon the body, and is among the most powerful escharotics used in Surgery. It corrodes the part to which it is applied, and may be used with advantage in the cure of all indolent, ill-conditioned ulcers, particularly where we have reason to suspect a venereal taint, and for the destruction of fungous growths.

Probably the most interesting compounds of Mercury, in a medical point of view, are produced from its combinations with Chlorine, forming the well-known substances Calomel and Corrosive Sublimate. The first, or Calomel, is a sub-chloride, formed of two equivalents of Mercury and one of Chlorine. It is obtained by various processes, and I need not stop here to specify them as they may be found in any of our dispensatories, and for a good account of Calomel and its history, I refer with pleasure to an article which was published, by Professor Means, in the first volume, N. S., of this Journal.

Calomel is absolutely insoluble in water, Alcohol and Ether, and upon the maxim that "Corpora non agunt nisi sint soluta," it is difficult to see how it can act at all upon the human body. The only rational explanation is, that it meets in the alimentary canal with some fluids in which it is partially dissolved; and the fluids in the stomach most likely to bring about such a result are the Hydrochloric Acid and the Chloride of Sodium, both of which, with free acetic acid, have been found in the gastric juice. "According to Mialhe, Calomel is in part converted into corrosive sublimate and metallic mercury by muriate of ammonia and by the Chlorides of Sodium
and Potassium, even at the temperature of the body, and hence he believes that the conversion may take place in the primae viae."—(Woods & Bache.) "Dr. Gardner denies the assertion of M. Mialhe, that Calomel is converted into Corrosive Sublimates by Chlorides of the alkalifiable metals, maintaining that it is merely rendered soluble by their solutions."—(Ibid.)

However this may be, one thing seems to be certain, that both this compound and the Blue mass depend for their operation entirely upon the state of the stomach and bowels at the time when they are given, and it is upon this ground that may be explained the impunity that many enjoy from its toxicological effects after the ingestion of the enormous and uncalled for doses of which we have heard and read as having been given in yellow and low typhoidal fevers. In such cases we may reasonably suppose that there is no secretion of normal gastric juice; and again, so completely paralysed are all the parts of the system that there cannot be an absorption by the lacteals or other vessels. In such conditions of the system the Calomel would have no more effect than so much sand, whereas in an opposite condition, when every thing favors, a very few grains would produce effects the most violent. It is said that salivation has been induced by 1½ gr. of Calomel, and I have had my salivary glands very sensibly affected by less than 3 grains.

When Calomel is suspended in water or other fluid, and we pass through the mixture a stream of Sulphuretted Hydrogen, there is immediately formed a black compound, the sub-sulphuret of Mercury, and in cases in which a large quantity has been introduced into the bowels the same result takes place, by which of course the contents of the bowels are blackened, and there is a discharge of very dark colored and generally very offensive faces. Now this effect of Mercury appears to me to have been very badly interpreted oftentimes, as may be seen by reference to the books. These stools have been regarded as the consequence of depraved secretion from the violence of diseased action, and as the harbinger of the peculiarly successful operation of the Calomel: so apt are we to substitute effects for causes. Dark colored stools are often produced in a similar way, under the use of the Subsalts of Iron, as I have often witnessed. The iron may either unite so as to form a subsulphuret, or the better explanation probably is, that it meets in the alimentary canal with gallic acid, derived from the vegetable food taken at the time by which a sort of ink is actually formed. While upon this point, I
would here make the following general remark, and this is, that the color of our evacuations are more frequently owing to the nature of our ingesta than to the nature of our disease, and consequently that in studying to estimate their semeiological values, we should be careful to distinguish diseased secretions and chemical reactions.

Calomel is certainly the preparation of Mercury, which has been most extensively used in Medicine, and has been given in every disease in which this mineral has ever been supposed to be beneficial. Like the Blue pill of the Black Oxide, it is cathartic in its operation when given in doses to an adult of 15 or 20 grains; but as we have already said, it is uncertain in its action, although many persons prefer it to any other cathartic for the certainty and mildness of its operation. I have known other persons who are very much sickened by it at all times, and are made to faint at the time of its action upon the bowels. Calomel is often very beneficial, as an external application, in powder, to obstruct indolent ulcers.

The other combination of Mercury with Chlorine is composed of one equivalent of each ingredient, and consequently is a simple Chlorine of Mercury. It was at one time known as the Bichloride, while Calomel was considered to be the Chloride, but a more careful examination has led to the change of opinion. This is the Corrosive Sublimate or Corrosive Chloride of Mercury of the shops, and is certainly one of the most corrosive poisons with which we are acquainted. It is most commonly obtained by sublimation from a mixture of Sulphate of Mercury and common Salt or Chloride of Sodium, and the chemical changes are beautifully expressed by the following formula:—

\[ \text{NaCl} + \text{HgO, SO}_3 = \text{HgCl} + \text{NaO, SO}_3. \]

When this salt is mixed with the Muriate of Ammonia, Chloride of Ammonium, or Sal Ammoniacum, there is found the well known triple salt, the Chloride of Mercury and Ammonia, a salt which was highly esteemed by the Alchemists, and has received from them the names of Sal Alembroth, Salt of Wisdom, Salt of Art. We are not exactly apprized of those peculiar qualities which entitled it to such distinction. It is said to have been intended "to facilitate the dispensing of Corrosive Sublimate in small doses." If the Corrosive Sublimate is only made milder in its operation by the Sal Ammoniac, it is a preparation still worthy of our attention.

Corrosive Sublimate forms a dense crystalline mass which is very soluble in water, alcohol and ether. It forms an insoluble compound
with albumen, and hence this substance affords the very best antidote, to its poisonous operation, that we possess—while, at the same time, it warns us of the very disastrous results that must necessarily follow the introduction of this poison into the Blood, even in quantities the most minute. It is estimated by Mulder, that to form this compound with fibrine so as to destroy its vitality, it is only necessary for them to unite in the ratio of 6361 parts of the fibrine to 1 of the corrosive sublimate, or in other words, one part of the salt introduced into the blood would convert 6361 parts of fibrine into this insoluble compound, which must either be eliminated by the natural emunctories or be deposited in the tissues as a kind of foreign matter. Now who does not see the great analogy that must exist between this product and that which is commonly known as scrofulous and tuberculous matter, and who is not led reasonably to suspect that the indiscriminate and wanton use of Mercury, in all its forms, may be swelling annually the list of victims to tubercular Phthisis, whose increasing ravages seem to me in some measure to have been proportioned to the increased use of Mercury in the Practice of Medicine. Let those who tamper with this article of the Materia Medica, as a harmless drug, weigh well the question which is here submitted. Liebig says, “It is obvious that if arsenious acid and corrosive sublimate are not prevented by the vital principle from entering into combination with the component parts of the body and consequently from rendering them incapable of decay and putrefaction, they must deprive the organs of the principal property which appertains to their vital condition, viz., that of suffering and effecting transformations; or, in other words, organic life must be destroyed.”—(Agricultural Chemistry.) This subject is possessed of a tenfold interest, when we take into consideration the recent experiments of M. Millon and Laveran, on the permanent retention of metallic substances, but more particularly of Antimony in the vital organs. We will revert to it again when examining the effects of Mercury upon the Body. In regard to this particular form of the remedy, however, we must remark that in those cases where we wish to introduce it slowly into the system, more especially in the Venereal disease, we decidedly prefer the Corrosive Sublimate to any other preparation of Mercury. I have had within a few years past an opportunity of demonstrating its decided value in the disease.

These ordinary compounds of Mercury have of late been superceded in part by a number of new and more fashionable remedies,
which have been brought to light by the labors of Chemists, and like every thing new, each has had its admirers and an appendix of successful cases. I need not do more than briefly to allude to them, making such casual remarks as may be suggested in passing. They will all be found described by Dr. Dunglison, in his work on New Remedies and their principal virtues, so far as known, pointed out. The most of them are combinations of Iodine and Bromine with Mercury. Among the new remedies of Dr. Dunglison, I was surprised to find the Cyanide of Mercury, a compound which has been long known to the chemist, if not used by the physician; and has afforded the best means of procuring the Hydrocyanic or Prussic acid. The best way of obtaining this acid is by heating in certain proportions the Cyanide of Mercury with Hydrochloric acid, or to obtain it, anhydrous Sulphuretted Hydrogen may be used in the place of the Hydrochloric acid. The reaction in this case is expressed by the following formula:

\[ \text{HgCy} \rightarrow \text{H}_{2}\text{Cl} = \text{HgCl} \rightarrow \text{HCy}. \]

—the product being Chloride of Mercury and Cyanide of Hydrogen.

Among the preparations of Mercury and Iodine is one which was first brought to the notice of the physicians of this country by Dr. W. Channing, of New York, in a paper published in the "American Journal of Medical Sciences," many years ago. It was so highly recommended in the paper referred to, that I immediately prepared some of it according to the formula given by Dr. Channing, and used it in a few cases. My experiments with the remedy have been few, and by no means satisfactory. It seems, however, to be an interesting compound, consisting of Iodine, Mercury and Potash, probably of an equal number of equivalents. I am not acquainted, however, with its chemical formula. It is called by Dr. C. the Iodo-Hydrargyrate of Potash.

Of the Bromides, we can say nothing from our own observations. It appears that Bromine unites with Mercury in two proportions, forming the subbromide, and the Bromide. They are both colorless compounds, and bear in many respects a close analogy to the two compounds of Mercury with Chlorine, of which we have already spoken.

Mercury unites also in several definite proportions with Nitric acid. It forms with the black oxide the Nitrate and Subnitrate, the first of which may be obtainee by simply pouring the Nitric acid upon metallic Mercury in the cold. It is insoluble except in an ex-
cess of Nitric acid, and I have found it a useful application to some foul ulcers of a phagedenic character. Their formulae may be found by consulting Graham or Kane.

But, besides these, M. Millon has detected and described four others formed by the action of Nitric acid on the bioside of Mercury, whose formulae I beg leave to give here, as the result of the latest investigations:

1. Syrupy Nitrate, \(\text{AzO}_5\cdot\text{HgO}\cdot2\text{HO}\)
2. Nitrate, crystallized in needles, \(\text{AzO}_5\cdot\text{HgO}\cdot\frac{1}{2}\text{HO}\)
3. Nitrate, crystal. in rhomboidal laminae, \(\text{AzO}_5\cdot\text{HgO}\cdot\frac{1}{2}\text{HO}\)
4. Nit. in crystalline white powder, \(\text{AzO}_5\cdot\text{HgO}\cdot\text{HO}\)

The most interesting compounds of Mercury to the philosophic chemist, however, are probably after all those produced by its combinations with ammonia. Long ago, the Ammoniacal Amalgam gave rise to doubts in regard to the true character of the ingredients of Ammonia—and it has led necessarily to the adoption of a hypothetical radical ammonium \((\text{NH}_4)\) which is entirely isomorphous with Potassium—and which, playing, as it does, so completely the part of a metallic base, in many other instances is supposed to unite with Mercury in the formation of the amalgam. So completely isomorphous is the alum formed with ammonium, with the Potash alum, that Gay-Lussac has made the remark, "that a crystal of potash-alum transferred to a solution of ammonia-alum continued to increase without its form being modified, and might thus be covered with alternate layers of the two alums preserving its regularity and proper crystalline figure."

Another view, however, has been taken of the composition of this Ammoniacal Amalgam, suggested by "the remarkable and apparently peculiar aptitude of Mercury to combine with Amidogen, and by the position which Hydrogen holds among elementary bodies which is that of a metal of the magnesian class. According to this view, then, the Mercury forms the amalgam by uniting directly with Hydrogen, and the Amide of Mercury by uniting with amidogen, so that these two compounds are mixed together. It is here seen how forcibly these combinations of Mercury tend to establish the existence of that class of compounds which are known as Amides, in which the radical is Amidogen \((\text{NH}_2)\)—containing one atom less of hydrogen than ammonia—and making ammonia indeed an Amide of Hydrogen."
We proceed now, in the second place, to notice the effects of Mercury upon the animal system. It seems to have been universally considered by the ancients as a dreadfully destructive poison. Dioscorides describes it as a corrosive that destroyed the stomach and bowels, by eating holes through their coats. Pliny applies to it the words "Venenum rerum omnium," and yet he does most explicitly speak of the use of the Minium or Sulphuret of Mercury in the practice of Medicine. It seems that it was applied to wounds of the abdomen and head, for the purpose of stopping the flow of blood, provided care was taken not to allow it to penetrate internally. His words are as follows: "Quod cum venenum esse conveniat, omnia quae de minis in medicinac usu traduntur, temeraria arbitror: praeterquam fortasss illito capite ventrcre, sanguinem sistendum, done quid penetrat in viscera, ac vulnus, attingit: alter utendum non equidem censeam." Galen, it is said, considered it as a poison, "which was unfit for use as a medicine."

The credit of first introducing it to general use, as a remedy, is ascribed to the Arabian, who are said to have cured diseases of the skin, by an external application of it in the form of ointment. From analogical reasoning, it was afterwards adopted as a remedy in Syphilis. It seems to have been confined principally to those cutaneous diseases until the year 1733, in which year it was used by the physicians of New England, in the treatment of a febrile disease attended with ulcerations in the throat, which was known as the "Throat Distemper." After this, it was used in the treatment of small-pox and gradually its use was extended to febrile and inflammatory diseases in general, such as Pleurisies, Perpneumonies, Quinsies, Rheumatisms, &c., &c.—(Vide View of the Mercurial Practice, by John Warren, M. D. Boston: 1813.) It seems to have gained an important advance in reputation among medical men, from its supposed utility in the treatment of that most formidable disease the Yellow fever. Physicians began at one time to believe that, although they had to deal with a Herculean disease, they had a remedy whose powers were entirely adequate to its complete expulsion out of the system—and the reputed success of Dr. Chisholm and others in the West Indies, and of Dr. Rush in Philadelphia, in the year 1793, soon established for a time the Mercurial Practice in the treatment of all our climate fevers; and by an easy transition it has been since applied to all diseases attended by visceral derangements and more particularly to hepatic affections.
Since that time Mercury has been regarded as the "Sampson"* of the Materia Medica by many practitioners, without which they could hardly practice Medicine at all, and it is almost incredible, the extent to which it has been used in the treatment of almost all the diseases† to which "flesh is heir." In the use and recommendation of the Poison, it seems scarcely to have entered into the minds of its advocates, that if it was powerful for good it might also be powerful for evil; but on the contrary, it seems to have been the general impression, that if it did no good it could do no harm. The use of Mercury in diseases of the East Indies, and tropical climates in general, is well known, and could we trust in full the statements of the many writers upon the diseases of those climates, we must consider it as a sovereign remedy for all Hepatic affections incident to those localities. We remember no writer from Dr. Johnson to Dr. Budd, who has not recommended it highly in these cases, although we are under the impression that there have been some misgivings in the minds of the more recent authors in regard to all the good previously anticipated from its use. Was the bile secreted in too great quantities, as in some fevers "mali moris," Mercury was given to check the inordinate action of the liver—was there torpor in the system and a want of action in this last named viscus, Mercury was given to stimulate the blood-vessels, and the glandular system particularly, so as to arouse the liver from its lethargy, and induce the normal secretion of bile, giving to the remedy in this way "a sort of equalizing or balancing influence over the system."

Now when we come to examine into the evidence in favor of all these reputed advantages of Mercury, it will be found to be exceedingly unsatisfactory to a philosophic inquirer after the truth. Evidence either for or against a remedy must be founded upon statistical data, or facts carefully collected by competent observers; and these facts should be collected, not as against some other remedy or course of treatment, but as against no remedy at all, and no treatment except that which is strictly Hygienic. Or, in other words, to determine

* We are of opinion that the symbol under which Mercury should be represented in Medicine, would be Sampson holding in his right hand the jaw-bone of an ass, with the inscription "the Sword has slain its thousands, but Mercury its tens of thousands."

† To show the extent to which Mercury is used at present by some, I would state that in a late work on Southern Practice, it is recommended in 3-6th of all the diseases treated of, in some form or other of the remedy, and in some stage or other of the disease.
the value of a remedy, we must not compare it with another remedy, but ascertain whether the case has been at all modified by its power, so that without its use the patient must have died. It is by comparing the ratio of a number of cases of the same diseases recovered, to those which terminate fatally, without any treatment except good nursing, to the ratio of the number of cases of the same disease recovered, to those which terminate fatally, where the treatment pursued has been with Mercury and Mercury alone. It must be evident, that to compare one remedy with another, will only give us the relative effects of the two, without establishing the absolute good or bad effect of either, and in this way we may propagate from generation to generation the use of a very bad and hazardous remedy, by contrasting its operation with some other modes of treatment even more incendiary and destructive. Whereas, were we to compare either or both modes of treatment with the treatment which Nature suggests, or even with the nautatory systems adopted by the Homeopathists, we might be led speedily to discard them both.

Now such appears to me to be the blind evidence on which rests the reputation of Mercury in many diseases. It will be found upon a careful examination, that in all cases where it has gained the ascendency it has been by contrasting it with other modes of Practice which were not as good. It may be replied to me, that of two evils we must choose the least, and of two remedies choose the better, upon the ground that "aniceps remedium potius quam nullum;" but I answer that it is the part of prudence and wisdom to choose no evil when you may avoid it, and the maxim is only correct when we must choose the one or the other. Let us refer for an example of the testimony in favor of Mercury to the declarations of some whose experience, as given to us by Dr. Warren, in his work above referred to in the treatment of Yellow fever. In the Island of Trinidad, Dr. Clark observed that in the Yellow fever of 1793, "where there was time for salivating Mercury was always successful." In order for his testimony to have full force, he should have been prepared to tell us how many, under similar circumstances, would have died under the care of a nurse. In Dominica, Dr. Fullin asserted that the proportion of the mortality under the treatment by Mercury was about 1 to 5, and 1 to 2 under any other treatment. From this we only legitimately draw the conclusion that the other modes of treatment were exceedingly bad—because farther on we learn that in Antigua, where D. Byam used Mercury, in the decline of the epidemic, the propor-
tion of deaths was 1 to 2. In the Island of St. Thomas the success with Calomel was not great. "In the Royal Artillery the mortality was greater than had ever been known in a tropical climate; yet, compared with other modes of treatment, it was on the whole the most successful." This last quotation is peculiarly in point, and most clearly shows that in the use of Mercury we have not yet arrived at the best mode of treatment.

But the chief support of the Mercurial Practice is to be found in a by authority, prophetical, IPSE DIXIT, passing from generation to generation, and not upon the true basis of well-attested and collated facts. This evil in Medicine has long existed, and I am glad to say has been detected, and its total abandonment may soon be predicted when we see the effects which are being made by M. Louis and his associates to bring about the "numerical method" and other correct modes of observation. This being the case at present, however, we may adduce similar evidence against its use that we have found in favor of it. The views of Dr. R. Jackson were directly opposed to its use in Yellow fever, except as an evacuant. "From the use of it in St. Domingo, he concluded, that in slight cases of Yellow fever when the mouth is affected, the fever is observed to be diminished, but this seldom takes place till the disease has abated; for when the disease is violent, no salivation can be produced. Hence he advances the opinion that salivation instead of being the cause of the abatement of the disease, is only a signal of its departure." With these views we perfectly coincide, as will be perceived by our remarks already made when speaking of Calomel. Dr. Lind's experiments are also corroborative of this opinion. "Fifteen cases were treated with Mercury from the first day—five died, in three of whom salivation took place—five, who were not salivated, recovered. The other five who recovered were salivated, but, as usual, not till the violence of the symptoms had passed off." Other cases might be brought forward of a similar kind, but we forbear—our object now being simply to show the equivocal nature of the evidence in favor of Mercury as a remedy in Yellow fever. The same remarks will apply, however, with equal force to it as a remedy in all our idiopathic or essential fevers.

But is there better evidence in favor of its powers as an antisyphilitic? There has been a time when, to question this, would have been to subject ourselves nearly to the suspicion of lunacy. This has been heralded as one of the great triumphs of Medicine, and we
had congratulated ourselves that we had found at least one specific in the cure of disease—but oh! the inquisitorial daring of French Philosophy! Even this is denied as an achievement of our Divine Art; and the sensualist is deprived of the satisfying reflection that, if it is easy to be posed, it is easy to be cured!!!

Some have gone so far as to assure us that Mercury is entirely unnecessary in the treatment of this disease. Others have labored to prove that many of the very worst symptoms connected with the secondary forms of the disease are entirely the effects of mercurial remedies—although it is admitted on all hands, I believe, that these symptoms do sometimes occur where Mercury was not used, proving the very close resemblance, in external form, between venereal and mercurial diseases. Most of the anti-mercurialists admit, however, that there are some cases which yield more readily to the mercurial than to any other mode of treatment.

We have not time nor space to enter fully upon this question here. It must be acknowledged that it is still in a very unsettled state. We have not the data upon which we may rest any thing like a just conclusion in regard to the comparative merits or advantages of the two modes of Treatment. Nor have practitioners carefully distinguished between the Symptoms which are truly venereal and those which have resulted from the poisonous operation of the remedy itself. I think, however, that the following propositions will be generally admitted to be true:

1. That there are many simple cases of the Venereal Disease which may be treated successfully without Mercury.

2. That there are many cases of so called secondary Syphilis where the symptoms are hardly distinguishable from those of true Syphilis, which are entirely the result of the poisonous effects of Mercury.

3. That there are secondary symptoms resulting from the venereal virus alone, where no Mercury had been used.

4. That there are many cases of the Venereal which will not yield to the simple treatment, which are found to yield speedily to the use of Mercury.

5. That in judicious hands Mercury may still be considered as the best and most efficacious remedy which we possess in the treatment of Syphilis.

Let us now take a hasty glance at the peculiar modus operandi of this Medicine and a few of its more peculiar and specific effects.

Mercury, like all other medicines, must now be considered as act-
ing upon the system through two media—the Nerves and the Blood-vessels. No one has ever doubted the sympathetic action of this or any other remedy; but it has been common to deny its entrance into the blood-vessels. Experiments and observations have, however, completely refuted the objections urged against it, and I believe that none who has kept pace with the progress of Science will now oppose the opinion. "Dr. Hamilton long ago detected globules of Mercury in the milk of a salivated woman. Foureroy's authority may be adduced to confirm a similar fact, when he declares it as his opinion that the Mercury found in the bones arises from the superabundant part of the oxygen being absorbed by the stomach."—(Warren op. cit.) Orfila declares that Corrosive Sublimate is absorbed in certain cases, and says that it "may even change its nature in such manner as to appear under the form of globules in the large cavities of the body, in the viscera, in the joints, in the bones, in the sheaths of tendons: as has been proved by a number of authentic facts."—(A general system of Toxicology, by M. P. Orfila, vol. 1, p. 47.) "M. Pickel, Professor of Chemistry at Wartsburg, obtained metallic mercury on distilling the brain of a person who had been long taking mercurial preparations."—(Ibid.) "Zeller states that he found Mercury in the Bile; and Wepfer, Laborde, Brodbelt, and others, mention instances in which this metal was found in the bones of persons who had died after several tedious mercurial courses."—(Eberle. Therapeutics, vol. 2, p. 299.)

M. Oesterlen has performed a number of experiments on animals with the view of determining this question, and the results obtained are as follows:—

1. "It is indubitable that Mercury may pass in the metallic state through the parietes of the blood-vessels, since minute globules of it have been found in the subcutaneous cellular tissue and in the veins permeating it. The globules have never been discovered in the epidermic layers, but only in the deep-seated layers of the dermis, near the blind extremities of the hair follicles, also in these follicles and in the sudoriferous canals. 2. The metallic mercury rubbed in the skin or introduced into the intestinal canal, may give rise to injurious effects by passing into the current of the circulation. It is not easy to determine in what manner the metallic mercury, when once introduced into the circulation, becomes changed and modified, or how it then acts. At the side of the shining globules, M. Oesterlen found always a number of dull and dark colored corpuscles, which
Mercury and its Compounds.

resemble a good deal the granules of a mercurial oxide: these were found to be not acted upon by alkalis, but to be dissolved slowly in nitric acid after being ground down into a fine powder. In the urine and in the bile, the mercurial globules did not exhibit any appearance of decided change. 3. Minute globules of this metal, in the state of fine division, may traverse the capillaries without producing any inflammatory stasis: their presence in the vessels does not seem to influence the formation of the blood, or the development of the sanguineous corpuscles. 4. Small quantities of Mercury, taken inwardly or applied to the skin, appear to pass chiefly into the parenchymatous substance of the spleen, liver and kidneys, and to be discharged by the last two emunctories."—(Med. Chir. Rev., vol. 45, p. 500.)

But the most interesting mode of introduction into the system is by the skin and lungs, of the mercurial vapor which seems to be continually passing off from this metal even at the common temperatures of the air. This is obvious from the effects of Mercury upon the systems of the "workmen employed in mercurial mines, gilders, silversers of looking-glasses, constructors of barometers, thermometers, &c." In corroboration of these effects Orfila gives a most interesting observation. "A man was in the habit of gilding from morning to night in a room sufficiently large, but low, where he slept, himself, his wife, and his children. Having taken but little precaution to guard against the effects of mercurial vapors, he was first visited with chancres on the mouth in very great numbers; his breath at this time became fetid; he could neither swallow nor speak without dreadful pains. Similar accidents, cured by cessation from his employments and appropriate medicines, appeared three or four times in succession, without any other symptoms; but in a short time this evil was accompanied with a very violent trembling, which first attacked the hands, and afterwards the whole body. Agitated by perpetual convulsive movements, he was neither able to speak nor to raise his hand to his mouth without striking himself. . . . . At the expiration of a certain time there formed an abscess in which globules of Mercury were manifestly perceived."—(Orfila. op. cit. 1st: p. 93.)

Orfila asks, after narrating this case, whether metallic mercury ought to be considered a poison? and answers it, very properly, as follows:—"It appears to me that metallic mercury acts as a poison, whenever it remains sufficiently long in the alimentary canal to undergo a considerable degree of division, or to be absorbed. It is well
known that moisture and grease are capable of attenuating exceedingly the molecules of Mercury to such a degree that they become black." He believes that in this state it may be absorbed, and its poisonous action developed, and cites the effects of mercurial ointment when rubbed upon the external surface of the body.—(Ibid., p. 97, 98.)

Among the peculiar effects of Mercury is certainly that of Mercurial Tremor, of which the above is one case; and similar cases are by no means uncommon. A case of a man 34 years of age, who dealt in Mercury, was admitted into La Charite Hospital in May, 1834, with the exact symptoms above described. Dr. Christison mentions the case of a barometer maker and one of his workmen, who were accidentally exposed one night during sleep to the vapors of Mercury, from a pot on a heated stove, from which the latter was affected with salivation, which caused the loss of all his teeth, and the former with shaking palsy, which lasted his whole life. Dr. Darwin describes the case of a man 62 years of age, in whom the disease had existed for 25 years. Many of the symptoms of this disease assimilate it to the Chorea of young people, and the analogy to some of the symptoms of poisoning in dogs, by using antimony, as shown by the experiments of M. Millon, is most striking.—(Med. Chir. Rev. vol. 29th, p. 230.)

Salivation is an effect of Mercury which should be considered as peculiar; for although other remedies may excite it, yet none so surely as this. How it is brought about we do not certainly know, or whether it be a local or very general effect of the metal. It has commonly, I know, been supposed to show the general constitutional operation of Mercury. Some have supposed the action specific—others, who deny the existence of any specifics in Medicine, suppose that salivation is brought about by a general stimulant operation of the medicines, by which all the glands were alike excited to increased action, and that the bile from the liver is equally increased in quantity by it. From our views of the operation of a gland in the act of secretion, we cannot suppose that a simple increase in the mechanical actions of dilatation and contraction, would be sufficient to explain an increase in the bile.

Salivation is produced with much more difficulty in some constitutions than in others, and it seems indeed impossible to produce it at all in very young children. When pushed to such an extent as to produce it in them, it is sometimes attended with the most disastrous
consequences. Instead of causing salivation, and passing out of the system in that way, it seems to get into the bones, and causes the most fearful caries and sloughing of the bones of the cheeks, alveolar processes, cheeks and gums. Cases of this kind have been narrated to me by medical men, and others, as having occurred in this county, when the Mercurial Practice was most in vogue, in the treatment of our autumnal fevers.

It was at one time a prejudice among medical men, that the use of cold water, while under the influence of Mercury, would bring on salivation and other evil consequences, and I have heard of children dying in our autumnal fevers who were never allowed a drop, and whose last intelligible cry was water! water! I have no doubt that exposure to cold and moisture, which checks suddenly the transpiration of the skin, might prove injurious while using Mercury, but I know that there is no danger from the simple drinking of cold water.

We beg leave to give here a few remarks of Dr. Beck, upon the Effects of Mercury in the Young Subject. "If," says he, "salivation occurs so rarely in children under a certain age, then it is evident that it can never be made a criterion by which to judge of its influence on their system. To attempt, therefore to produce this effect, as we do in adults, is manifestly improper. . . . . The fact that Mercury may prostrate and destroy a child, even though it does not cause salivation, it is to be feared is not sufficiently appreciated at least by some. We have known Calomel given without weight or measure to a young child, and the reason assigned to justify was that it could do no harm because it would not salivate. Now it appears to me that no opinion can be more unfounded, and no practice more mischievous. . . . . The use of Mercury in young subjects, as an alternative, should in all cases be conducted with great caution. There is no practice more common than that of continuing the use of this agent in small doses for a considerable time, and certainly none which is more liable to abuse. Under the idea that the dose is so small, and from no salivation appearing, we are apt to infer that even if the medicine is not doing any good it is certainly not doing any harm. . . . . Every practitioner must have been aware of cases, in which, in this way the article has been unnecessarily and injuriously continued. In bowel complaints, under the idea of altering the secretions, it has frequently, no doubt, helped to keep up the very intestinal irritation which it was given to correct. In other cases it has developed the latent tendency to other diseases,
such as Scrofula, Phthisis Pulmonalis, &c. In adults we know this to be very often the case. In the use of Mercury in young children great care should be exercised in ascertaining as far as possible their constitutional peculiarities. Whenever the patients show indications of Scrofula, or where there is an hereditary predisposition to Consumption, great caution ought to be exercised in the use of Mercury in their offspring. Mercury should be administered with great caution in cases where a child has been sick for a considerable length of time, and when the strength of the child has been very much reduced. In this state of constitutional depression a single cathartic dose of Calomel sometimes proves fatal. The too common practice of giving Calomel as an ordinary purge on all occasions is certainly unjustifiable. From the facility with which it may be given, it is unquestionably resorted to in a great number of cases where it is certainly unnecessary, and in a great number where it positively does harm. Now in this way there can be no question that the use of it has laid the foundation for the ruin of the constitutions of thousands.—(American Jour. Med. Sci., No. 26, x. s., p. 509.)

Salivation has been very commonly supposed to effect a complete revolution in the system, and this opinion has been distinctly advanced by Dr. Warren. He says, "a necessary consequence of the highly stimulating power of mercurial oxides upon the system is the universal revolution which the constitution must undergo whilst subjected to their influence," and he goes on at some length to explain the reason of this necessary change. The grand principle upon which it is effected seems to be the breaking up of all old morbid associations, by the substitution of a new and more powerful action, brought about by the Mercury. Intimately connected with this general revolution in the system, is the notion of the alterative action of Mercury, when given in small doses for a long time, even without producing salivation. It must be admitted that, at best, these opinions are hypothetical, and appear to me to indicate clearly a sort of blind credulity in an occult operation of the remedy which is totally inexplicable and peculiar to it. I have never been able to discover any greater alterative or revolutionary action from Mercury in the cure of diseases, than from any other remedy. Every remedy must be supposed to alter, more or less, the actions of the system, whenever it affects the cure of any disease.

In the same way that Mercury excites the salivary glands has it been supposed to excite the liver, and consequently, in most diseases
of this organ, it has been held up as the chief remedy. From my own observation, I must say, that I have not been able to discover any particular difference in their action on the liver, between Mercury and any other active cathartic, and consequently do not believe that its action on this organ is either peculiar or specific. I have seen as much bile pass off under the use of milder cathartics, and more under the use of Tartar Emetic, than that of any other remedy I have ever used; and were I to judge from my own experience alone, I would not hesitate to declare that this preparation of antimony acted generally more decidedly upon the liver than any preparation of Mercury I have ever used.

Among the toxicological effects of Mercury may be mentioned a peculiar fever, which has received the name of Hydrargyría, a form of Neuralgia or Chronic Rheumatism known as Mercurial Rheumatism, in which the metal is deposited in the fibrous tissues and cartilages of the joints—various eruptions upon the surface of the body in the form of Eczema, Herpes, Meliaria, &c. The Mercurial Tremor we have already mentioned and this sometimes passes into a state of complete Paralysis.—(Med. Chir. Rev., vol. 39, p. 510.)

But among the worst effects of Mercury is a kind of Erysipelas or Erythema, which is known as Mercurial Erythmism. I am inclined to believe that this is nothing more nor less than the Hydrargyría or Mercurial fever, attended with erysipelatous symptoms, which, according to its severity, may be simple or phlegmonous, and I will terminate what I have to say upon the effects of Mercury by narrating the following cases of this affection, in which is shown at the same time a most unaccountable susceptibility to the action of this poison. The following are my notes of the cases, taken down from the mouth of the individual in August, 1838.

Mrs. R——, a respectable lady of this county, aet. about 50 years, presents a curious example of idiosyncracy of constitution, in regard to the action of Mercury. The following instances can hardly be regarded as accidental coincidences, but must be looked upon as effects produced from bare contact with this poison.

A. The first time she ever had Erysipelas was after taking a dose of Calomel, which had been prescribed by a physician. The Calomel was taken at night; and the next day, "from her head all over her body she was as red as scarlet."

B. The next time, a vial containing Calomel was broken. She emptied the Calomel into a plate, and, in order to free it from pieces
of glass, she sifted it through cloth. The next day her neck was covered over with splotches of Erysipelas.

C. She once made use of a solution of Corrosive Sublimate, for the purpose of destroying bed-bugs, (Cimex lectularius,) and of course her hands were more or less wet by it. In a short time, after this, she had the same erysipelatous eruption.

D. After weighing off some Calomel one day she got some on her hands—the next day she was affected with the Erysipelas.

E. The last time that she had been affected in this way, was in consequence of being in a close room with an individual (a lady) who was salivated. While in the room she was taken with a Chill and Nausea. She returned home, went to bed immediately, and spent a restless night—on the next day she was covered with Erysipelas, which was so violent as to confine her to bed for three months. It assumed the phlegmonous character. The inflammation terminated in abscesses over the glutci muscles, and sinuses were formed which were healed with difficulty. She, however, eventually recovered, and is now enjoying good health.

ARTICLE XXXVII.

Case of Traumatic Tetanus cured by Strychnine. By P. M. Kollock, M. D., of Savannah.

Juba, a negro girl, belonging to J. B. B., of Savannah, while running about without shoes, stepped upon a piece of board which happened to contain a nail, and received a punctured wound of the sole of the foot—the nail entering near the heel, and penetrating to a considerable depth. Disregarding the accident, she continued to go about for three days, when she began to feel pain—which induced her master to scarify the part slightly and apply a poultice. This treatment failing to relieve the pain, which continued to increase with rapidity; on the 4th of July last I was called in to her. I found her in great agony, and immediately incised the part freely and deeply, inserting lint moistened with spts. terebinth, over which a laudanum poultice was applied, and a teaspoonful of laudanum administered by the mouth. In about an hour from this time I was summoned to her, and found that Tetanus had commenced. The paroxysms of spasm came on at intervals of two or three minutes and lasted two and a half or three minutes.
During the paroxysm (which was generally ushered in by a slight tremor of the eye-lids and the discharge of tears from the inner canthus of the left eye) the head and body were bent backwards and a little to the right side—the hands were clenched—the upper and lower extremities somewhat rigid, and the jaws firmly closed. Respiration extremely slow, and at times almost imperceptible—intelligence extinct.

B. Calomel gr. x. Tr. Opii 3j., every two hours—tobacco poultices to spine and abdomen. After continuing these poultices for some time, they were removed, and a blister was applied, extending the whole length of the spinal column.

This treatment was continued without any abatement of the paroxysms in force, or any extension of the intervals between them, for the space of six hours—when a tobacco enema (two leaves of tobacco steeped in half-a-pint of boiling water,) was administered. This was followed by vomiting, great distress, clammy sweat, great prostration, insensibility, and stertorous breathing.

In a short time these symptoms became less intense—produced a perfect subsidence of spasm—but the insensibility and stertor continued.

B. Ol. Ricini §j.; blisters to calves of legs; cold applications to head; enema of sol. mur. sod. Discontinued calomel and laudanum.

She remained in this state about three hours, when the spasms returned with increased violence.

July 5, 8 o'clock, A. M. The treatment was resumed. B. Cal. and Tr. Op., as before. In a short time after the administration of the first dose, the tobacco enema (made rather weaker) was repeated. Up to this time, she had taken 50 grs. cal. and 3vj. tr. opii.

12 o'clock, M. Spasms continue; but rather diminished in force and frequency. B. Repeat tobacco enema; continue calomel and laudanum. Diet, gruel and rum, rich soup.

Half-past 5 o'clock, P. M. Very much the same.

Finding that the treatment had not advanced the case beyond a point of very slight improvement, believing that it had received a very fair trial, and forming an extremely unfavorable prognosis of the case, I determined to resort to a different remedy, viz., Strychnine, and accordingly, made the following prescription:

10 o'clock, P. M. The Strychnine has produced no alteration in her condition—a very severe paroxysm occurred while I was with her, which lasted twenty-two minutes. Continue the treatment, unless the peculiar effects of the remedy are manifested by a twitching or jerking of the extremities, or there is a cessation of the paroxysms of spasm.

July 6, half-past 8 o'clock, A. M. She has had no severe paroxysm for several hours; has taken gr. ss. Strychnine, which has produced little or no twitching. A short paroxysm occurred during my visit.

I dressed the wound in the foot, inserting lint moistened with spts. terebinth.

12, M. Has had no spasm since last visit.

I had directed the medicine to be given every hour until twitching or jerking of the extremities should be produced; but through some mistake, this was not done, and only one dose had been given since last visit.

R. Strychnine gr. \(\frac{1}{4}\) every two hours.

11 o'clock, P. M. Juba has had no spasm for five hours; she has taken \(\frac{1}{4}\) gr. of strychnine since two o'clock. She is very much disposed to sleep, which sleep seems natural, and she is easily aroused.

R. Continue the medicine every two hours.

July 7, half-past 8 o'clock, A. M. Juba has passed a quiet night; no spasm for fourteen hours; is entirely sensible; says that she feels better. Has had a free operation from the bowels. Has taken \(\frac{1}{4}\) gr. strych. since 2 o'clock yesterday.

R. Continue treatment.

July 8, 9 o'clock, A. M. Juba has passed a quiet night—is very much disposed to sleep. Can this be the narcotic effect of the laudanum? She has taken none since the 5th. She has had no spasm for thirty-four or thirty-five hours. The bowels have been freely acted upon through the night. She has taken the medicine every three hours. She is salivated. The medicine has produced very slight twitching.

R. Continue Strychnine gr. \(\frac{1}{4}\) every four hours.

9th. Juba has continued free from spasm.

R. Strych. four times during twenty-four hours.

10th. Same. Continue the medicine three times a day for three or four days.

12th. Has had no spasm for six days. The medicine has produced no twitching.
R. Discontinue the medicine after to-day.

July 19th. I visited the patient to-day, and found her sitting up, sewing; complained of no pain nor any uneasiness whatever. The wound of the foot has healed entirely, and there is no tenderness in any part of the foot.

At 3 o'clock, P. M., of this day, I received a message, stating that she had a return of her spasms. On visiting her, I found her in a pretty strong tetanic paroxysm—which was said to have supervened soon after drinking freely of iced water—having complained first of pain at the praecordia, and vomited.

I immediately resumed the Strychnia gr. $\frac{1}{2}$ every two hours; the first two doses to be given at the interval of one hour.

I called to see her at half-past 7 o'clock, P. M., at which time she had taken three doses. She had no return of spasm after the first dose.

R. Continue the medicine every two hours.

July 22. There has been no return of spasm.

R. Continue the medicine three times a day for a few days.

August 18th. I have heard of no return of the disease up to this date, and presume that she may be considered cured.

It was suggested to me by a medical friend, who had failed to cure a case of traumatic Tetanus with strychnine, and who feels more confidence in calomel and opium, that it was probably the combination of the three which proved efficacious in this case; and I was obliged to admit the possibility; but the occurrence of the relapse, and its very speedy termination under the use of strychnine alone, without the intervention of a single grain of calomel or opium, will doubtless warrant us in the belief that the cure in this case, at least, is due to strychnine. I am not prepared to assert that the like fortunate result will occur in every case of tetanus, or even in the majority of them, treated with this alkaloid; but I am disposed to speak favorably of it—and as it is pretty well ascertained, that the failures, in such as are treated with other remedies, so vastly outnumber the cures, that the former have become the rule, and the latter the exception; it would be well to resort to it more frequently.

I have employed the remedy without success, in one or two cases of trismus nascentium. They were pretty well advanced before I was permitted to see them. As this is a disease very closely resembling tetanus in many respects, it might be well to make farther trials with the remedy.

In regard to trismus, I may be allowed to remark, en passant, that
I believe the most fertile cause of the disease to be, the manner in which the navel is treated after the separation of the umbilical cord.

The practice of midwifery in this neighborhood, and I believe, at the South, generally, is almost entirely in the hands of females—those most usually negroes—and where, in some rare cases, a physician is called upon to officiate, the treatment of the navel is left entirely to the nurse—by whom, as soon as the cord separates, a piece of " scorched rag," or some other irritating substance is applied; and in the majority of cases this is the only attention which the navel receives. Of course, a very considerable collection of foul matter must occur at this part, a powerful cause of irritation to the very sensitive nervous system of a new-born infant.

It has always been my custom to enquire, particularly, into the condition of the navel—to make repeated ocular examinations, and to prescribe the mode of dressing, myself, notwithstanding the occasional broad, and not to be misunderstood hints, on the part of the sage femmes, that I was meddling with what was no business of mine; and that they did not thank me for my officiousness. The dressing which I direct for the navel, after the separation of the cord, is simple cerate; and I cannot recollect a single instance of trismus, occurring in a child which has been delivered by me.

In confirmation of the opinion which I have expressed, in regard to the importance of employing a suitable dressing for the navel, I will relate the following incident.

The negro midwife of a neighboring plantation, was instructed by myself; and among the directions which I gave her, was that of dressing the navel with simple cerate (after the separation of the cord) twice a day, sponging off each time, the purulent discharge with warm water, and applying over the dressing a good compress and bandage. For some time after she commenced practice she was sufficiently successful; but after a time trismus made its appearance, and every child which was born, died with it in 8 or 10 days after birth, I was generally sent for, and arrived in time, either to find the infant dead, or in articulo mortis.

After this had occurred rather too often, to be considered the result of unavoidable accident, I instituted an investigation into the conduct of the midwife during her attendance, and enquired particularly, in regard to her manner of treating the navel; and I was informed that she had been, latterly, in the habit of dressing it with " burnt rag!" She was severely reprimanded, for this departure from the
instructions which she had received from me, and threatened with punishment, if they were not attended to in future cases. It is now two years since this occurrence—the usual number of births have occurred on the place, and there has not been an instance of trismus.

This may be called a coincidence; and I may be reminded, that “post hoc, ergo propter hoc,” is not always a good rule. But I am disposed to think, that the majority of medical opinions are not based on any better evidence.

---

ARTICLE XXXVIII.

**Treatment of Hooping-Cough with the Iodide of Potassium.** By H. F. Campbell, M. D., Demonstrator of Anatomy in the Medical College of Georgia.

Iodide of Potassium, at the present day, may be said, with some degree of qualification, to be used in some form of almost every disease. Its great efficacy in the multitude of Syphilitic disorders is indisputable, and since the memoirs of M. Lugol, its applicability in the treatment of the vast number of diseases arising from a certain state of constitution termed the Scrofulous Diathesis, is fully established. Many forms of Neuralgia also, not due either to a syphilitic or scrofulous origin, yield readily to its use,* and of late its success in the treatment of Spasmodic Asthma has been indeed cheering to those afflicted with this truly distressing malady.

The close pathological affinity between Spasmodic Asthma and Hooping-cough, and the success of the remedy in the former disease, induced me, during the prevalence of the latter in our city, to use Hydriodate of Potash in a very violent and obstinate case that came under my treatment.

**Case.**—Mr. N. G., a gentleman of nervous temperament, aged about 30 years, had had hooping-cough for about six weeks previous to my seeing him, and had been fully treated after the ordinary plan of emetics, nauseants, demulcents, antacids, sedatives, &c., with but little temporary and no permanent benefit whatever. His condition was then one of extreme suffering; he had frequent and violent at-

---

* The control of Hydriodate of Potash over the nervous system, in disease, is amply attested by Drs. Elliotson, Bardsley, Hudson, and many others. Vide also, article by Dr. Bennett, in the London Lancet, and one by Prof. J. K. Mitchell, in the Medical Examiner.
tacks of spasmodic coughing, which, as is characteristic of the disease, would end in complete exhaustion of air from the lungs, leaving the patient much fatigued and almost powerless; but superadded to these ordinary symptoms there was an unusual irritability of the mucous membrane of the fauces, pharynx and larynx, which indeed was the most distressing item in his ailments. This irritability was so great, that in swallowing or speaking, and even in ordinary respiration, unless these acts were performed with some degree of care, he would experience an attack of suffocation, amounting almost for the time to complete asphyxia. His attacks of coughing were frequent and violent, often terminating as above described in spasmodic closure of the glottis.

_Treatment._—On first seeing the patient the following prescription was made:—\[R.\]

- Extract: Belladonna, - - - grs. viii.
- Syrup: Scillae, comp., - - - ʒij.
- Mix, and add of Acid Hydrocyanic, - gtt. 16.

Of this take one drachm, three times daily.

This prescription produced little or no mitigation in the symptoms, and was finally discontinued on account of the unpleasant effects of the belladonna, viz., vertigo, blindness, efflorescence, &c. The above symptoms being still as decided as ever, the following emulsion was given:—\[R.\]

- Potassii Iodidi, - - - grs. 80
- Gummi Acatiae, - - -
- Sacch. Alb. aa - - - ʒij.
- Water, - - - ʒij.

Mix, and take one drachm (equal to 5 grs.), three times daily.

In a short time all the symptoms had considerably amended, and at the expiration of ten days the patient was so much better that he thought he could omit taking medicine; but experience proved the contrary—he was obliged to resume it again, and continued about two weeks longer, (though not so frequently or in such large doses as before,) at the end of which time he was entirely relieved of the cough, and also of the spasmodic contraction in the muscles of the glottis.

_Remarks._—From the works of Dr. Marshall Hall, and others, we may infer as the pathology of hooping-cough, a highly excitable condition of a portion (the superior laryngeal) of the pneumogastric nerve, together with an inflammation of the mucous membrane of the larynx, pharynx, &c. It is also known, that in this disease the secretions of the stomach and bowels become much vitiated and
irritating, (almost invariably acid); and also, that these secretions, after their formation, serve very much to protract the disease, by the irritation they produce in the excitor nerves (filaments of the pneumogastric) of the stomach, being conveyed by the reflex function of these nerves to those supplying the mucous membrane of the respiratory apparatus; hence, in these cases we generally have a paroxysm of vomiting simultaneous with that of coughing—because on such occasions, the latter act is produced by a common cause which is adequate to excite equally, coughing and vomiting. The cough may at other times be excited by external causes applied to the mucous membrane of the larynx, or perhaps by an accumulation of excite ment in the nerves that supply it. Further: these deranged secretions, which are most probably the result of disordered innervation in the secretory filaments of the sympathetic which supply the mucous membrane, by the irritation they produce in the excitor branches of the pneumogastric ramifying in this same membrane, become in turn a cause of the continuance of the disease.

Now for many years the bases of the most successful plans in the treatment of hooping-cough have been emetics and alkalies,—the first giving temporary relief by the removal of the disordered secretions, and the second by neutralizing them in the stomach, prevented the further derangement of this organ by their irritation. More recently, the oxide and nitrate of silver have been found beneficial, the efficiency of which, reasoning from their application in other diseases, (epilepsy, for example,) depends upon their tonic effect on the nervous system.

Considering the above pathology of hooping-cough as correct, in connection with its heretofore therapeutics, the curative action of the iodide of potassium is readily comprehended—viz: it fulfils, in some degree, the indication of an antacid,* and above all, as is well established, it is an excellent alterative tonic to the nervous system.

In conclusion it may be said, that though rationally, we would consider the iodide of potassium a very useful remedy in hooping-cough; still, no doubt, there are many cases wherein, from constitutional peculiarity or other causes, it would be not only nugatory, but wholly inadmissible,† and while these observations on its use have

* That is, when there is free acid in the stomach, sufficient to displace the hydriodic acid. The effect of this agent upon the absorbent and secretory apparatus has not been here dwelt upon, as it is sufficiently apparent not to require remark.

† As is known to be the case in its application to some cases of syphilitic disease.
been somewhat extended, the object has been more to instigate fur-
ther trial of the remedy during the present prevalence of hooping-
cough in our vicinity, than to claim for it anything like infallible
efficacy in the disease.

ARTICLE XXXIX.

Poisonous Properties of Sulphate of Quinine. By E. M. Pendle-
ton, M. D., of Sparta, Ga.

In the August No. of the Southern Medical and Surgical Journal,
in the Review of the American Journal of the Medical Sciences, is
the notice of a case of Poisoning by the Sulph. of Quinine, from the
pen of Dr. Baldwin, of Montgomery, Ala. This case, though some-
what unique, reminded me so forcibly of a singular one in my own
practice, that I have been induced to lay it before the medical world,
as confirmatory of a very important and dangerous property, existing
in a medicine, more extensively used perhaps than any other in the
Southern latitudes.

On the 17th of October last, I was called to visit the child of Mr.
J. D. S., sub nocte, several miles in the country. I found my pa-
tient (a lad about four years old) laboring under a severe fever, which
had supervened upon a slight chill. The usual alternative and anti-
phlogistic treatment, for autumnal fevers, was instituted on the 20th,
which was his best day: I found him measurably clear of fever, and
left a few powders of quinine for him to take the next morning, to
prevent, if possible, the exacerbation of fever. I forget the size of
the powders, but do not suppose there was over a grain in each, to be
taken every hour.

On the 21st, about noon, I was sent for in great haste, with the
message that my patient was much worse. I found him in about the
following condition:—His pulse remarkably slow, with a full heavy
beat; his tongue perfectly clean and natural; his breathing, if I re-
member right, rather labored. He was not remarkably restless, but
lay in a dull comatose state, except when aroused, and then he evin-
ced no disposition to talk or notice anything. The pupils of his eyes
were dilated, beyond any thing I have ever seen. In fact this was
the first symptom that alarmed the parents, so striking was it to
every one that saw him. I doubt not that he was totally blind, but
could not ascertain, owing to the age of the child, and his indisposi-
tion to notice any thing. If I remember aright he was deaf also.
I learned that he was entirely free from fever during the night and early in the morning, and seemed quite lively and much better. But after he had taken the second or third powder, (I forget which,) these alarming symptoms began to come on, when they stopped the medicine. I was forced to attribute the symptoms to the quinine, as he had taken nothing else, though I had never seen such an effect produced by it before, yet I could conceive how it might be done in certain constitutions, especially of children. An experienced physician, to whom I communicated fears, referred it to worms, which I doubted at the time, and now feel confirmed in my diagnosis, from the case recorded by Dr. Baldwin.

I instituted no treatment whatever, only cold applications to the head, of which he complained very much, (if I mistake not,) with the suggestion that he take pink-root tea freely, after the unpleasant symptoms had subsided. They remained, I think, about two hours, when the pupils began gradually to assume a natural appearance, and all the other symptoms to give way. I found him quite convalescent the next morning, free from fever and cheerful. The spigelia was given freely, but no worms were brought, which served still farther to confirm me in the belief that the unpleasant effects in this case, were superinduced by an over-dose of the sulphate of quinine.

PART II.—REVIEWS AND EXTRACTS.

Preparation, Physiological Action of Ether, &c.—(Half-Yearly Abstract of the Medical Sciences.)

Nature and Mode of Preparing the Agent.—The agent by which insensibility to pain has been achieved is rectified sulphuric ether; other ethers have also been used, as the chloric and acetic; the former is said to be equally potent, and less disagreeable. We have personally tried perfectly pure nitrous ether, but we found it to produce a painful oppression of the chest, with incessant coughing which remained for an hour or two, but subsided after a few inhalations of the pure sulphuric ether. In order to produce satisfactory results, it is necessary that the ether should be perfectly pure; the sulphuric ether of commerce, which contains sulphuric acid, alcohol, or the acetic or formic acids, is quite unsuited for the purpose. The mode of preparing pure ether is thus laid down by Dr. Jackson. "The basis of all the ethers is an hypothetical radical called ethule, which is represented by the formula $C_4H_5$, and symbol $\text{Ae}$. Pure sulphuric ether is regarded as an oxide of ethule, and is represented by the formula
C$_3$H$_5$O; its symbol is Ae O. It is prepared by decomposing highly rectified alcohol by means of sulphuric acid. Five parts of alcohol of 90 per cent. are mixed with nine parts of oil of vitriol in a vessel of copper or iron, placed in cold water. The action of sulphuric acid on alcohol is catalytic; bisulphate of the oxide of ethule is formed, which, by elevation of the temperature and brisk ebullition, is decomposed, and the oxide of ethule passes over in vapours, the sulphuric acid remaining with a portion of undecomposed alcohol, the water which passes over the vapours no longer uniting with the ether. The distilled liquid is next to be treated with an alcoholic solution of potash to neutralize the acids, and to render it slightly alkaline. It should then be redistilled in a water-bath, and the operation should be arrested as soon as the ether has attained a specific gravity of 0.72 at 80° F. The specific gravity may be still further reduced by allowing it to stand for some days, over dry chloride of calcium, and then redistilling it in contact with that substance. Ether thus prepared should not change the colour of litmus paper.  

Mode of Exhibiting the Ether; Precautions.—However trifling the amount of injury has been in proportion to the frequency with which ether inhalation has been practised, there cannot be a question that an agent capable of inducing such remarkable and potent effects ought not to be regarded as a "scientific toy," or even to be employed at all by persons unacquainted with the principles of physiology and pathology. The precautions which we are disposed to consider requisite are as follows:

1st. Never to exhibit the ether vapour without having previously auscultated the heart and lungs.

2nd. Never to employ it in persons who have signs of obstructive disease of the heart to any amount, or of dilatation of its cavities, or whose heart is feeble even though not disproportioned.

3rd. Never to employ it in persons who have any considerable portion of a lung unfitted for respiration, as from hepatization, tubercular deposit, pleural effusion, &c.

4th. In persons with short necks, with tendency to cerebral congestion, its employment is not without risk; also, (perhaps) in those with disposition to insanity, or other recurrent disease of cerebral origin.

5th. No operation of consequence should be performed under the influence of ether without a preliminary "trial" exhibition.

Rules for exhibition.—Directions as to the method of exhibiting the ethereal vapour have been given by Mr. Robinson,* who was one of the earliest experimenters in this country, by Mr. Braid, M. Bur- guieres,† and others; these are, however, all in effect nearly the same, and may be thus briefly stated.

1st. The ether employed should be the purest washed sulphuric ether.

2d. The patient should be allowed to respire atmospheric air alone.

---


† Med. Times, May 15.
for a few moments if the apparatus is so formed as to allow of it, if not the nose should not be closed until several respirations have been taken, and the patient continues to breathe without trepidation.

3d. The ether should not be turned on in a full jet at once, but the stopcock should be so regulated as gradually to accustom the bronchial tubes to the vapour.

At this time coughing is apt to ensue, especially if the ether be not perfectly pure; this symptom, however, soon subsides, or can be moderated by a regulation of the jet of the ether.

4th. Surgeons differ in opinion as to the exact point at which inhalation should be suspended; we believe that for surgical purposes, Mr. Robinson’s test as afforded by the state of the eye, will be a sufficiently good guide.

5th. In prolonged operations, it is necessary to alternate respiration of pure atmospheric air with that of ether vapour; this is accomplished by removing the clip from the nose, or still better, in those instruments which are so made, by shutting off the ether and turning on the air.

Oxygen, &c. an Antidote.—Under the impression that the specific effects of ether vapour upon the system are due to its power of producing a state analogous to asphyxia, it has been suggested by Dr. Jackson, and subsequently by Mr. Robinson, that oxygen gas should be kept ready to be inhaled in case of the occurrence of formidable symptoms. Mr. Hooper, acting upon the suggestion, has supplied his inhaler with the means of furnishing oxygen at pleasure.

On the other hand, Dr. Gull concludes, from a series of experiments on the lower animals, that oxygen has no antidotal power, that in fact if an animal be etherized and then made to inspire oxygen, it does not recover more speedily than if it respired atmospheric air alone.* Nearly the same opinion is expressed also by Dr. Snow.†

We believe that the best treatment for hyperetherization, if we may be allowed to coin the word for the occasion, would be the administration of diffusible stimulus, friction over the region of the heart, dashing cold water on the chest so as to excite deep inspirations, and, in aggrivated cases, blood-letting to a small amount.

Administration of the Vapour of Ether by the Rectum.—M. Pirogoff has stated that all the narcotic effects of ether may be as readily produced by causing the vapour to pass into the rectum, as by inhalation, and he believes that this latter mode of exhibiting it will speedily be superseded. His proceeding is first to empty the rectum by a common enema, and then to introduce an elastic pipe, which is connected with some receptacle, as a syringe, which is half filled with ether. This reservoir is then covered with a towel wet with warm water, and evaporation speedily commences, and the vapour mixed with air passes into the bowels. The professor states that the breath is impregnated with the odour of the ether in ten minutes, and that all the symptoms of narcotism are induced in five minutes. This

modification is undoubtedly worthy of trial, as by it all the objections heretofore brought against the ether inhalation on the score of asphyxia are completely done away with.*

General Effects.—The effects of the inhalation of ether, as of the nitrous oxide, vary considerably in different individuals. In some, but we believe a comparatively insignificant number, great excitement is manifested at the commencement of the process; we have seen patients exhibit all the violence and even fury which is occasionally produced by the nitrous oxide; if, however, inhalation can be persisted in, this excitement speedily yields to a state of torpor and ultimate insensibility. The writer of an article on ether inhalation, in the "British and Foreign Med. Rev." (April, 1847,) pronounces his belief that the excitement is frequently attributable to the too gradual administration of the vapour, and advises that in all cases it should be given in as full a jet as the bronchial tubes will tolerate. In by far the majority, however, no such excitement is manifested, the patient passing gradually into a state of profound insensibility.

By some experimenters, and more particularly those of the French school, the process of etherization is divided into three periods.

In the first period, the inhalation is accompanied by a sensation of stinging or heat in the bronchia, which excites coughing. This, however, speedily subsides, and the patient passes into the second period, in which any movements which the patient may have been making are replaced by perfect quiet. The respirations are short, and the expirations prolonged and forcible. The arms fall relaxed, and the eyelids begin to tremble in a manner very characteristic, and if the eye be uncovered, the pupil will be seen to oscillate, with a tendency to turn upwards and inwards. At this time perception of external objects fails, the head drops on one side, and the patient passes into the third period, or period of complete insensibility. The pupil is now completely turned up under the eyelid, and the patient takes no notice of pinching or other means of rousing his attention. This has been termed the surgical period, and is the moment usually chosen to commence an operation.

The first effect of ether upon the circulation is to accelerate it; the pulse subsequently falls, and in the third period loses power as well as frequency.

The physical effects of ether are remarkable, and, as in the case with the nitrous oxide, appear to be modified according to the age, habits, or propensities of the individual. Thus the little child dreams of its playthings; the sportsman is following the hounds or catching the imaginary salmon; the game-keeper we have known to dream of a conflict with poachers; the laborer that he is getting drunk in a pothouse of which he is a habitué. In females, especially those of a warm temperament, emotions have been manifested which are ill adapted for general inspection; in some it has been evident by their

movements that they were under the influence of the fully-developed sensations of the venereal orgasm. These untoward displays are, however, we believe, very unfrequent; but it is well that the operator should be aware that their occurrence is not impossible.

A difference of opinion exists as to the conditions of the sensorium during etherization. Some maintain that the sensation of pain is not abolished, but that the recollection of it only is lost, and certainly this opinion is in some degree countenanced by the cries and contortions manifested by patients who have, when their sensibility has been restored, asserted their perfect ignorance of the operation performed upon them. But, on the other hand, it must be remembered that neither ejaculations nor struggling is a proof of sensation, as we witness both in the epileptic, whom no one, we presume, will maintain to be conscious during the paroxysm. This question is, however, after all, one of mere curiosity; whether the patient be utterly unconscious of the knife or only forgets its pang, the effect is the same upon his mind; he believes, at least, that he has not suffered, and the subsequent condition of his system in the majority of cases would lead to the conclusion that he has not.

Time required to produce Insensibility.—This varies mainly, we believe, according to the degree of skill with which the vapour is exhibited. We have seen it produced in two minutes, and only imperfectly induced at the expiration of twenty; in the latter instance we have generally observed some imperfection, either in the instrument or in the application of the mouth-piece. Insensibility is more rapidly produced in children and women than in men, and the period appears to be abridged by repetition of the inhalation.

Period during which Insensibility remains.—This also is subject to variation; the average duration may be stated to be from two to six minutes. Sometimes, and especially in those ill-managed cases in which the patient is more suffocated than etherized, he does not perfectly recover his consciousness for half an hour or more. The restoration is sometimes gradual, at others sudden, the patient instantly starting up as from a dream. He is for a moment or two somewhat incoherent and staggers about as if half drunk. No ill effects are left behind in the majority of cases; but in some, more or less headache remains for the rest of the day.

Physiological Effects.—No point in connection with the inhalation of ether has given rise to more discussion than that of its physiological action, some regarding it as identical with asphyxia, others with intoxication, others again as different from either. We shall not attempt to reconcile these conflicting opinions, for the reason that we believe that our present acquaintance with the subject is not sufficiently advanced to enable us to do so; we shall content ourselves with the analysis of the principal communications which relate to the subject, leaving our readers to draw their own conclusions.

M. Longet has executed a very elaborate series of experiments upon dogs and rabbits, the results of which are given in a lengthened paper
published in the "Archives Générales," Mars, 1847. These may be thus briefly recapitulated:

1st. There is complete momentary suspension of sensibility as well in all the parts of the cerebro-spinal axis which usually manifest sensation as in the nervous trunks themselves.

2d. The action of ether is more stupifying than that of alcohol, which latter merely deadens without abolishing the sensibility of the nervous centres.

3d. Ether abolishes momentarily but completely the reflex action of the spinal marrow and medulla oblongata.

4th. In animals this effect of ether on the spinal marrow may be in a measure controlled or prevented by strychnine.

5th. The cerebral functions are constantly suspended before those of the spinal marrow, and are re-established before them.

6th. Ether, in the living animal, enables us to isolate the seat of sensibility from that of the intelligence and of the will.

7th. The action of ether on the nervous centres may be so gradu-
ated as to produce two stages, which I demonstrate respectively—
1, the period of etherization of the cerebral lobes; 2, period of ether-
ization of the annular protuberance.

8th. The true surgical period corresponds to the etherization of the cerebral protuberance.

9th. The death of animals from ether seems to be due to asphyxia.

10th. As soon as complete insensibility declares itself the arterial blood becomes of a dark colour.

11th. From experiments performed in conjunction with M. Blan-
din, it would appear, that the continuation of inhalation for eight minutes after complete insensibility has been induced will cause death.

M. Flourens has likewise experimentalized upon the effect of ether upon the nervous centres; and as respects the order of succession in the phenomena of insensibility agrees closely with M. Longet. By a more extended study of the effect of the agent upon the spinal marrow he decides that sensation is first abolished, and then motion; but that in some instances both functions are lost simultaneously.*

In an essay on the physiological action of ether, read before the Glasgow Medical Society, Dr. Buchanan expresses his belief that the vapour is absorbed by the lungs, and becoming mixed with the blood, operates directly upon the heart and brain. He explains the difference of action of the vapour inhaled and ether taken fluid into the stomach, upon the known immiscibility of ether with water, and the fact that when taken into the stomach it becomes after absorption so diluted by the various currents of blood which it meets with in its upward course to the heart, as to be rendered almost inert. When inhaled, on the contrary, it goes direct to the heart, mixed with the blood of the pulmonary veins only.†

A paper on the physiological action of ether, by Dr. Black, of

* Encyclopaed. des Sciences Méd.
† Med. Gazette, April, 1847.
Manchester, appears in the "Provincial Medical Journal,"* in which its modus operandi is explained upon the theory that the vapour is made to permeate the air-cells in virtue of the increased tension produced by the temperature of the body. When it has gained access into the circulation, he conceives that this tension still continues, and "when the distending agent reaches the brain in the current of the circulation, the elastic force meets with a counter-pressure in the resisting case of the calvarium; its tension, therefore, becomes increased, and the consequence is that the cerebral mass suffers compression even to paralysis of some of its functions."

Effects of Ether upon the Blood.—Some direct experiments to elucidate the effect of ether inhalation upon the blood have been recorded by Mr. Pring:† but they merely tend to confirm what many, the writer among the number, have observed during operations, viz., that the arterial blood loses its florid colour. The fact, however, it must be stated, is denied by M. Leassaigne, who has given an analysis of blood before and after inhalation. He decides:

1st. That specimens of blood taken before and after inhalation [it should have been taken during the process] does not differ sensibly in colour or as to coagulation.

2d. The serum and clot offered the following difference:

<table>
<thead>
<tr>
<th></th>
<th>Clot,</th>
<th>Serum,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before inhaling</td>
<td>65-46</td>
<td>34-54</td>
</tr>
<tr>
<td>After ditto</td>
<td>59-69</td>
<td>40-31</td>
</tr>
</tbody>
</table>

100-00

3d. The clot appears less consistent before than after inhaling.

4th. The globules, fibrin and albumen are unaltered.‡

Our personal experience as regards the colour of the blood, is in accordance with that of Mr. Pring: the same fact is also distinctly confirmed in the experiments of M. Amussat.

Application of Ethereal Inhalation in Surgery.

It is not our intention here to take any notice of the numerous instances of the successful applications of ether vapour in the art of dentistry, but to allude only to the more severe operations in which it has been employed. We may remark, however, en passant, that the general exhibition of so potent an agent by a class of men the majority of whom have no pretensions to physiological or pathological knowledge, without repeated accidents, is one of the strongest proofs of its comparative innocuity.

It is impossible to give anything like a correct statement of the

* April 7, 1847.
† Lancet, May 1, 1847.
number of cases in which ether has been employed in surgery, for as
soon as the first blush of novelty had passed away, practitioners ceased
to record their operations. We have, however, notes of upwards of
one hundred cases in which inhalation has been followed by the most
perfect success as regards the abolition of pain, and the majority of
which have been represented as progressing favourably at the time of
their report. Of the ultimate result of many of these cases no men-
tion has been subsequently made, and we are, therefore, bound to
conclude either that they terminated successfully, or, at all events
that death, when it did occur, was at a period so distant from the
time of operation as to preclude the idea of its connection with the
administration of ether. Among these operations are several of the
most formidable character, such as lithotomy, amputation of the thigh,
leg and arm, hernia, reduction of old dislocations, urethroplasty, &c.,
besides the minor but equally painful operations for removal of tu-
mours, removal of venereal warts, phymosis, evulsion of nails, necro-
sis, castration, &c.; operations have also been successfully performed
for cataract, entropium, squinting, and other affections of the eye.

M. Burguières gives a table of 211 operations in the French hos-
pitals, in which ether has been administered, and appends to it some
remarks on the comparative mortality of the different classes of op-
erations with and without ether, which are much in favour of its exhi-
bition. For instance, in the case of amputations, he shows that the
general mortality of cases operated upon in the ordinary way has
been, between the periods of January, 1836, and January, 1841, 332
in 858, or 2 in 5 cases nearly. Of amputation performed with the
aid of ether he records 45, of which 12 proved fatal, being an average
of 1 in 4. Again, descending to particulars, M. Burguières analyzes
a series of amputations of the same kind, including the thigh, leg,
and arm; in those performed with the ether the deaths have been 2
in 5; without it, in the period above alluded to, the mortality was
3 in 5.*

We are not able to offer any definite account of the effect of ether
inhalations upon the consecutive phenomena of operations, but it may
be stated that in the few instances in which such effects have been
recorded they are of a satisfactory character. Many surgeons have
noticed that the depression of the system immediately succeeding
capital operations has been much less than where the patient has not
had the pain annihilated, that, in fact, the “shock” has been less; others have seen reason to believe that the reaction, the traumatic
fever, is less than in ordinary cases. M. Jobert has, moreover, stated
that the local inflammation has proved less, and that union by first
intention has thus been prevented. This cannot be looked upon as
in its favour.

On the other hand, it is but fair to state that it has been thought
by some that abolition of contractility in the muscles is adverse to
the formation of a good stump, and others have feared that consecu-

tive hemorrhage is rendered more probable by the increased fluidity of the blood. We have not, however, met with any record of a case which justifies this apprehension.

Application of Inhalation of Ether in Practical Medicine.

The vapour of ether as yet has been used therapeutically in but a small number of diseases, and in comparatively few cases only of these; we shall therefore be able, without much sacrifice of space, to give a tolerably comprehensive account of its effects in this department of the profession.

Tetanus.—From the consideration of its prominent property of abolishing pain, the attention of medical men was naturally soon turned towards its exhibition in those diseases in which pain is a marked feature; and among these tetanus was suggested as a disease in which its powers were especially worthy of trial. An opportunity of making the experiment having offered itself in the writer's own practice within a very short time of the introduction of ether inhalation into this country, it was readily adopted as an experiment, but without any anticipation of benefit, as he was at that time of opinion that the effects of ether were not able to reach the spinal marrow. The result proved that as far as its effects upon the disease is concerned that opinion was correct, for, instead of alleviating the spasms, the act of inhaling most distinctly induced and aggravated the paroxysms.

The case, which is reported elsewhere,* is as follows:—A man aged about 60, but of remarkably fine and athletic proportions, ran a nail through his boot into the sole of his foot, near the ball of the great toe, while walking across some old timber. The accident gave him no uneasiness until the expiration of a week, when he complained of stiffness in the neck, and placed himself under the care of Mr. Coe, a surgeon of Bury St., Edmunds. The next day the tetanic symptoms were general, and my co-operation in the treatment of the case was requested. On visiting the patient, about eleven in the morning I found the jaw completely locked, the spasms frightfully violent, and considerable opisthotonus; in fact, every symptom was present of tetanus of the most acute character. Our treatment was commenced with the Cannabis Indica, full doses of which were with difficulty got down; but this medicine was for a period omitted in favour of the ether inhalation, which we determined to essay. A common bladder and pipe being furnished, and two ounces of the purest ether we could obtain being put into it, the patient was got into a bath at 180°, and the inhalation commenced. The warm water had partially relaxed the beard-like rigidity of the body, and the poor fellow expressed some relief, when the attempt to insert the pipe again excited a strong spasm. Being, however, anxious to persevere, he contrived to push it into his mouth; but the first breath he drew aggravated the spasms in a tenfold degree, the body became perfectly

opisthotonic, foam issued from the mouth, and the man altogether presented so frightful a spectacle that we might fairly have been excused had we desisted from that moment. We, however, after allowing the effects to subside, made one more attempt, when the recurrence of the same symptoms convinced us of the worse than uselessness of the proceeding.

It is, however, in reference to this case, important to state that, as it happened before any more effectual apparatus had been devised, the ether was exhibited by means of a common bladder and pipe. Whether, with one of the inhalers now in use, the result would have been different, it is, of course, impossible to state.

The above is not the only case of tetanus recorded, in which the symptoms have been aggravated by ether inhalation; one has recently been mentioned by M. Roux, in which death was, in his opinion, evidently hastened by the remedy.

On the other hand, we have some cases of tetanus to relate, in which inhalation either relieved only, or, to all appearance, was the means of cure. Thus Dr. Brady relates the following case:

"A man, aged 26, after a fall, by which he hurt his back, complained next day of a feeling of stiffness of his neck and throat, which gradually increased. After a restless night he awoke suddenly, complaining that his jaws were closing. This increased with rapidity, and on the following day he came under Dr. Brady's care, in a state of complete tetanus. The inhalation of ether was suggested and tried. When he had inhaled for about a minute and a half, his eyelids were observed to drop suddenly, and his face to assume an expression of repose; upon which the mouthpiece was withdrawn, and being asked how he felt, he said he was relieved. The mouthpiece was then reapplied, and he continued to inhale until he fell back in the bed with his muscles relaxed. He lay thus, apparently in a calm sleep, for about four minutes, during which he exhibited no feeling of pain when pinched. Upon waking the spasms returned, when it was deemed advisable to have recourse to more energetic treatment, and the inhalation was, without, as it appears to us, any sufficient reason, omitted. A few hours terminated the case."*

Another case, in which ether relieved the paroxysms, is reported by Mr. Broughton. The patient was a man whose arm had been shattered by the falling of a stone, and for which amputation had been performed. The symptoms of tetanus came on some days after, and were at first treated with opium and belladonna, but without relief. Ether was then inhaled, and he was soon under its influence. All contraction and spasm ceased, and he slept for ten minutes. As soon as he became sensible the spasms returned, but not with such violence. He again inhaled with the same beneficial result. He took it a third time, and it again relieved him. A subsequent spasm instantly destroyed him.†

* Dublin Med. Press.
In the two succeeding cases the inhalation of ether in tetanus was followed by recovery.

The first case is extracted from the "Clinique de Marseilles," and is stated to have been under the care of M. Pertusco, surgeon to the Hospital of St. Maurice, at Turin. The disease was, we presume, of the idiopathic form, as no mention is made of any wound. The teta-nic symptoms appeared on the 4th of February, and on the 13th had attained their greatest intensity, when the ether inhalation was adopt ed and repeated several times; the spasms became gradually less severe, until they ceased altogether.*

We do not look upon the above instance to be one in which much confidence is to be placed, as the details are far from satisfactory. The second, which is reported in the "Provincial Journal," is better authenticated.

"Charles White, aged 12, became the subject of a scalp wound, which gave rise to tetanic symptoms. The ether was exhibited by Mr. Hawkesworth, and its narcotic effects were speedily induced. In a few minutes the jaw fell, and the whole body assumed a relaxed and passive condition. He remained quiet for a short time, but in about an hour the spasm and rigidity returned, but not so violently as before. Recourse was had to the ether a second time with good effect; and during each successive application the patient became more relieved. His recovery was speedy, and no medicine, beyond an occasional aperient, was exhibited."†

Insanity.—Ether inhalation has not yet been tried to any extent in insanity. M. Cazenave, of Pau, and M. Jobert, being the only persons who, to our knowledge, have employed it. It was given by the former to a female patient, who had rested neither night nor day for five months, and was the means of inducing tranquility, without being followed by any injurious consequences.‡

M. Jobert also used it in a case of simple insanity, with the effect of inducing sleep, and restoring, temporarily, a state of rationality.§

Neuralgia.—Cases of the beneficial influence of this agent in neuralgic affections have been recorded by Mr. Morris, Mr. Semple, and one also by M. Henoré.

Mr. Morris's first case was one of neuralgia of the first pair, for which, in former attacks, all known remedies had been unsuccessfully tried. In using ether, Mr. Morris did not find it necessary to produce complete insensibility, but it had the effect of dissipating the pain almost instantaneously.

The next case was one of neuralgia of the testicle, in which the pain was removed with equal success, though, from some imperfection in the apparatus, the effects of the ether were not so rapidly induced.||

Mr. Semple's patient suffered from severe neuralgia of the head.

|| Medical Times.
and face, to an aggravated degree, and had derived no benefit from any Medicine, internal or external, which she had taken. At the time of inhaling the pain was of a most excruciating character; but on her recovery from the ethereal narcotism it had lost its severity, and subsided into a dull but bearable feeling of pain. The acute pain did not return.*

Spasmodic Asthma.—Dr. Willis† and Mr. Cantrell‡ have both mentioned their success with the vapour of ether, in the treatment of spasmodic asthma. The former writer further states that he had long been in the habit of using it previously to its recent introduction into practice.

Hooping-cough.—Dr. Willis also speaks favourably of its powers in this disease.

Laryngismus Stridulus.—An instance has recently occurred in the writers experience, in which benefit was derived in a very severe case of laryngeal spasm, by the use of a sponge saturated with ether. This case is reported by Mr. Image, of Bury St. Edmunds, with whom the case was seen by the writer in consultation.§

Inhalation has also been used successfully in Colica Pictonum, by M. Bouvier, and in Dysmenorrhæa.||


If we were to judge of a disease from the painful sensations that it causes, rather than from the danger it involves, we should be forced to class sea sickness in the rank of the scourges of humanity. This affection kills no one, but causes those affected by it to suffer severely. Many marine officers have been compelled to give up the life they had chosen, because the habit of navigation could not relieve them from the occurrence of nausea every time the sea became rough and agitated. Some persons have renounced revisiting their country and their families, sooner than expose themselves again to what they suffered from sea sickness on their first voyage. Every scholar knows that Cicero preferred giving his head to the assassins of the triumviri, rather than remain a few moments longer a prey to the pain of sea sickness on the vessel which bore him far from the shores occupied by his enemies. A morbid state, capable of imposing the sacrifice of all that man holds most dear, the sacrifice of ambition, that of the natural affections, and even of life, surely merits the attention of the physician. Upon the nature of sea sickness, and the rational means to employ with the view to avoid and combat it, nothing positive is as yet known; a proof of which lies in the diversity of

opinions on this subject. We do not think that the true theory of it has as yet been given.

Nearly all writers have considered the affection in a reverse sense of what is really the case:—for example, in attributing sea sickness to a sanguineous congestion of the brain; or, assigning it a cause in fact incapable of producing it, in referring it to shocks or agitations that are communicated to the intestines by the motion of the vessel. To form an estimate of these two opinions, the experience and theory of M. Pellarin during his service as marine surgeon, seem deserving of attention, as approaching nearer to the true cause and theory of this disagreeable affection. The inversion of sea sickness, far from being accompanied by the ordinary symptoms of congestion, a flushed countenance, vascular turgescence, full pulse, sensation of heat and tension in the cranium, throbbing of the temporal arteries, the eye brilliant and injected, &c., is rather characterized by the opposite state—a paleness of the face and hands, a retreat of the blood from the surface, a depressed pulse, general hyposthemia, a dull, glassy eye when the affection is at its highest point. M. Pellarin has never observed any of the accidents of cerebral hyperemia in individuals affected by sea sickness. If during great efforts of vomiting the blood flows to the head for the moment and colors the face, it is only the instantaneous result of these efforts; the paleness soon reappears, with all the other characters of the anæmic state, just as it happens when one is under the influence of tartar emetic, taken in such a dose as to produce vomiting.

Another consideration which ought still more to remove the idea of the sanguineous cerebral congestion, is that one suffers less when lying down, than when standing; and less still, if, instead of remaining simply in a horizontal position, he has his head lower than the rest of the body.

As to the explanation which would make this affection to depend upon the shocks impressed upon the intestinal mass, this resists examination no better than the first. The trotting of a horse shakes the bowels much more than the pitching and rolling motion of a vessel, yet it never causes anything that resembles sea sickness. Sickness from riding in a carriage is of the same nature as the last; it is like the disagreeable sensations caused to some persons by swinging. This sickness is sooner felt in a carriage suspended with springs, than in a hard jolting cart, which shakes the organs much more than an easy carriage. One may make upon himself the experiment of the mechanical shock impressed on the intestinal mass, by agitating the floating portion of the abdominal viscera in his hands, by giving them successive impulsions, either from below upwards, or in any other direction, and he can never cause by these manœuvres anything analogous to sea sickness. Compression, a kind of kneading of the stomach when distended by food, may sometimes cause the expulsion of a portion of its contents, but it does not resemble that strange uneasiness and profound prostration which characterize sea sickness.
The other explanations ordinarily given for sea sickness—such as the sanguineous congestion of the brain, the shaking of the abdominal viscera; that this affliction has a cause altogether nervous, depending principally upon the nerves that excite the epigastric and abdominal viscera, &c., throw no light on the question.

M. Jobard, of Brussels, without doubt has reason in saying that the essential cause of sea sickness is purely mechanical. However, he goes too far when he adds that the odor of the vessels does not the least contribute to excite it. Although this state of uneasiness may be caused by the movements of the vessel, yet it is not less true, that whatever excites repugnance, the odor of the tarry materials, the emanations that come from the hold and other low parts of the vessel, the sight of persons vomiting, all these impressions second the nauseous influence of the mechanical cause of sea sickness, and tend to produce it, from sympathy. Moreover, the proofs that sea sickness depends essentially upon the motions of rolling and pitching, are so evident that it is not worth the trouble to cite them. The nausea arises under the influence of these movements, and is generally proportioned to their extent and quickness. It is felt less in the centre of the ship, near the foot of the mainmast, because the double motion is less there than at the edge, especially at the extremities where the pitching is most considerable. In a hammock or frame suspended so as to have as little friction as possible, which rests always in the direction of the perpendicular, and consequently not subject to the different inclinations of the vessel, one nearly escapes being sick. The production of vertigo and nausea which precedes the vomiting, may in part be imputed to the impressions resulting from the sight of objects which appear to rise and fall alternately in relation with the vessel. Regarding the horizon continually oscillating and moving, or the steerage of the vessel, or the water that seems to fly along its sides, is sometimes sufficient to determine the crisis of sea sickness. From this follows the opinion that it is especially by the eyes that sea sickness affects the economy. Nevertheless, as some have pretended, the visual impression is not the essential cause of the nausea, for it is equally experienced in obscurity of night, and by blind persons.

M. Pellarin has not remarked so striking a difference as M. Jobard, and many others, between the influences of rising and falling, and he affirms that when one is forward, the crisis of the nausea takes place at the moment this extremity rises. Whatevery it may be, M. P. is disposed to admit what a marine officer recently told him. It is in the rising motion or ascension that the nausea commences, but it is in that of descending that the nausea is exasperated and acquires all its intensity. The following is the theory of M. Pellarin. Sea sickness ought to be attributed to the trouble caused in the circulation of the blood by the alternate movements of inclination that the ship undergoes; either lateral rolling; or antero-posterior, pitching. This trouble has for a result, not to congest the brain, as Wollaston
pretends, but, on the contrary, to deprive it of a sufficient quantity of blood for the normal stimulation of the nervous centre. That which is experienced in sea sickness is in fact analogous to what often happens in arresting the flow of blood in persons who are bled while sitting or standing, and who at the time they faint are taken with a disposition to vomit, and really do vomit. M. P. does not deny that by reason of the general diminution of the circulation there may be a stagnation of the venous blood in the cerebral sinuses, but it is especially in the want of a sufficient excitation of the nervous centres by the arterial blood that the primordial phenomenon of sea sickness seems to consist. Observe a person seized by sea sickness; his face becomes pale, his extremities cold, his nails turn blue as at the debut of intermittent fever. What he experiences resembles much the effects produced by the smoking of the pipe or the cigar, on persons who are not accustomed to smoke. The pulse becomes small, and there is an extreme prostration of the intellectual and physical faculties. There is a hypotonic influence in both cases, by the narcotic action of the tobacco in one case; by the diminution of the circulatory force of the blood in the other. What individuals best resist sea sickness? Very young children, those who are at the breast, in whom the heart is relatively more voluminous, and the circulation more active than in adults, are not sensibly incommoded by the affection. Without being wholly exempt, animals experience it less than men, because with them the brain is nearly in the same horizontal plane as the heart, and it is not rare to see the poultry in their first voyage, present nearly all the signs of this affection, almost to vomiting, when the sea is rough. Among the adult passengers, those who take the least exercise, and who go on deck in the breeze the least, remain the longest under the influence of sea sickness. And among persons equally habituated to sea life, those who by their functions or rank have the least corporeal activity, are more liable to return of nausea than the common sailor who works the vessel, who mounts the masts and yards, and is exposed to more tedious movements than those on deck. Dulness of spirits and lassitude, a cold drizzling rain that cools the skin, and diminishes the circulation, are predisposing causes. Towards the close of sea sickness, when the nausea and vomiting begin to leave some respite, one is inclined to somnolence, as after hemorrhages. Is it not by a sedation of the same kind that infants are quieted and put to sleep by rocking them? In fine, M. P. concludes that whatever raises the force and accelerates the rhythm of the circulation, prevents or diminishes the liability to this affection. Strong and frequent respirations act thus, according to the testimony of M. Arango, who warded off sea sickness until the fatigue of the respiratory muscles obliged him to renounce this prophylactic means. M. Jobard and many others have recommended a girdle which compresses the abdomen at the base of the chest. This in truth alleviates, but not because it confines the intestines, but because it contributes to push the blood towards the
brain. It acts in the same manner as a person lying down with the head low, a position that is sufficient to dissipate the nausea of persons affected by syncope, or that after blood-letting, which state presents a striking analogy to sea sickness. Moreover, a proof that compression of the chest and abdomen is not a sovereign remedy, is, that corsets do not prevent women from being affected by it. In these two comparative states (hypothymic nausea, after blood-letting, and maritime nausea), the impression of a sharp breeze is equally favorable, and the first symptoms have been sometimes overcome by going on deck, and receiving the direct action of a brisk current of air. To verify the theory of M. Pellarin, if those who are placed in circumstances that cause sea sickness should have large cuppings from the lower limbs, they would experience the first attacks sooner, as in this case there would be two concurring causes to deprive the brain of the normal afflux of blood that is ordinarily received. Another mode of verification that M. P. has not employed, is auscultation applied to the large vessels of the neck; we are inclined to think that the bruit de soufflet ought to be heard in individuals who are affected by sea sickness.

M. P. recognizes an analogy between the nausea produced by the motions of a vessel, and the nausea and vomiting of women during the first months of pregnancy; that is, at an epoch when the womb becomes the centre of a sanguineous afflux, and consequently diverts from the brain a portion of the vivifying liquid that it received. Many women have declared that nothing resembled more the nausea of the commencement of pregnancy than that they experienced the first few days at sea. Another circumstance which strengthens this theory is, that generally pregnant women are rarely taken with vomiting while they remain in bed, and, on the contrary, often so taken, when they change the horizontal to an upright position. Why are women more nervous? why have they odd tastes and irresistible desires, during the period of pregnancy? Is it not because the nervous system is at this time less supplied with blood, and that the blood, as every one knows, is the moderator of the nerves. A similar cause produces the greatest susceptibility among women during the menstrual period. To cite an example—a lady, who had never been sea sick during many voyages, experienced it severely in crossing the English Channel when she had one of her periodic evacuations.

To resume the conclusions. First the sickness produced by the sea, by riding in carriages, by swinging, are all phenomena of the same nature, determined essentially by the influence exercised on the circulatory march of the blood in the movements that the body undergoes under these different circumstances. Second, this influence has its principal effect in diminishing the ascending force of the excitatory liquid in the aorta and the arteries branching from it; from this results a hyposthenic state of the brain by anemia or hypohemia. Third, the insufficient excitation of the cerebral organ determines, by sympathy, spasmodic contractions of the diaphragm, vomitings—
which have a particular tendency to reconvey the blood which is wanting towards the nervous centre. These efforts are a crisis which takes place in a conservative end. They manifest themselves not only in sea sickness, but in many other circumstances where the brain becomes suddenly deprived of its normal supply of blood; for example, in persons not affected by phlegmasia who are blest.

_Treatment._—There are two orders of means to be employed. The first consists in removing one’s self as much as possible from the cause, i.e., from the motions of the vessel, in remaining in a recumbent position, in a hammock suspended without sensible friction at its points of attachment. The second has for an end to combat the effects of the cause on the organism. It acts especially to this end in stimulating the circulatory function by all the agents susceptible of increasing its energy. Thus, a tonic regimen, active corporeal exercise for some days preceding embarkation. At sea, if the weather permits, one ought to keep on deck, in the breeze, make large inspirations, walk quickly and until he perspires or is fatigued; or, better still, to engage in some hard exercise, even with the sailors in working the vessel. Hard work, that which requires great muscular effort, is the surest prophylactic against sea sickness. The girdle has also its advantages in contributing to force the blood towards the head, and perhaps in seconding the contractile force of the heart. Before the manifestation of the nausea, warm and exciting drinks are favorable. Thus coffee, tea, with the addition of a little brandy, may give a greater disposition to resist it, in stimulating the circulation and maintaining a diaphoretic state of the skin. Among the medicines, those which have an analogous effect on the economy may be administered with advantage, such as opium, saffron, acetate of ammonia, &c. When the sickness is declared, recourse is only to be had in the palliatives; lemons, exciting aromatics, relieve some persons; also the horizontal position, especially with the head low, in a hammock or bed suspended like a compass. But if one wishes to shorten the duration of the nauseous influence of the sea and diminish the tribute he must pay to a nautical acclimation, he must struggle with all his energy against the tendency to inaction.

_Therapeutic employment of sea sickness._—A cause which determines in the economy so great a commotion as sea sickness, without leaving any unhappy consequences, as a therapeutic agent merits more attention than has been given it. M. Pellarin thinks that it may be possible to obtain from it valuable results in many acute and chronic affections. This observation was familiar to the ancients. We read in Pliny, “Vomiting, produced by the motion of a vessel, act as a salutary remedy in many diseases of the head, eyes, chest, and in all affections for which hellebore is given.” In more modern times, Esquirol and Blanche have judiciously advised its employment in cases of recent mania. But in the few attempts that have been made, there has happened, what might have been easily foreseen, from the true theory of maritime nausea, that the maniacs, highly
excited, have not been affected by sea sickness, whilst the physicians who accompanied them have been a prey to it during the whole voyage. From the knowledge already acquired of the nature and etiology of sea sickness, there seems nothing in the way to second, to aggravate voluntarily its influence in a curative end. Even an apparatus might be made to produce all the effects of rolling and pitching, without the necessity of a sea voyage. By reason of the powerful sedative and hyposthenic influence of sea sickness, may we not draw from its employment the greatest advantages, not only in acute cerebral affections, but also in certain pneumonias, pleurisies, and, finally, in a great number of inflammatory diseases?

BIBLIOGRAPHICAL NOTICES.

Medical Botany, or a description of the most important plants used in Medicine, with their history, properties, and mode of administration. By R. EGHESFELD GRIFTH, M. D., Member of the Amer. Phil. Soc., &c. Philadelphia: Lea & Blanchard, 1847. 8vo. pp. 704.

Our country has furnished many valuable additions to the Materia Medica, and we doubt not many more highly useful plants exist of which we have no cognizance, and of which we are likely to remain in ignorance so long as the Science of Botany is so generally neglected by our medical men. The additional facilities which the work of Dr. Griffith will afford to such as may desire to engage in the study of the vegetable articles composing the Materia Medica, we trust will excite an increased interest in this delightful science. This work supplies a want which has been long felt. The author modestly calls it a compilation, but he is entitled to high credit for the manner in which he has selected and arranged his materials. The articles are arranged according to the natural orders; and for the benefit of such as are not familiar with the subject, a short introduction on the structure and composition of plants has been prefixed, with a copious glossary of terms, and a prospectus of the natural orders of plants which furnish medicinal substances. The whole is illustrated by more than 300 well executed wood engravings. The work is highly creditable both to the author and publishers, and we cordially recommend it to the attentive study of our readers.


The above is the title of a very interesting and valuable little work we have just received from the publisher. The nature of the work
does not admit of an extended review, and we cannot convey an idea of its contents better than by subjoining the following extract from its preface:

"The following pages contain a sketch of the history of the treatment of aneurism by compression, from the rude attempts of its earlier advocates to its present improved state; accompanied by an abstract of every case that has been reported, in which compression has been hitherto used—at least of every case which the author has met in a rather extensive reading. The various instruments which have been employed for making pressure are described; and the theories upon which it has at different times been supposed to effect the cure of aneurism are noticed. The author has also endeavored to point out some of the advantages which compression, as a mode of treating aneurism, possesses over the ligature, when the position of the sac permits its application; he has added some rules for the guidance of the surgeon in its application; and it has been all through his aim to refer every invention to its proper author, and every improvement, either in the theory or practice of this method of treating aneurism, to its legitimate source."

The Virginia Springs, with their analysis, and some remarks on their Character, together with a Directory for the use of the White Sulphur Water: to which is added a Review of a portion of Wm. Burke's book of the mineral springs of Virginia, &c., and an account of the different routes to the springs. By John T. Moomann, M. D., Resident Physician at the White Sulphur Springs. Philadelphia: Lindsay & Blackiston, 1847. pp. 219, with maps.

The title page of the above work so fully sets forth the "burthen of its song" that we need say nothing more than to express our satisfaction at its perusal and to recommend it to all who would like to know the history and remedial efficacy of the most fashionable watering place in the Southern States.

Treatment of Diseases of Joints.—M. Bonnet, Prof. of Clinical Surgery at Lyons, published in 1844 a "Treatise on the Diseases of Joints," which obtained one of the highest prizes of the Academy of Sciences of Paris. The work abounds in practical views of great importance, a few of which we will note.

In the treatment of Sprains, M. Bonnet observes that the usual plan of covering the part with warm or even with cold poultices or saturnine lotions, &c., is objectionable inasmuch as these applications soon acquire the heat peculiar to the joint, and then add to it as would any other covering. He prefers a continuous current of cold water or evaporating lotions kept up so as to reduce the temperature, until all inflammation shall have subsided or have been prevented.
In old cases, which have impaired the movements of the joint, he urges the importance of forced movements frequently repeated until the patient can accomplish them without pain, and affirms having by this means effected the restoration of many joints which had become useless. This reminds us of the plan pursued by the celebrated Sweet, the "natural bone-setter" of New York. This notorious charlatan owes much of his reputation in the treatment of stiff joints to the forcible and daily repeated movements he practices in such cases. These manipulations, although at first very painful, soon cease to be so, and the patient recovers the use of a joint he had thought irretrievably lost. The same plan has been successful in some cases of paralysis of long standing, in which the effusion about the nervous origins had been absorbed, and in which therefore the persistance of the paralysis was the result of mere habit or the conviction of the patient that motion was still impossible. Similar success has attended the use of this method in retractions and distortions occasioned by rheumatic affections.

For acute arthritis, commonly called articular rheumatism, M. Bonnet recommends most highly the repeated application of poultices made with alcohol saturated with camphor, cold, of course. In chronic arthritis, M. B. insists upon the importance of daily movements in order to prevent ankylosis or shortening of the ligaments and muscles. This should be combined with the use of general remedies calculated to improve the constitution, as the iodides, &c. He objects strongly to all local applications in the form of poultices, and indeed does not know of any entitled to much confidence.

PART III.—MONTHLY PERISCOPE.

_Influence of terrestrial and atmospheric Electricity upon the human system._—M. Pallas, principal physician in Algiers, presents the results of observations he has recently made in Africa, in order to study the influence of atmospheric and terrestrial electricity upon the human system and to modify the pernicious influence of this physical agent by isolation. This work, which is interesting to the etiology, nature and treatment of the diseases of warm climates, may be condensed into the following propositions:

1st. The majority of the diseases, especially those which belong to the class of neuroses, are occasioned by the influence of increased general electricity, of which the thunder clouds and marshy districts are the most abundant sources.

2d. The marshes, by their geographical arrangement and the effects they produce upon the animal economy, present the greatest analogy to the Galvanic pile. Indeed their action is pernicious and fearful in proportion to the organic and saline matters which their waters hold in solution; hence the reason why salt marshes and
those near the sea-coast are peculiarly injurious to health. The drying up or submersion of marshes present conditions analogous to a galvanic pile deprived of moisture or overflowed, the effects of which are null or very trifling.

3d. The works of naturalists and physiologists have demonstrated that the electricity produced by our machines exerts a special influence upon the nervous system; experience and close observation of facts prove that the diseases developed in a marshy atmosphere are always primarily nervous; and when they become inflammatory it is always by the reaction of the nervous system upon the heart and blood vessels that local and general phlegmasiae are produced:

4th. The neuroses and intermittent fevers being occasioned, not by the action of a miasm that has never been detected either in the air or in the water of marshes, but through the influence of the exaggerated electricity, any means by which this morbid influence can be modified must naturally and reasonably be the best.

5th. Electric isolation happily fulfils this indication. This isolation may be obtained by fixing to the bedsteads, sofas and chairs, glass or resinous feet. A large number of observations have proven to me that all the patients thus isolated have been cured or relieved of distressing diseases, many of which have resisted all other known means.

The striking analogy between marshes and the galvanic pile, the nature of the affections produced under the influence of atmospheric and terrestrial electricity, and the method of combating them by isolation, lead us therefore, naturally to the conclusion that not only the diseases of which we speak, but all those which appear epidemically and whose etiology is unknown, are to be attributed to an exaggeration of general electricity, the intensity of which must produce those varied electro-magnetic conditions which disturb the harmony so necessary of the continuance of human health.

[Translated from Gazette Médicale de Paris.

Hereditary Transmission of Insanity.—M. Baillarger, in his "Statistical researches upon the Hereditary Transmission of Insanity, arrives at the following conclusions:

1st. The insanity of the mother is more readily transmitted than that of the father.

2d. The mother's insanity is more apt to affect her daughters than her sons; that of the father is more apt to affect the sons.

3d. Sons are not more apt to derive insanity from the mother than from the father; but daughters are most subject to the insanity of the mother.—Translated from Gaz. Médicale de Paris.

Effects of Etherization upon Respiration.—M. Ville, furnishes a statement of researches undertaken by himself and M. Blandin, on etherization, at the "College de France." They desired to study only the act of respiration during that singular state, and, as though
nothing can be foreseen in these singular phenomena, they have discovered the opposite to what they expected. Indeed in that state of complete insensibility in which sight is abolished, in which the cold limbs have lost all power to move, respiration produces more carbonic acid than when the organs are in the full exercise of their natural functions. During etherization the carbonic acid produced by respiration increases as the sensibility diminishes, and lessens as this returns. The following are the results of a number of these experiments:

<table>
<thead>
<tr>
<th>No.</th>
<th>Carbonic acid produced during normal respiration</th>
<th>Carbonic acid produced during insensibility</th>
<th>Preparation of ether contained in the air inhaled</th>
<th>Duration of inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.41</td>
<td>4.84</td>
<td>6.70</td>
<td>22'30&quot;</td>
</tr>
<tr>
<td>2</td>
<td>3.05</td>
<td>4.33</td>
<td>2.17</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.79</td>
<td>3.11</td>
<td>12</td>
<td>4'</td>
</tr>
<tr>
<td>4</td>
<td>1.36</td>
<td>3.32</td>
<td>12.68</td>
<td>4'</td>
</tr>
<tr>
<td>5</td>
<td>2.04</td>
<td>4.42</td>
<td>14.11</td>
<td>23'30&quot;</td>
</tr>
</tbody>
</table>

[Translated from Ibid.]

**New method for the union of Wounds.**—M. Baudens, surgeon in chief at the "Val-de-Grace," addresses a letter to the Academy, in which he presents a method for uniting wounds, which he has recently discovered, and which he daily practises with complete success at the hospital of "Val-de-Grace." This simple and efficient method is not, according to M. Baudens, liable to the same objections as adhesive plasters and sutures. The following is the author's description of his method: If we have to unite the flaps resulting from a tibiotarsal amputation, we fix in the bandage carried circularly above the amputation two strong pins, the one in front and the other behind, taking care to leave their heads and points free. The middle of a long cotton thread is now passed like a noose under the free ends of the pins. The threads are then brought down so as to cross each other upon the flaps approximated by the fingers of an aid, and carried up to the pin of the opposite side, to be again brought down so as to operate as a uniting bandage as often as may be necessary, sometimes parallel with the axis of the limb and sometimes crossing each other so as to form a figure of 8. The threads ligating the arteries are also attached to the pins so as not to be torn away when the dressing is removed. The cotton threads exercise a gentle pressure, they are not easily impregnated by liquids, and may maintain their position a long time. The air and the spaces between them permit the humors of the wound to flow readily, and the traction they exert upon the circular bandage placed above the amputation tends to bring down the flesh and to prevent its forming a cone.

This mode of union is applicable to all wounds in general, but it is necessary to know how to place suitably the bandages for the pins. M. B. succeeded remarkably in thus effecting a lineal and prompt union of the wound resulting from the removal of a large wen from the head.—[Translated from Ibid.]
**Protracted Hiccough relieved by pressure upon the epigastrium.**—This method, as simple as it is energetic, appears to be purely mechanical. It consists in effecting a strong pressure on the epigastrium with the fist, or any other body adequate to the same result. The compressing body may be retained in its place by means of a common truss, should it be necessary to prolong its use. M. Rostan, to whom this plan was suggested by seeing a female subject to this disease always relieve herself by strongly compressing the epigastrium with her hands, has resorted to it ever since with decided advantage, whatever may have been the cause of the hiccough. M. Rayer has also used it with happy effect. It could hardly be expected that such means should prove equally efficacious in all cases, but its simplicity recommends its trial in preference to all others.—[Translated from Gaz. des Hop.—Revue Méd.-Chir.—Bull. Gén. de Thérap.

_Burns treated with Ammonia._—M. Guérard, Physician to the "Hotel Dieu," has used, for upwards of twenty years, a concentrated solution of ammonia* in burns of the first and second degrees. He has frequently happened to burn himself with charcoal, phosphorus, gunpowder, &c., and the immediate application of this remedy has always arrested any further development. When the ends of fingers are burnt he plunges them in the liquid without admixture of water. If the seat of the burn was such as to prevent this immersion, he would cover it with a compress dipped in the ammonia, and would prevent its evaporation by covering it with dry cloth. In such cases it is necessary to repeat the application from time to time, whenever the heat or sensation of burning returns. As soon as the ammonia is applied the pain ceases, and the relief continues longer, in proportion to the strength of the solution. According to what M. Guérard has himself experienced, he believes that the application should be continued at least an hour, in order to give permanent relief, after which the burn may be left without any further dressing. If the burn be extensive, one hour will not be sufficient, but then the patient will be apprized of it by the return of pain. M. Guérard does not believe this application adapted to cases in which the skin is removed. The pain is immediately relieved, no phlyctena are developed, and the cuticle dries and finally falls off like parchment. It is well to observe that if the application has been made to an extensive surface, the compresses should be handled with forceps, for concentrated ammonia very rapidly vesicates the skin in the healthy state. The patient, as well as dresser, should also avoid breathing the vapour, and the vessels used should be made either of tin or of earthenware, inasmuch as copper is readily acted upon by ammonia.

The use of ammonia in burns is not new. Physicians have long since observed that it prevents in such cases the development of inflammation. It has been seen, however, that it is especially for burns of small extent, and in which the skin is not excoriated, that M.

---

* Aqua Ammonia, we presume.—Trans.
Guérard advises the use of this caustic. Thus far we see no objection to recommending its trial to practitioners. As to burns involving a large surface, it requires more circumpection. There are efficacious means in more common use, such as the oleo-calcareous liniment and carded cotton, prolonged cold baths and fomentations with iced water. There is at this time a case at the "Hopital St. Louis," in which the most happy results have been obtained with cold water.—[Translated from Journ. des Conn. Méd-Chir.—Bull. Gén. de Thérap., April, 1847.]

**Camphorated Blistering Ointment.**—M. Mialhe, in an article published in "l’Union Médicale," upon Epispastics in general and Cantharides in particular, establishes the following principles:

1st. That the most active epispastics should be preferred; 2d, that epispastic plasters should not be allowed to remain in contact with the skin any longer than is absolutely necessary to effect the detachment of the epidermis; 3d, that the addition of camphor to blisters is of acknowledged usefulness and ought to be generalized.

The action of cantharides upon the bladder is lessened in proportion to the rapidity with which the serous exhalation is produced, because there is less cantharidine absorbed. By the addition of camphor, which has the property of softening resins, the blistering ointments are made more fluid, they adhere better to the skin, and consequently act more promptly. Among the means proposed to prevent the specific action of cantharides upon the bladder, none is so good as that indicated by M. Bretonneau, which consists in the interposition between the plaster and the skin of blotting paper dipped in olive oil; the cantharides being soluble in unctuous bodies, the olive oil facilitates its introduction into the system, but this introduction diminishes as soon as the serous effusion takes place, inasmuch as oils are not miscible with aqueous fluids. Hence by this method the irritating influence of cantharidine upon the urinary organs is rarely felt.

The following is M. Mialhe’s formula:

| B. Cantharides, | 400 parts. |
| Hog’s Lard, | 25 " |
| Veal suet, | 25 " |
| White resin, | 50 " |
| Yellow wax, | 100 " |
| Sulph. Ether, | 100 " |
| Camphor, | 40 " |

Pulverize the cantharides without having previously dried them, pass them through a sieve and suspend the pulverization as soon as you have obtained one hundred parts of fine powder; place this powder in a large mouthed bottle and add to it the sulphuric ether; put the remainder of the cantharides in a tinned basin with the lard, the suet and a sufficient quantity of water to float the whole, boil gently one hour, continually stirring the mass, then set aside to cool in the same vessel. Now separate the compound which floats on the surface
from the matters that have settled at the bottom of the vessel; melt this fatty compound, filter through cloth into a tinned vessel upon a sand bath. Add the resin, the wax and the camphor; heat until all be completely melted; then add the powdered cantharides and ether, and heat until the ether be completely evaporated, that is to say about an hour. Finally pour the ointment into a marble mortar and stir until it be completely cold.

This ointment, being rather soft, should be spread thinly upon cerecloth (sparadrap*) instead of sheep-skin, as is yet customary with some. The vesicating effect of this application is very prompt. It takes place in from two to three hours at most, according to the susceptibility of the skin, the temperature of the part to which it is applied and the care with which it is kept in contact with the surface.

Although this ointment contains a good portion of camphor, it will be prudent to interpose the oiled paper whenever the action of the cantharides upon the urinary organs is objectionable; or, what will answer as well, the plaster should be left upon the skin not exceeding two hours or two hours and a half, a sufficient quantity of cantharidine being absorbed in that time to produce the local without the general effect.—[Translated from Bul Gén. de Therap.

Remarks on the Alnus Serrulata, common Black Alder—by Jas. Helmich, M. D., of Ohio.—I noticed in the July No., for 1846, of the New-York Journal of Medicine and the Collateral Sciences, an article on Indigenous Medical Botany, by S. W. Williams. Among the indigenous medical plants named by Dr. Williams, and to which he has called the attention of the readers of your valuable Journal, is the “Alnus Serrulata,” or common Black Alder. It is not my purpose to gainsay a word that Dr. W. has said in describing its medical use, nor am I certain that he has said all that he has to say about it; but I am sure he has not said all that should be said in its favour. Dr. W. has pointed out several uses of the Black Alder entirely new to me, viz: repelling the milk in the female breast—the inner bark of the root being emetic—a decoction of the cones for the suppression of hemorrhage—and in haematurin.

I have long been in the habit of prescribing a decoction of the Black Alder, and more recently of the extract (a more convenient and eligible form) in chronic affections, and more particularly in serofula and secondary syphilis. I have seen some of the most happy results from its use in both these forms of disease. Mrs. S—was admitted into the county alms house, with secondary syphilis of long standing, and a constitution broken down with the disease and the use of mercury; she had ulcers in the nose and palate, nodes on the head, legs, and arms; and unable to walk from stiffness of joints; indeed she seemed to be a hopeless case. She was ordered a strong decoction of the Black Alder, and a milk and vegetable diet, to which

*The French "sparadrap" is somewhat similar to our patent adhesive plaster, Oil-silk would answer.—Trans.
she rigidly adhered for six months, when she left the institution perfectly cured, and remains well up to the present time, a period of three years.

A clergyman’s lady of this vicinity had scrofula, with open ulcers, large and ill-conditioned; she was entirely cured by the use of a decoction of the Black Alder. This lady was removed a distance of a hundred miles from this place, and although cured, she continues to use it occasionally as a preventive; she has twice sent to this place to procure, as she says, the “genuine article.”

I was acquainted with an intelligent old gentleman, (since dead,) who cured in his own person a cancer of the lip with a beer made from the bark and small branches of the Black Alder.

I mention the above, not as the only cases of cure with this medicine, but as prominent cases in three different forms of disease. I am persuaded that the Alnus Serrulata is one of our most valuable vegetable alternatives, and deserves the careful and attentive investigation of the physician, pharmacian, and medical botanist.

More recently I have witnessed the valuable properties of the extract, prepared by the evaporation of the decoction to the consistency of thick tar; it makes a very convenient form for pills and solution. I prescribed a strong decoction of the extract, two months ago, in a case of impetigo of long standing, and which had proved very obstinate, refusing to yield to all the various plans of treatment, both general and local, persisted in for more than three years. The lady was of full habit, somewhat corpulent, but general health good; the disease affected both ankles over the instep. She was directed to drink a decoction of the black alder, and ½j. of the extract dissolved in ⅝ij. of water for a local application twice a day. In two week her husband reported to me “that the ½j. of extract had done more for her than all other remedies put together.” At the present date, two months since the first application, she is entirely cured.

Impetigo is in my experience a very intractable form of disease; yet, in this case it yielded readily to the extract of Black Alder. It is the first and only case I have ever prescribed it in as a local remedy; I intend however to give it a more extended trial in some other diseases, where its tonic and astringent properties will be more fully tested.

I am informed by the individual who prepares the extract, that it is an invaluable remedy for dyspepsia, taken in doses of 3ss. three times daily.—[New-York Journal of Medicine.

Influence of Coffee upon Sulphate of Quinine.—According to the experiments of M. Dorvault, the sulphate of quinine, with the exception of a very small quantity, remains unchanged by the action of coffee. According to him, the disappearance of the bitter taste is due partly to the transformation of the portion of quinine which is dissolved into a tannate, and partly to the action of the other principles of coffee. M. D. thinks that it is only the dissolved portion of
the sulphate which affects the organ of taste, and that this is decom-
posed by the tannin of the coffee, whilst the undissolved portions of
the sulphate of quinine remain unchanged.

Sulphate of quinine dissolved by the aid of sulphuric acid or alco-
hol, looses but very little of its bitterness by admixture with coffee.
Experience appears to have established the fact that the medicinal
properties of the sulphate of quinine are not impaired by the action
of coffee.

M. D. recommends the following formula for the administration
of "quininized coffee."

R. Coffee, parched and ground, 10 parts.
Boiling water, 100 "

Treat by displacement, filter and add sulphate of quinine 1 part and
sugar 15 parts.—[Trans. from Bul. Gén de Therap., April, 1847.

On the Syrup of Iodide of Iron. By Messrs. T. and H. Smith,
Edinburgh.—The process used by us for the syrup of iodide of iron is
a modification of the formula of the Edinburgh Pharmacopoeia, and,
as we have by repeated trials long proved its value, it is here given
for the use of the readers of the Pharmaceutical Journal.

Let a solution of iodide of iron be made in a flask with six hundred
grains of iodine, two hundred grains of pure iron filings, and six
ounces of cold water. The action being finished, after smart agita-
tion for a few minutes, let the liquid, while yet hot from the intense
chemical action, be boiled over a gas flame, or in any other more
convenient way, till its brown colour has disappeared, which is easily
known by the froth becoming white. Let the liquid be now at once
filtered through a small filter into a bottle, which has previously been
marked, by pasting on the outside of the bottle a small slip of paper
at the level of eighteen fluid ounces, and containing thirteen ounces
and a half of refined sugar, broken down into pieces about the size of
peas. When the solution has all passed through, which fortunately
takes place with unusual rapidity, let the filter be washed with boiling
water, a further quantity of which must also be poured into the bottle
till the liquid reaches the level of the mark. Let the bottle then be
introduced into a hot water-bath and briskly shaken at short inter-
vals, till the sugar is quite dissolved: and having adjusted the level
of the syrup to the mark by the addition of water, after again shaking
the bottle, let the syrup, without a moment's delay, be bottled into
small phials, and secured as much as possible from contact with the
air and light, by careful corking, and covering the bottles with some
dark-coloured paper. These are the proportions adopted in the
Edinburgh Pharmacopoeia, and the syrup contains one grain of the
iodide in twelve minims, or five grains in one drachm; but as the
syrup first proposed by Dr. A. T. Thomson is weaker by two-fifths,
containing three grains to the drachm, and which we believe is the
strength of the syrup used in England, it is evident that the propor-
tions must be varied accordingly. They will therefore stand thus:
Cajeput Oil as a Remedial Agent—by J. A. Preston, M.D., of Long Island, N. Y.—In submitting the subjoined remarks upon the use of the oil, cajuputi, I am influenced less by the desire of communicating than eliciting information. I am not aware to what precise extent it has been used in this country, neither have I been able to learn the indications which other practitioners have found it to answer. The expense of the article, and the consequent temptation to adulteration, doubtless, have deterred physicians from using it to any extent. This valuable oil is principally manufactured on the island of Buoro, and thence exported to Holland. From Holland it is re-exported to the United States, paying a heavy duty, which correspondingly enhances its price. At the distilleries in Buoro and Amboyna, the oil is sold for about $1 per bottle, averaging 3/4 gxxiv. each. But the commerce being entirely monopolized by the Dutch, it is rarely that other nations can obtain it at this low rate. At Batavia, upon the island of Java, about 400 miles distant from Buoro, it is sold as high as $5 per bottle. But I leave its history to speak of its uses. Having obtained a couple of bottles of the pure oil direct from the Moluccas, I proceeded to experiment with the same whenever an opportunity offered in which I judged it could be used with advantage.

It was at first prescribed endemically for several cases of chronic rheumatism, which had hitherto resisted other treatment. Its success in these cases induced me to use it in others, which I have since done with like success. I should remark that the oil was applied freely, regardless of the restrictions so religiously enjoined by the Malays. From its almost instantaneous action in relaxing muscular spasm, in relieving spasmodic colic, and persistent singultus, I am induced to conceive that it operates directly upon the nervous system as a powerful antispasmodic. I have administered it in several cases of flatulent colic, invariably with the happiest results. The effect has been instantaneous in relaxing the spasm, and the regurgitation of flatus has given immediate relief. A few drops, four to six, taken in water or upon a piece of sugar, will arrest the spasmodic action of the diaphragm in singultus, with the greatest certainty. Conjointly with its internal administration, fifteen or twenty drops may be applied externally to the epigastrium. Diluted with three or four parts of oil, amyg. dulce, I have found it an excellent application for deafness resulting from deficient or hardened cerumen. For this purpose a few drops of this mixture may be placed within the external meatus.
Assafætda to prevent death of the Fœtus-in-utero. [October,
upon a dossil of cotton, while the pure oil is applied anteriorly to the
ear, directly over the facial nerve. As an odontalgic it is far superior
to the ol. cresositi, and, applied directly to the exposed nerve, often
relieves the pain entirely.

But I am trespassing upon your patience, and forbear enumerating
further indications, lest your readers suspect me of wishing to immor-
talize myself as the discoverer of another "golden drop." I confess
my aspirations are not restricted to success in the practice of my pro-
fession, but compass the acquisition of those golden drops more
essential to life than the far-famed elixir of Paracelsus.

In conclusion, allow me to suggest that, if I am correct in my views
of the modus operandi of the article under consideration, might we
not hope some more signal advantage from its use in colica pictumum,
spasmodic cholera, tetanus, and other spasmodic diseases.—[Boston

Assafætda used to prevent the death of the fœtus-in-utero.—The
fœtus-in-utero may die at any time between the commencement and
full term of gestation, independently of the process of parturition, or
of any appreciable accident, and apparently in many instances from
a pathological condition of the uterus, partaking of the nature of de-
bility or want of tone. Dr. Gaetano Laferla, of Malta, in endeavor-
ing to adapt a suitable treatment to such cases, has arrived at the
conclusion that assafætda will best answer the indications of exciting
the uterus and of restoring its toniciry and vigour, without risk of
producing dangerous contractions of this organ. But before resorting
to it he considers the mother’s temperament and the period
which her previous abortions have occurred. To those of a sanguineous or bilious temperament, he administers from 2 to 4 grains
less of the assafætda per day than he would to others. He also
takes care that the female shall use, up to the period of her other
abortions, an aggregate of assafætda equal to from 10 to 15 grammes
(from 160 to 240 grains). He gives the assafætda in doses of 2
grains, made into a pill with the extract of chamomile,* morning and
night, with a cup of coffee or other beverage. This dose should be
increased as follows: if abortion has previously occurred during the
first three months, the dose should be increased every two days; if
during the second three months, it should be increased every four or
five days; and, finally, if during the three last, it should be increased
every six or eight days.

According to Dr. Laferla, the chance of success is increased by
commencing the treatment before pregnancy. He then prescribes
from 3 to 4 grains, morning and night, until conception have occurred.
When this is ascertained, he reduces the dose to 2 grains, and
continues at this, provided the movements of the fœtus are of the
natural strength and that there are no threatening symptoms, until
a month before the time of previous abortions. The author reports

* Ext. Gentian would be a good substitute.—Translator.
a number of cases illustrating the efficacy of his method.—[Translated from Revue Méd.-Chir.—Bull. Gén. de Thérap., April, 1847.

New Method of Exciting Premature Delivery.—The manifestation of contractions occasioned by injections made into the uterus during the treatment of an obstinate affection of this organ by Dr. Cohen, of Hamburgh, suggested to him the idea of provoking premature delivery by this method, which is painless, certain and expeditious. He proceeds as follows: a small pewter syringe, containing from 2 oz. to $2\frac{1}{2}$ oz. of fluid, with a canula a line or two in diameter and 8 or 9 inches long, bent like a female catheter, is used. The patient being placed upon the back, with her hips elevated, he introduces the canula between the anterior wall of the uterus and the ovum, guiding the instrument with two fingers carried as far as the posterior lip. The free extremity of the syringe is depressed, and the canula projected beneath the pubes until it has penetrated about two inches into the uterus; he now commences the injection, which is forced up gradually, taking care to elevate the syringe a little so as to prevent the end of the canula from resting against the uterine walls, and to change its position whenever there seems to be any obstacle to the flow of its contents. The syringe is then gradually withdrawn, and the female may walk about in ten minutes; if no symptoms occur in six hours, the injection is to be repeated. The liquid used by Dr. Cohen is tar water, but he thinks that various others might answer equally well. The author relates but one case in support of his plan, but this is as satisfactory as possible. Two injections, at intervals of five hours, without giving any pain, were sufficient to induce delivery without any unpleasant consequence.—[Translated from Bulletin Gén. de Thérap., April, 1847.

Means of ascertaining if Alcohol be perfectly pure.—M. Cassoria employs the anhydrous sulphate of copper to determine if alcohol contains any water. The salt will remain white, if put in anhydrous alcohol in a well stopped bottle, but will become blue if the alcohol contains any water.—[Translated from Journ. de Pharm.—Bulletin Gén. de Thérap.

Means of preventing the corroding action of Urine upon the Skin.—Urine in its normal state contains, as is well known, salts of potash, soda, lime and ammonia, as well as acids, free or combined with urea. According to the food taken, the proportion and nature of these elements vary more or less. In some cases the alkaline predominates, in others the acid elements. In the latter state of things, should accident or disease occasion the urine to remain in contact with the skin, this would be corroded by the excess of acids. This not unfrequently occurs during incontinence of urine. In order to obviate this serious inconvenience, M. Maurat, "interne," at the "Hopital St. Louis," resorted to a topical application capable of
Detecting Cotton in Linen.—Letter from the Editor. [October,

absorbing and neutralizing the acid so as to form salts that were very nearly insoluble and unirritating to the skin. Iron and magnesia seem to promise most. For this purpose he formed a paste with an admixture of equal parts of calcined magnesia and of sesqui-oxide of iron with tepid water, with which he covered the parts exposed to the action of the urine. Those parts which, from their inclined position, might prevent the paste from adhering, he previously powdered with dextrine. In the two only cases in which M. Maurat has been able to use this paste, he has attained the desired result.—[Translated from Rev. Méd-Chir. de Paris.—Bull. Gén. de Thér., April, 1847.

Method of detecting the presence of Cotton in Linen.—M. Kindt, a Bohemian apothecary, proposes to detect the presence of cotton in linen, by a process based upon the principle that the fibre of cotton is more rapidly dissolved in concentrated sulphuric acid than that of either hemp or flax. The cloth having been thoroughly deprived of its dressing by being boiled some time in water, should be well dried. One end of the piece should then be plunged in concentrated sulphuric acid, and left in it from one to two minutes. The cloth becomes transparent, and should be well washed in water, rubbing it with the fingers, if necessary, to favor the removal of the gummy matter which has been produced. It should now be rinsed in water holding in solution a small quantity of potash or other alkaline substance to neutralize any acid it may still contain, and again in pure water, and finally dried. If the cloth contains any cotton this will have been dissolved, and its absence may be readily detected by comparing the portion subjected to the acid with that which was not.

If the specimen were allowed to remain too long in the sulphuric acid, the linen fibres would also be acted upon, but if the cloth were made entirely of flax the corrosion would be uniform. The cotton however is always first acted upon, and is converted into gum whilst the linen threads still remain white and opaque.—[Translated from Journ. de Pharm., 1847.—Bull. Gén. de Thérap.

MEDICAL INTELLIGENCE.

LETTER FROM THE EDITOR, DATED,

PARIS, August, 1847.

To the Editors, pro tem., of the Southern Med. and Surg. Journal:

Gentlemen—Thanking you, as I have done privately, and now do publicly, for your kind offer to conduct the Journal during my unexpected, and I trust brief absence, I propose to send you a few items of Medical Intelligence by the steamer of the 19th. My sojourn here, however, has been yet so short, that I have but little to communicate.

Epilepsy.—You are aware that it is a case of this affliction that has brought me here, and which supervened upon premature delivery. I left for the Journal a short article translated from M. Trousseau, containing the wonderful cures he had affected by prolonged warm baths, with a small current of cold water falling at the same time upon the head, in acute diseases within the cranium. I had come to Paris to consult Professors Velpeau, Rostan and Trousseau, and have
already accomplished my object. The latter gentleman, could not, because of previous engagements, meet at the consultation, and therefore made his visit alone. After obtaining a history of the case, which is briefly this—the first attack of convulsions coming on about three weeks after the premature accomch
ment, then the second about the end of the same interval, with subsequent recurrences varying from four to nine weeks—a permanent pain in the head, which has never yet been entirely relieved—failure of all medication, as nitrate of silver, oxide of silver, arsenic, quinine, valerianate of zinc, hydriodate of potash, active purgation, ptyalism, seton to the neck, issues to the arm and leg, cold affusion to the head, diet, narcotics of various kinds, &c., &c., visit to the Madison Springs, Saratoga Springs, travelling, a sea voyage of thirty days—nothing as yet having interrupted the attacks. Prof. Trouseau recommended one medical and one surgical means—the powder of the root or leaves of bella-donna in small regulated and guarded doses for several months, and ligatures to the primitive carotids. He was aware the latter proposition would not be sanctioned by the profession, but he repeatedly said were it his own son affected with epilepsy, he would not hesitate a moment to ligate these arteries. We do not know what this disease is, he remarked, and so profound a change in the nutrition of the brain would be produced by closure of the carotids, that I know no means in this affection more available, or which promises as much as their ligation. Prof. Rostan assumed, in the consultation with Prof. Velpeau, the management of the case, and promised very kindly to write out in full, directions for it. These I shall not get until too late for this mail. The plan, however, agreed upon by them, consisted in prolonged sedative baths to the skin, hot pediluvia, with cold stream of water to the head, regulation of the bowels, and the powdered root of belladonna.

There being no hereditary tendency in this case, and no permanent external symptom of disease in the brain, they all think, by great care and perseverance in the treatment, that it will be cured. They consider it a severe one, especially on account of its persistence, now sixteen months; and that it is cephalic, and not now dependent on the uterus.

Each of the above named gentlemen utterly refused any compensation for their services in this case.

I may also obtain the opinions of Drs. Marshall Hall, C. J. B. Williams, and Watson, of London, in reference to this case.

Case of Extra Uterine Conception—This is a female, some 30 to 35 years of age, in one of the wards of M. Velpeau. Portions of the fetus having passed from the bladder per urethram, a caustic issue has been established below the navel, through the abdominal wall. The case has not apparently been benefited, and the patient seems to be sinking. (Died.)

Aneurism at head of Elbow, patient never having been bled.—This is a curious case, and has been presented to nearly all the surgeons of note in Paris, no two of whom agreed in the diagnosis. M. Velpeau made a small puncture into the tumor; size of a common apple, and observing its diminution by pressure upon the humoral artery continued for several hours, diagnosticated an aneurism. There was no pulsation in the swelling. He tied the brachial artery, and the patient is doing well. The ligature has fallen and the tumor has diminished.

I have as yet witnessed no capital or important operations since my arrival here. In the fashionable circles this is known as the dull season of the year, and every occupation of life seems to feel the influence. There are fewer lectures going on, and fewer surgical operations in Paris, than I have ever known.

Of course, one of my first visits was to La Charité Hospital, to see and hear that renowned surgeon, M. Velpeau. He at once recognized me and welcomed me cordially to Paris, expressing his sympathy for the cause which had brought me here, and offering his services to aid me in any way.

Of four operations he performed, the ether was inhaled in two—to the two others, (polypi of the nose,) it was inapplicable. The first was that most horrible of operations, the evulsion of the nail of the great toe. The ether was inhaled from a very simple apparatus, a hog's bladder covered with a piece of silk like a bag, and the nose and mouth embraced by the opening and secured as a lady's common reticule. The second case was one of tumors in each mamma of a country
Death of Broussais.--Meteorological Observations.

girl, aged 19 years. They were steatomatous in character, and about the size of a turkey egg; one in each breast, and their origin unknown. Both these patients declared themselves to be insensible and unconscious to pain or to what was passing around them. The openings left by the removal of the tumors were crammed full of coarse lint, and then well wadded and compressed upon the surface—this is the month of August, and suppuration abounds in the hospital.

M. Velpeau's Lectures have been on diffused phlegmonous inflammation, and a recapitulation of the fractures received into his wards during the last six months. He stated that diffused phlegmonous inflammation could not be arrested after the third or fourth day. There was a destruction of the cellular tissue at this period of the disease, a sort of gangrene or even spaceculitis, and it must be gotten rid of by an opening or openings through the skin. To arrest or abort the inflammation in the early stage, he recommended first, compression by a well applied roller bandage; 2d, topical and general bleeding; 3d, mercural ointment; 4th, roller bandage to cover the whole surface inflamed. He dwelt especially upon the first means, the therapeutic effects of a roller bandage in external inflammations.

Death of M. Broussais.—Casimir Broussais, son of the late illustrious physician of that name, recently died at the age of 44 years. His death was caused by Cancer of the Rectum, the same disease that destroyed his father. The deceased was high in rank in the Army, and succeeded Desgenettes in a Professorship in the Faculty of Medicine of Paris.

METEOROLOGICAL OBSERVATIONS, for August, 1847, at Augusta, Ga. Latitude 33° 27' north—Longitude 4° 32' west Wash. Altitude above tide 152 feet.

<table>
<thead>
<tr>
<th>Date</th>
<th>Sun Rise</th>
<th>4 P.M.</th>
<th>Wind</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ther.</td>
<td>Bar.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>69</td>
<td>20 74-100</td>
<td>71 29 77-100</td>
<td>Rain, 1:9-100 of an inch.</td>
</tr>
<tr>
<td>2</td>
<td>68</td>
<td>&quot; 75-100</td>
<td>70 &quot; 73-100</td>
<td>Rain, 1:26-100 of an inch.</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>&quot; 73-100</td>
<td>80 &quot; 75-100</td>
<td>Cloudy.</td>
</tr>
<tr>
<td>4</td>
<td>63</td>
<td>&quot; 76-100</td>
<td>81 &quot; 74-100</td>
<td>N.W.</td>
</tr>
<tr>
<td>5</td>
<td>65</td>
<td>&quot; 72-100</td>
<td>81 &quot; 58-100</td>
<td>N.W.</td>
</tr>
<tr>
<td>6</td>
<td>68</td>
<td>&quot; 45-100</td>
<td>76 &quot; 44-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>7</td>
<td>69</td>
<td>&quot; 45-100</td>
<td>81 &quot; 51-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>8</td>
<td>70</td>
<td>&quot; 68-100</td>
<td>84 &quot; 67-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>9</td>
<td>68</td>
<td>&quot; 86-100</td>
<td>76 &quot; 83-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>10</td>
<td>67</td>
<td>&quot; 91-100</td>
<td>70 &quot; 95-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>11</td>
<td>67</td>
<td>&quot; 95-100</td>
<td>84 &quot; 93-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>12</td>
<td>68</td>
<td>&quot; 93-100</td>
<td>86 &quot; 87-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>13</td>
<td>69</td>
<td>&quot; 87-100</td>
<td>83 &quot; 83-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>14</td>
<td>64</td>
<td>&quot; 81-100</td>
<td>87 &quot; 84-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>15</td>
<td>61</td>
<td>&quot; 86-100</td>
<td>80 &quot; 85-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>16</td>
<td>69</td>
<td>&quot; 87-100</td>
<td>77 &quot; 84-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>17</td>
<td>68</td>
<td>&quot; 81-100</td>
<td>77 &quot; 82-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>18</td>
<td>65</td>
<td>&quot; 81-100</td>
<td>78 &quot; 77-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>19</td>
<td>67</td>
<td>&quot; 77-100</td>
<td>77 &quot; 77-100</td>
<td>Broussais.</td>
</tr>
<tr>
<td>20</td>
<td>64</td>
<td>&quot; 79-100</td>
<td>86 &quot; 78-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>21</td>
<td>70</td>
<td>&quot; 83-100</td>
<td>85 &quot; 75-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>22</td>
<td>71</td>
<td>&quot; 83-100</td>
<td>84 &quot; 83-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>23</td>
<td>69</td>
<td>&quot; 83-100</td>
<td>89 &quot; 83-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>24</td>
<td>69</td>
<td>&quot; 84-100</td>
<td>88 &quot; 84-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>25</td>
<td>67</td>
<td>&quot; 90-100</td>
<td>70 &quot; 90-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>26</td>
<td>64</td>
<td>&quot; 93-100</td>
<td>70 &quot; 92-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>27</td>
<td>66</td>
<td>&quot; 91-100</td>
<td>69 &quot; 84-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>28</td>
<td>65</td>
<td>&quot; 81-100</td>
<td>78 &quot; 83-100</td>
<td>N.W.</td>
</tr>
<tr>
<td>29</td>
<td>67</td>
<td>&quot; 81-100</td>
<td>63 &quot; 87-100</td>
<td>N.E.</td>
</tr>
<tr>
<td>30</td>
<td>69</td>
<td>&quot; 87-100</td>
<td>86 &quot; 88-100</td>
<td>N.W.</td>
</tr>
<tr>
<td>31</td>
<td>68</td>
<td>&quot; 88-100</td>
<td>83 &quot; 89-100</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

16 Fair days. Quantity of Rain 5 inches and 87-100. Wind East of N. and S. 12 days. West of do. 18 days.