THE
SOUTHERN MEDICAL
AND
SURGICAL JOURNAL.

VOL. III.

A TRULY VIRTUOUS WILL IS ALMOST OMNIFONTENT.

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AUGUSTA, GA.
Printed by Guion & Thompson,
McIntosh-street.

1839.
A Treatise on Congestive Fever, by A. B. Arnold, M. D. of Lowndesville, Abbeville District, South Carolina.

In treating of Congestive Fever, I shall undertake to describe the disease as it prevailed in Abbeville District since the summer of 1832, and the mode of treatment which was found, from experience, to be best adapted to it. In order that my views may be better understood, I shall make a few physiological observations, as the basis of the Theory which I shall adopt in relation to the disease. I shall assume the ground, that every fibre of the body is endowed with a principle called irritability, and that the application of appropriate stimulants to this principle produces life and health to the degree that we enjoy it—and that these stimulants act upon what are called the surfaces of relation, that is, the external and internal surfaces, and that these are internal or secondary stimulants, namely, the different fluids of the body, and that a very important stimulus of this class is the electric fluid, which is transmitted from one point to another through the medium of the nerves, and it is by the instrumentality of this fluid, that all the sympathetic relations are carried on, and that it controls the circulation of the blood, and in this way is of most importance both in health and disease. But
at the same time, as its production depends upon a free circulation of blood, it may be increased or diminished according to circumstances, and in complete congestion of any of the vital organs, death is inevitable. Health then is the result of the application of the appropriate stimulants of life to the irritable fibres of the body, and in the diseased economy of the system many of its derangements denominated disease, are owing to an inordinate application of proper stimulants to particular parts, deranging that proper balance of excitement, which is necessary to keep up healthy action. But in most violent cases of actual disease, the system has been first subjected to the action of some deleterious or noxious agents which have created morbid action in parts most susceptible of impressions from such stimulants and through the instrumental-ity of the nerves these impressions are transmitted to other parts of the body, to the brain first, and to those parts next which sympathize most strongly with the parts originally affected, it being a law of the animal economy that parts of similar structure sympathize most readily, and that the nerves transmit impressions to different parts of the body precisely of the same character of those which exist in the parts primarily affected. Thus it is that the peculiar impressions made by the action of the matter of contagious diseases, are transmitted to different parts of the body, and in further proof of this fact, we have it from unquestionable authority that in cases of very high degree of excitement of the kidneys, other parts have been brought under sufficiently strong sympathetic action, to secrete a fluid precisely the same as that secreted by the kidneys. It follows then that the system is governed by the same laws both in health and in disease, and that the nerves are made to transmit healthy impressions in the one case, and diseased impressions in the other. It may here be necessary to observe, that there is a strong tendency in the system to keep up healthy and peculiar action in the different structures, thereby continuing a proper distribution of blood and excitement through the system. When any part of the body is subjected to inordinate or inappropriate stimulants of sufficient strength to produce increased or irregular action, other parts of similar structure will soon be involved in the same sort of increased and diseased action, whilst other parts will be left with deficiency of action. These principles in the
economy of the system being settled, they will serve as landmarks in searching into the causes and effects of diseases and conduct to both a rational theory and a rational practice. Before I say any thing of Congestive Fever, particularly, it may be proper to make a few remarks on the group of symptoms denominated fever. Fever consists in an unequal distribution of blood attended, consequently, with increased heat and action in some parts, and diminished heat and action in other parts, creating irregular action in the heart and arteries, and showing already that the whole derangement commenced in local irritation, and it is obvious from the principles laid down above, that the local irritation will soon be followed by more or less congestion at the point of irritation, and that this determination of blood, if continued, will soon produce that continued distension of the blood vessels and painful state of the nerves called inflammation, which in its turn becomes a great aggravating cause. Thus it is easy to perceive that the action and re-action of cause and effect has a tendency to keep up disease, which would take life in every instance, were it not for that law of the animal economy, the tendency of which is to keep up and maintain that balance of excitement between the parts which is calculated to give health to the whole, there being a tendency in every structure of the body to take on and continue that action which is peculiar to its structure. It would appear then, as Fever consists in increased and wrong action in some parts of the system, that the plain indication of cure is to equalize and alter the excitement by remedial agents so far as to give the natural recuperative powers of the system the advantage over the disease. The mode and manner of effecting these objects may depend upon circumstances. If the disease is established, it is rational to commence by depletion and other means of abating excitement, but if in a forming stage, it may be done by remedies which have a revulsive effect, sufficiently strong to overcome the centripetal tendency which is given to the blood by internal irritation. These are the obvious conclusions from the history of life as laid down above. To these views of stimulants and irritability in the phenomena of life, our minds are limited by that law of our nature which speaks in the positive language, "Thus far shalt thou go and no farther." We must view man as he is presented to us in the full posses
sion of all his faculties, and confine our reasoning to the opera-
tions of causes and effects upon his material part, as far as
we can understand the laws by which they are governed. It
next becomes necessary to notice the peculiarities of Congestive
Fever. I regard Congestive Fever as nothing more than a pe-
culiar form of the Inflammatory and Typhoid Bilious Fevers of
our country, which peculiar form or character is entirely atri-
butable to the operation of the predisposing cause upon the sys-
tem. I shall not pretend to say what this peculiarity in the pre-
disposing cause is, but shall content myself with referring mere-
ly to the fact, that during the prevalence of any epidemic, the
system is known to be under the influence of some peculiar
cause which gives identity of character to every disease which
may happen to invade the system at that time. It is clear,
therefore, that the cause of difference between this and other
fevers, must be the peculiarity of the predisposing cause of the
epidemic; for I deem it unnecessary to say that the exciting
cause cannot give character to any fever. It appears, then, that
the only peculiarity which I contend for in this variety of fever,
is the greater degree of congestion, admitting the seat of conges-
tion to be the same as in other Inflammatory and Typhoid Bil-
ious cases, that is, the internal capillaries and the important
glands, and that different points of the system are liable as in
other fevers, to become the principal seat of the disease owing
to the peculiarity of the predisposing cause, particular struc-
tures, showing their greater susceptibility for particular stim-
ulants.

Symptoms.—This fever, like other bilious fevers, assumes at
one part of the season, the intermittent, and at another the re-
mittent, though during the whole season the one or the other
type will generally prevail. The only marked difference that I
first discovered in the bilious fever of this neighborhood in
reference to the form of fever now treated of, was an increase
of the symptoms indicating congestion, and which rendered the
fevers much more difficult to treat than formerly. Having wit-
nessed variations in the character of bilious fever before in re-
gard to the organs most liable to suffer throughout whole sea-
sons and sometimes a change from an inflammatory to a typhoid
type, I at once ascribed the change, as I had done on former
occasions to a change in the character of the predisposing cause.
The fever was ushered in very much like other bilious fevers, but during the hot stage, I discovered that the re-action was much less perfect than in common bilious fever, the skin always remaining cold from the hips down, and hot and bathed in perspiration from the hips up throughout every paroxysm, attended, generally, with a dull heavy head-ache and with a rather more purple appearance of the skin in the upper part of the system, showing it more perceptibly under the eyes than anywhere else, great restlessness during every paroxysm, and anxiety with short breathing, and sometimes complaining that they could not breathe from the bottom of their lungs, redness of the eyes, watchfulness, and a great tendency to delirium in the inflammatory cases. The bowels were very costive, or had a great tendency to watery stools. Every thing except calomel, or a purge containing mostly calomel, or preceded by a large dose of calomel which had been suffered to lie sometime in the system, generally produced copious watery discharges, amounting in some cases, to what may be called serous hæmorrhage. It was always difficult to procure secretions from the liver, but they were always attended with relief when they were obtained. The pulse during the first paroxysm, with some exceptions, did not exceed in frequency 100 to 110 beats in the minute, but, if the disease was not arrested, it increased in frequency every day, always intermitting during the paroxysm, and after a few days, at all times. After two or three days, unless a manifest impression was made upon the disease, the pulse would increase to 120 or 130 during the paroxysm, and sometimes to 150, or so quick that the beats could not well be counted. The tongue exhibited pretty much the same appearances as in ordinary bilious fever varying in redness according to the degree of gastritis which attended the case. This inflammatory type of fever continued for three years, with very little change, when it gradually assumed a typhoid type.

Symptoms.—The colour of the skin was of a more leaden hue than in the inflammatory cases, the pulse much quicker from the beginning; this form of the disease was more apt to terminate suddenly than the other. By far the most fatal form of this fever, was the intermittent type, and was most apt to be mistreated, the chill in some cases was so slight, that it passed unobserved by the nurses, it only showing itself by an increase
of coldness in the extremities, which were cool before, and of the nose. If the type of the disease was not changed, it generally terminated fatally in a few days, sometimes on the second or third day, and when the brain was the principal seat of the congestion, the patient would lie in an apoplectic state during the paroxysm. It is the typhoid character of the disease, and especially when the type was disguised, that has struck the community with the most terror; on account of its most sudden, and in many instances, unexpected termination in death.

The tongue, when the disease had run on for some time, was coated with a darker fur than in the more inflammatory form of the disease, though in some instances, it was slick and shining, where there was more gastritis attending. It was generally tremulous, the skin was not so hot as in the other description of cases during the paroxysm, and after the heat subsided, a cold perspiration would continue for some time. In some particular cases, the pulse was not much increased in quickness from what was natural in health, the veins looked blue and distended, which, however, was more or less a symptom in all the cases, and the circulation seemed languid. It was not attended with that pungent heat which belongs to Typhus fever, nor were the end and edges of the tongue generally so red, especially in the onset of the disease. In the cases where death took place early in the disease, the patient seemed to die entirely of congestion; and I have often heard the remark, that they died, apparently, without sufficient cause. In some cases there were no symptoms of delirium until the patient was thought to be dying, and indeed, during the forenoon, one inexperienced in the disease would suppose there could be no danger in the cases. But after a while the finger nails would assume a blue appearance, and the nose, feet and hands, become a little colder. At this time frequent sighing would commence, and after a while an attempt in the system to re-act attended with great restlessness and difficulty of breathing, and after a while a little wandering of the mind, the pulse would become smaller and more thread-like and in a few hours imperceptible, whilst in many cases the dying patient would converse rationally on the subject of his approaching death, occasionally using an idle word or two, the bowels were sometimes disposed to secrete water and generally made a gurgling noise. The liver was in some cases extreme-
ly torpid, it being impossible to act upon it before the patient would die, where the proper treatment was omitted in the onset of the disease. In the fatal cases the first symptom of death was indicated by the tongue becoming pale, and being very much inclined to lie where it was pushed about with the fingers—suffice it to say, that the only difference which I could discover between congestive fever and the common inflammatory bilious and bilious typhoid fevers of this part of the country was in the degree of the congestion. I consider congestive fever a variety of bilious fever because it disappeared at the appearance of frost, independent of the similarity in symptoms between it and common bilious fever, the winter diseases, however, showed the epidemic tendency to congestion, but in a much less degree than the summer fever.

Treatment.—It appears obvious that as the causes of inflammation are essentially stimulating to the parts which constitute the seat of the disease, that the most appropriate remedies must be depletion, abstinence, and counter irritation, together with other remedies which act revulsively. It may be asked if stimulants and tonics are not sometimes used to advantage in the treatment of inflammatory diseases? In reply to which I would say from the theory I have laid down I infer, and I may add that experience bears me out in the assertion, that when stimulants are introduced into the treatment of any disease, their operation being to force the powers of life, they have a direct tendency to increase the disease, and if in any case a salutary effect is obtained from them, it is by making a strong impression upon the whole nervous system, and thereby increasing the natural powers of the system in gaining a due balance of excitement and in this way local diseases of weak action may be overcome. But not so with any considerable inflammation of delicate structures. When the principal local affection is seated in parts distant from those organs which are called vital, or in organs which are not endowed with great sensibility; and most especially where the brain is not much concerned in the disease, something may be done with stimulants; as a case in point, the eruption in scarlatina and measles, may be maintained upon the surface, and the disease cured by the use of stimulants and so may stimulants at all times be successfully applied in local inflammation of particular tissues especially of the
skin. But who would think of using stimulants either locally or internally, in cases of acute inflammation of the eyes, or brain, or any of the delicate structures which are endowed with a high degree of sensibility, until it has been so far reduced as to depend upon debility in the vessels concerned. Now as Congestive Fever is attended in most cases when fully formed, with considerable inflammation of the mucous membrane of the stomach and the bowels, it is clear that stimulants are inadmissible unless it be such as promote the secretions from the parts diseased and thereby do more good in the way both of depletion and alteration than they do harm by their stimulating effect. — Such may be said to be the effect of all the medicines by which we deplete the system, but when properly selected to suit the case, the slight stimulating effect is so greatly overbalanced by the beneficial effects of depletion, alteration and counter irritation, that it may be regarded as a matter of no consequence. But at the same time great caution is necessary in selecting the remedies. Stimulants and tonics then are improper remedies for inflammation unless under particular circumstances, and they may be regarded equally so in congestion. For if it be true, as it doubtless is, that congestion is produced by an increased flow of blood to a particular set of vessels in greater quantity than the vessels are able to circulate and in this way become choked up, and that the cause of this is local irritation, or at least the cause of its continuance in all cases when produced, it is certainly a fair inference from the principles laid down in the commencement of this essay, that stimulants will aggravate the local irritation as well as increase the general excitement, and if they fail either to overcome the irritation or to enable the vessels to unload themselves, they must aggravate the disease, and I feel authorized in saying, from what I have seen and observed, that the powers of life cannot be sufficiently forced, or in other words the natural action of the system cannot be sufficiently forced to do either, where either exists to a considerable degree. As a case in proof, I appeal to every Physician of experience to say if he has not often known congestions of the liver confirmed by the imprudent use of quinine, and thereby a foundation laid for other chronic derangements of the digestive organs, and if this is doubted, let them look to the drunkard, and from him they will learn how certainly the free use of ardent spirits
will keep up when once produced, or even excite and continue a congestion of the liver, and all its frightful train of consequences. I shall regard it as settled that stimulants, properly so called, and tonics, are improper remedies in congestion as well as in inflammation. It follows then, that the remedies most proper in Congestive Fever, are of an opposite character, to wit: depletion, abstinence, counter-irritation, and sudorifics.

**Venesection.**—I regard blood-letting as a highly useful remedy in all cases of acute inflammation, and equally so in congestion, if resorted to early in the disease. Its best effects are to be obtained in the forming stage of either, and more especially of the latter. After congestion is fully established, its effects become much more equivocal, and in some cases highly injurious. The best time for drawing blood, is during the first paroxysm.—In many cases, the second, and in some the third will answer the purpose, but seldom afterwards. By the timely use of this remedy the congestion is prevented either altogether, or so far that it may be easily managed afterwards when followed immediately by other proper remedies. The propriety of bleeding during the cold stage is doubted by many. My experience is, that whilst the system is not yet oppressed, it may be resorted to with great propriety, but should be immediately followed by warm sudorifics. I have seen some of the best effects when used in this way, that I have ever witnessed from the remedy under any circumstances in almost completely breaking up the disease, but I must say that I have sometimes attempted it when I have been obliged to stop the blood immediately, and resort to warm drinks, and would therefore recommend when the system is much oppressed, and there is reason to believe that the congestion is pretty well established, to prefer the hot stage for the bleeding, and if the congestion is fully established, and has been so for a day or two, it would be well to omit the remedy altogether. The quantity to be taken, and the repetition of the bleeding, are circumstances that must be left to the judgment of the practitioner at the time. Bleeding freely is more necessary in some instances than in others. But there is one thing that I can with propriety say from my experience in treating the inflammatory form of the disease, and that is, I could always cure my patients, in less than half the time, that had been bled early in
the disease, than it required to effect a cure where the remedy had been altogether omitted. My experience also bears me out in testifying, to the importance of cupping and leeching in relieving local affections. I would earnestly recommend to all physicians when called to a case of Congestive Fever, to pay the next visit in time to be with the patient at the commencement of the next paroxysm, so that no time will be lost in preventing mischief by letting off a little blood in time. If the pulse yields easily to pressure and is very quick, it may be regarded as too late to bleed. The next set of remedies are such as promote secretions from the elementary canal.

Cathartics and Alteratives.—It will be perceived that I omit emetics altogether in the treatment of Congestive Fever. My reasons for doing so are that there is often too much gastritis to admit of the irritation from an emetic, and I further consider them ill suited to relieve congestion when formed, as their operation is both too hasty and too prostrating, though in the absence of much gastretis, and in the forming stage of congestion they might be used to some advantage, but the circumstances admitting their use so seldom occur, that I consider them unsafe remedies to recommend, especially in the inflammatory form of Congestive Fever. But to proceed to the consideration of the remedies under this head at once. My experience has induced me to reject Tartar Emetic, even in broken doses as an alternative, finding in most cases, too much gastro enteritis to admit of a favorable operation from it, and for the same reasons I object to the Pulvis Antimoniales or James' Powder. There seems to be a suitable relation, or proper adjustment between the inflammation and the remedies to be used to relieve it, that ought to be considered in directing our choice of suitable remedies. For it will doubtless be conceded that there is a certain degree of action that is favorable to proper secretion, and that any excitement beyond that, has a tendency to alter or suspend it. Drastic cathartics are also objectionable as tending to excite too much, and produce serous discharges. It would seem from what has been said under this head, that the gastro enteritis was regarded as the main hydra of the disease, but it will be recollected, that congestion has been stated to exist to an extraordinary degree, and from what I have seen of the disease, I am sure that I can safely venture the opinion that whoever expects
to cure Congestive Fever of any form, by attending to the inflammation alone, will be disappointed and subjected to much vexation and trouble. Cathartics of a suitable character are absolutely indispensable, and Calomel is decidedly the best of all. After the bleeding, if it is necessary, a dose of Calomel and Jalap generally operates the most favourably. It should be proportioned so as to operate promptly and freely. I found that it had the best effect in arresting the inflammation and congestion by operating freely, and producing but little irritation. Whenever I could see the patient in time to bleed and purge freely with Calomel and Jalap, before the inflammation or congestion arrived to a certain stage, I always found with due attention afterwards the patient was sure to recover.

In some cases where the bowels were disposed to watery discharges, the Jalap was too drastic, but on the other hand heating cathartics, although not so liable to produce watery discharges, were too apt to aggravate or produce an obstinate state of inflammation, I allude particularly to aloe, I found it in the first stage of the disease objectionable in the form of Cook’s pills. In all such cases, I found Calomel alone the best, and that it was better not to interfere with it by giving other medicines to work it off until it had time to alter that condition of the bowels. I have known even two tea spoonfuls of castor-oil to produce a dozen or fifteen watery discharges, if given before the Calomel had time to effect the proper change, whilst the Calomel when let alone, had the most favorable effect. The liver was always difficult to operate upon in proportion to the length of time that the treatment had been postponed. If the treatment had not been commenced before the stage proper for bleeding had passed over, and the congestion fully formed, it sometimes required enormous quantities of Calomel to start a secretion from the liver and bowels, but death was inevitable without it, as far as my experience goes. I have given in some cases upwards of a hundred grains a day for the first two or three days of the treatment, and I believe saved my patients by it, and I have no doubt but that 20 or 30 grains a day would have been sufficient if the treatment had been commenced in time. In all cases where very large doses of calomel have been given, it ought not to be worked off under something like fifteen or eighteen hours, and more calomel should be given as soon as the first dose is fair-
ly worked off. A great deal is gained by keeping up the impression for a sufficient length of time. Castor oil, or some mild cathartic, is best to work off large doses of calomel, and whenever it is necessary to give large doses, if the bowels are not too irritable, Ipecac should be combined with it. In fact, I have always discovered that whenever Ipecac was admissible, much less Calomel might be made to answer the necessary purpose. It will be observed, that I have supposed some obstinate cases of congestion. I would remark at the same time, that the size of the dose of Calomel, or the quantity given in the day, must be regulated by the degree of congestion, for I have noticed where there is less congestion, the same sized doses would prostrate, that are found necessary and safe in cases of great congestion, because there is much greater torpor of the system in one case than in the other. As soon as the secretion is started from the liver and bowels, and of proper consistence, as little calomel should be used as will have the effect of keeping up the secretions. I have known patients prostrated by eight grains, given every fourth hour, when the patient had been doing well under half the quantity for a day or two, and when the eight grains had not purged any more than the four grains had done, but the prostration was occasioned by over irritation, when the bowels were in an excitable condition, so that much depends upon the judgment and experience of the Physician in the management of such cases. It is only in cases of great congestion, and consequently great torpor, that very large doses are proper, but they are absolutely necessary in such cases. There is, however, one remark which I will make as the result of experience, and that is that half the quantity of calomel will answer the necessary purpose when not worked off under fifteen or eighteen hours, that will be found necessary if worked off in eight or ten hours. I think much good is derived from the alterative effect of the calomel, while remaining in the system, for that reason, I prefer giving calomel in broken doses when the secretions are once properly started. It will be necessary to look into the mouth and throat every day, to see if Ptyalism or mercurial ulcers can be discovered, and for fear of producing such effects I would advise the calomel to be laid aside and some other cathartic substituted, whenever the secretions of proper consistence and appearance can be kept up without the use of calomel.——
This can be ascertained by the trial occasionally of such cathartics as will not irritate much. My experience is, that after the system has been pretty well brought under mercurial action, even before Ptyalism has been produced, the calomel may be dispensed with, and there will be no impropriety in trying it after the symptoms of congestion have sufficiently given way.—The purging must be kept up as long as the symptoms of congestion continue, and as long as the secretions are much vitiated. After the disease is properly established, I have never seen a case cured without the discharge of a considerable quantity of black secretions. This kind of secretion seems necessary to relieve congestion, and is secreted by the bowels as well as by the liver. It may be ascertained from which it has mostly come by pouring water on it, if from the liver, it will give the water somewhat of a yellow tinge, which will show itself on the sides of the vessel and mixes with the water, while that from the bowels will not. I must appeal again to my experience when I say that Congestive Fever requires more purging than any other fever with which I have ever been acquainted, that is, if the disease is fully formed before the treatment has been commenced, and that the purging must be continued until every vestige of the congestion is removed, even if it should be necessary occasionally to give the patient sufficient rest for the energies of his system to recruit between the doses; otherwise if he gets up, he will be liable to chronic congestions of the liver and digestive organs. The greatest obstacle that lies in the way of treating inflammatory congestive fever, is the inflammation of the alimentary canal. It requires great caution to keep from increasing the gastro enteritis, or perhaps it would be more proper to say, it requires great caution in the selection and regulation of cathartics, to cure the gastro enteritis which attends the inflammatory form of Congestive Fever, whilst relieving the congested organs, and I contend that the surest and best mode of curing congestion is by purging; but in obstinate cases, whilst the cure is advancing, much aid may be derived from the next course to be mentioned, and that is,

Abstinence, Rest, Dieting and Opium—So far as abstinence and rest may be regarded as remedial in the cure of Congestive Fever, I would say that no reliance should be placed upon such means, except as merely auxiliary; but it is proper to rest a pa-
tient sometimes for a day or two in the course of the treatment, if he should be in danger of being exhausted. Abstinence is necessary to abate excitement but cannot be relied upon in violent cases. Inflammation, and congestion especially, must be arrested speedily by direct abstraction of the causes of irritation, or else the disease would often run on to an incurable state before any benefit could be derived from abstinence. As well might we talk of curing a violent attack of cholic by abstinence as to cure by it a violent case of fever, and above all others Congestive Fever. It is impossible that very high excitement, and more especially congestion can be relieved soon enough in this way to prevent fatal consequences in many instances. It is only suited to particular states of disease as an auxiliary means. So far as dieting may be noticed in addition to what has been said of abstinence, and as a necessary means of sustaining life, like purging, it may be said to be indispensable, but should be regulated to suit the case. In most cases of congestive fever, it should be light and mucilaginous, to soothe and allay irritation of the stomach and bowels, and thereby abate improper excitement of the parts diseased, whilst exhausted nature is sustained by it. An anodyne to allay diseased irritation, is highly beneficial as soon as the inflammation and congestion is sufficiently relieved to admit of it; thus it answers a valuable purpose in allaying the irritation of an active cathartic or any other irritating medicine. But more is necessary to be said of opium than merely to allude to its effects in allaying the irritation from a dose of medicine. Opium, in acute inflammation attended with high excitement, is inadmissible, on account of its stimulating properties. In congestion, it is objectionable both on account of its stimulating properties and its known effects in suspending secretion: nevertheless, it is not so objectionable in congestion as in high inflammation, because simple congestion bears stimulants better than inflammation, and its properties in suspending secretion may be counteracted in most cases by combining with it other medicines. I have found opium in congestive fever, as well as in other fevers attended with much irritation, as a valuable remedy so soon as the inflammation is sufficiently abated to admit of it; but I must say, that I regard it a very dangerous stimulus in the early stage of the inflammatory form of congestive fever, and indeed I found every thing dangerous which was
calculated to excite, and which did not act sufficiently, by way of promoting secretions, to counteracting its stimulating effect. I have seen many cases where inflammation was fixed upon the brain by a teaspoonful of paregoric. I have always been able to use opium much earlier in the disease when bleeding and free purging had been early resorted to. Such was the obstinacy of the inflammation and congestion in some cases where bleeding had been omitted and purging had not been resorted to sufficiently early, after purging my patients down to a state of prostration, I would be driven to the necessity of restraining them from the use of every thing but cold water and water gruel for days, until their system would rally its energies, and then purge again before they would bear the least stimulus.

The next remedies to be noticed are such as are calculated to excite irritation in other parts of the system, and thereby to divert the excitement from the parts diseased, and are denominated counter irritants. Of this class, blistering plasters are unquestionably of first importance. The proper time for blistering is after the excitement is considerably reduced. In inflammatory cases, if early applied, they produce too much general excitement; the point to which the excitement must be reduced must be left to the experience of the physician. Next to blistering, rubefacients are most to be relied upon; hot applications to the parts, left without sufficient excitement, are by no means to be overlooked; and finally, whatever is calculated to produce counter irritation, may be used to advantage in the way of local applications. Internal remedies act in part by producing counter irritation, but under this head, local applications to the external surface are particularly alluded to.

Sudorifics.—Much benefit is likewise to be derived from medicines calculated to excite perspiration, but like blistering, after the disease is fully established, the excitement must be reduced to a certain extent before they can be used to advantage. External warmth and warm drinks may be first used, because they excite least. When the inflammation and congestion is sufficiently subdued to admit of the use of opium, the Dover's powder is decidedly most to be relied upon, but it is better that it should be assisted by warm drinks and warm applications. So far the treatment detailed is in reference to the inflammatory form of congestive fever—the same principles will apply to the
typhoid form of the disease, making due allowance for the difference in the intensity of the inflammation, and the strength and tone of the nervous system. The typhoid type of the disease being attended with a lower grade of inflammation, and a weakened state of the nerves, will not admit of depletion to the same extent that the other form of the disease requires. The lancet should be sparingly used, and never at all unless it is in the forming state of the disease: but at the same time, when the disease is fully established, it requires a great deal of purging also. The purging, however, must be carried on in a slow manner, and the strength of the patient closely watched, and the patient rested whenever it seems necessary. The inflammation being of a lower grade, will admit of warm cordial drinks and a more nourishing diet, whereby the patient’s strength may be greatly assisted. Opium may be used much earlier in this form of the disease than in the other, and is a highly useful remedy in combination with calomel, and sometimes ipecac.

External warmth and all the sudorific medicines, together with blistering, may be more early applied, and constitute an important part in the treatment of congestive typhoid fever, but it must be distinctly understood that the patient is to be purged according to his ability to bear it, and that the purging is not to be dispensed with, until the congestion is broken up. In this form of the disease, as I intimated before, alterative doses show their finest effects. But after all that I have said or can say, I would advise a strong effort to be made in every case to break up the disease in the forming stage, for when fully formed it is troublesome and highly dangerous. My own experience is that when undertaken in time, it can often be arrested in this stage.—If it comes on with a chill, and an intermission or decided remission can be procured on the first or second day, it may be arrested at once by the liberal use of sulphate of quinine, opium, blisters, and sudorifics. At the same time calomel should either be given in combination with the opium and quinine or it should follow as soon as it is discovered that the disease has been arrested in its course, in order to break up what congestion may be left, and to effect a radical cure. When the disease is fully established, the most difficult part of the treatment consists in happily adjusting the size of the alterative doses to suit the degree of irritation and inflammation of the alimentary canal so as to prevent exhausting
the general strength of the patient too fast by over-irritation or on the other hand by withholding the necessary quantity of the remedy and allowing the disease to hold the advantage over the powers of nature until it brings about that physiological death of the stomach termed collapse. It will here be observed that I recognize a specific effect in the calomel and other medicines, calculated to promote secretions from diseased parts, but it is not in that broad sense which is claimed by some for remedial agents. For instance, I do not contend that calomel given in doses of any size will produce that specific effect which is calculated to cure a particular state of inflammation, but that the specific action of the medicine best calculated to cure a particular state of inflammation is to be brought about by properly adjusting the size of the dose to the state of the inflammation, the cure being effected by promoting secretions and producing suitable counter-irritation. The fact that, the same quantity of any stimulant applied to parts possessing different degrees of excitability, will produce different results, is a truth well founded in the physiology of the system. When an increased quantity of blood to a certain amount is propelled to a secreting surface, the quantity of secretion from the part is increased, but a still higher action may be created and the secretion is stopped. This fact may be testified to by every one who has had a bad cold. Many other facts of a similar kind might be referred to. And if allowed the liberty of drawing illustrations from another science, abundant proof might be obtained from observing the operations of the mind.—How diversified are the effects of grief and joy when excited in different minds under precisely similar circumstances? Such, doubtless, are the effects of all stimulants applied to the system.
PART II.—REVIEWS AND EXTRACTS.

On Simple Ulceration of the Stomach; with Observations on those Forms of Gastric Irritation which more commonly precede and accompany it.

By Langston Parker, M. R. C. S.

The general pathological character of the disease I am about to describe is that of a simple round, or oval ulcer, with edges generally thickened and elevated, in which the mucous and muscular coats of the stomach are more or less completely destroyed, and the bottom of the ulcer is formed by the peritoneal coat of the stomach; or, where the ulcers have healed by a membrane, the result of the process of cicatrization.

The anatomical characters of the disease consist in a round, oval, or irregular shaped ulcer, more or less deep, occupying various positions upon the internal surface of the stomach, more frequently however situated in the cardiac portion, the greater curvature, or, in the vicinity of the pylorus. The edges of these ulcerations invariably present considerable thickening, so that in many instances, they appear, as it were, dug out into the substance of the thickened adjacent coats.

In ulcers of moderate size, the mucous and muscular coats of the stomach are commonly destroyed, and the bottom of the ulcer is formed by the peritoneal coat, sometimes very much thickened, a membranous cicatrix, or the base is rough, uneven, and fungous, and shows that the process of ulceration is still going on. M. Cruveilhier has I think, committed an error, in stating that these simple ulcers of the stomach are generally single. In a great number of instances they are not only double, but even multiple, and the use of a moderate glass, or even the naked eye, will shew in many instances where a large ulcer seemingly exists alone, that the mucous membrane is covered with many small spots of ulceration which a superficial examination might pass over.

One great peculiarity of this species of ulcer is its tendency to cicatrizate under proper medical treatment. In some instances the cicatrices of these ulcers precisely resemble those of a badly healed burn, and they have likewise the same tendency, if the ulcer be large and deep, and its edges very much elevated, to pucker up, and draw together the surrounding parts, so that the stomach is contracted and deformed, its peristaltic motion impeded or destroyed, and the process of digestion in this manner rendered laborious and painful.

All the cases of simple ulcer I have had an opportunity of examining after death have presented concomitant marks of inflammation in other parts of the stomach; these have consisted in general increased vascularity of its mucous membrane—a punctiform or arborescent redness, general or partial—a congested and distended state of the veins of the submucous cellular coat, with general or partial thickening of the other tissues.

The terminations of ulceration of the stomach are four;—in three modes fatally, in one favourably. It may terminate in erosion and perforation of the stomach;—in one way by the continuance of the ulcerative process, and in another by the weight of the food pressing continually upon a thin cicatrix, or the centre of an ulcer occupying the greater curvature or cardiac portion of the stomach. Simple ulceration of the stomach may terminate secondly in a fatal hematemesis, the process of ulceration, by its continuance, opening a large venous or arterial trunk. It may in a third way become fatal, and wear out the patient by the constant and violent pain it occasions, destroying his digestive powers, impeding nutrition, and producing gradual emaciation, and death. Fourthly, the ulcer may cicatrizate, and
the patient become perfectly well, though even in this mode of termination there are two evils to dread—the recurrence of the disease from slight exciting causes, and the rupture of the cicatrix from the pressure of food, or from violent exertion.

CASE, illustrating the History, Symptoms, Pathology, and mode of Treatment of Simple Ulceration of the Stomach.

A remarkably stout man, a free liver, in the middle walks of life, began to suffer from uneasiness after taking his food at the age of eight and twenty years. He then suffered from weight, distention, and flatulence, with nausea after eating; he had also occasional vomiting. These attacks were relieved by medicines prescribed for him by the physician, under whose care he was at that time placed, but were prone to recur when the patient returned to his customary habits of living. When I first became acquainted with him, eight or ten years ago, he complained of fixed pain in the epigastric region, which was much increased by pressure and taking food; the pain was not at that time constant, it was most distressing after eating, and accompanied by much flatulence and distention. By restricting the patient to a milk and farinaceous diet, sponging the epigastric region frequently during the day with hot water, and exhibiting some mild carminative aperients daily for a short time, the symptoms subsided, and he again returned to his occupation in apparently good health.

After a time the pain again returned in a more violent and obstinate manner than before. It assumed the same character, was worse after eating, and accompanied by some tenderness and heat in the epigastrium. It did not now yield to the remedies which had before relieved him, but was much mitigated, and for some time entirely disappeared after the application of small relays of leeches, and continued counter-irritation over the epigastric and left hypochondriac regions.

My patient again returned to his accustomed occupations and mode of living, and after a lapse of eighteen months returned again with his pain as bad, if not worse than before. He was again relieved, I may say cured of his distressing uneasiness, by the administration of small doses of the muriate of morphia, and a repetition and continuance of counter-irritation; observing, at the same time, a strict dietetic regimen.

In this manner, during the last ten years of his life, was this patient relieved or cured six or seven times of the painful affection of his stomach, which as constantly returned, when he resumed his customary habits of living upon mixed and stimulating food and drink.*

After having lost sight of him for some time, during which period his ailements were so slight as not to lead him to seek medical assistance, I was suddenly called to him during a violent attack of hæmatemesis, in which he vomited from two to three pounds of blood. I may here observe that, during the previous progress of disease, my patient had never vomited blood, or those black discharges which are peculiar to ulceration of the stomach. He had rarely nausea, and if he had an attack of vomiting, which did not take place more than two or three times during the whole progress of his disease, he vomited his food only. He was, however, occasionally subject to discharges of blood by stool, and at other times when this was not the case, his stools were black as pitch; these black discharges we shall afterwards speak of, but when they occur with such gastric symptoms as the present, and independent of any hæmorrhoidal or other disease of the rec-

* This part of the history of the case confirms a remark which I have made in another part of this paper, and which I find confirmed by the experience of M. Cruveilhier, viz: that ulceration of the stomach, after having, by care and judicious treatment, been brought to a state of cicatrization, is exceedingly prone to recur from slight dietetic errors, or even from strong mental impressions. The physician has seen a case similar to the one I have recorded, in which the disease returned three times, at intervals of from two to four years.
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Tum or anus, they are symptoms indicating very strongly the existence of ulceration of the stomach.

To the vomiting of blood succeeded great languor and depression, palpitations, hurried breathing, with attacks of severe pain in the stomach and bowels, which came on daily, sometimes twice or thrice in the twenty-four hours. The pain seized him suddenly, and left him with a discharge of wind. He had great tenderness and pain in the epigastrium and right hypochondrium; the skin had a pale, sallow, blanched appearance, whilst the tongue did not deviate in any appreciable manner from a perfectly natural condition; it had the same pale appearance as the skin; no coating, no redness, no development of the papilla.

From this time to the period of his death, varied plans of treatment were adopted, with a view of relieving the epigastric pain. The trisnitate of bismuth with the ponderous carbonate of magnesia and the muriate of morphia certainly afforded very marked relief; amongst many remedies that were employed this was the most efficacious. Benefit was likewise derived from the carbonate of iron with rhubarb, and a sedative. Small blisters were also used, with a strong solution of the extract of belladonna applied warm on a piece of flannel and laid over the epigastrium. Suddenly and without any appreciable cause his breathing became embarrassed, cough came on, and terminated in the expectoration of mucopurulent matter to the extent of three half-pints daily.

Under the continued irritation of pain; and bronchial disease, my patient sank, three weeks after the attack of hæmatemesis, at the age of 52. I believe the immediate cause of his death to have been bronchitis. I am firmly convinced that from his stomach disease he would have recovered.

Inspection of the Body, 28 hours after Death.—The coats of the stomach were generally thickened, more particularly the peritoneal, and this more marked in the pyloric half of the viscous. Great vascularity, and thickening of the mucous coat generally; the veins of the submucous cellular tissue gorged with black blood. The greater curvature contained a large, deep ulcer, perfectly healed, with thickened and elevated edges; the process of cicatization had puckered up, and contracted this portion of the stomach to some extent, just as the skin is occasionally contracted by the healing of a burn. The cicatrix of another large ulcer existed in the immediate vicinity of this; here the healing process had been completed without puckering or contraction of the surrounding mucous membrane. Several smaller ulcers were formed in different parts of the stomach, the one immediately below and between the two large ulcers was rapidly healing; in the two lower ones, which I imagine gave rise to the gastric symptoms during the latter weeks of disease, the process of ulceration is still going on. The lowest, I have no doubt, gave issue to the blood vomited three months before death.

The spleen was hypertrophied to some extent. The liver in the same state. The pancreas much enlarged. The pericardium intimately adherent to the heart; the muscular structure of the heart very pale and soft.* Several adhesions of the pleure on both sides; the bronchial mucous membrane vividly injected; general congestion of the substance of the lungs.

Remarks.—This case is worthy of notice, in many points of view, and exhibits in its history and morbid appearances most of the peculiarities of that disease which has been termed by Cruveilhier simple ulceration of the stomach; a disease which has never been fully described in this country; but partially by the pathologists of France.

*These two pathological phenomena, viz.: adhesions of the pericardium, and pallor with softness of the muscular substance of the heart, are commonly observed, after death, from prolonged gastric, or gastro-hepatic diseases. See the cases; &c., detailed in my work: "The Stomach in its Morbid states."
We will dwell for a moment on the history of this case. In the first place we observe the symptoms of indigestion, as they are commonly termed, to have commenced about the age of eight-and-twenty, and to have harrassed the patient more or less during the whole of his subsequent life. It will be remarked that the attacks of stomach disease were at first relieved by medical treatment and strict attention to diet. As disease proceeded they became more difficult of cure, and what was at first a mere active hypervemia of the stomach, terminated in confirmed chronic gastritis, and subsequently in ulcerative inflammation of the mucous membrane. I conceive the facts of this case will admit of no other satisfactory explanation.

From examination of the accompanying preparation, it will appear, that the ulcers of the stomach had been formed at different periods, and certainly gave rise to those violent attacks of pain, which the patient from time to time experienced at intervals, sometimes of two or three years. I believe the process of cicatrization was favoured by the local depilations, and counter-irritation to which my patient was subjected, when his pain became so violent, as to lead him to give up his occupation and seek for medical relief. Under a perseverance in a strict regimen, small local bleedings, counter-irritation, and minute doses of morphia, &c., he became perfectly well, and it was not till after a course of living upon a full and stimulating diet, that the attacks of inflammation and pain again came on.

On examining the morbid appearances in this specimen, we find that it exhibits almost all the varieties of which the simple ulcer is capable. In the first instance we notice the cicatrization of the large ulcer to be accompanied by that degree of contraction of the mucous membrane in its vicinity which is commonly observed in the skin after the healing of burns. The very healing of these ulcers may become a source of lasting inconvenience and danger, for if they be situated near the openings of the stomach, in the vicinity of the cardia or pylorus, the contraction of the cicatrix directly shrinks the orifice, and the passage of food to or from the stomach is rendered more or less difficult. The pathological anatomy of Mr. Cruveilhier contains the account of a patient in whom the cicatrization of simple ulcers had contracted the pyloric orifice of the stomach so much that it would barely admit a goose-quill. He had originally presented the symptoms of ulceration, which had been, by an appropriate treatment cured, but returning to the pleasures of the table, and being a great eater, had suffered the most agonising pain after meals, till he, at length, sank from a succession of hemorrhages, which M. Cruveilhier thinks arose from exhalation from the surface of the congested mucous membrane of the stomach, since no vessels of any magnitude could be detected from whence the blood could have issued.

It is thus that ulcers of the stomach, in their healing, sometimes lay the foundation of diseases as formidable as those which characterise their open condition.

The second ulcer has cicatrized without this contraction of mucous membrane, at least with a very trifling degree of it.

Perforation of the stomach has been prevented, in this instance, by the extreme thickness of the peritoneal coat of the stomach. This I imagine to have been the result of that inflammation which was going on in the coats of the stomach, previous to ulceration of the mucous membrane, and to which is owing that general thickening of the parietae of the viscus, which is very remarkable.

The thickening of the peritoneal coat appears a provision of nature for preventing that perforation of the stomach, and discharge of its contents, which must otherwise have taken place; and hence it is that perforation of the stomach, the consequence of ulceration, in males is less frequent than in females; the ulceration in the former, generally succeeding to a general chronic gastritis, accompanied by thickening; whilst in the latter, the af-
fection is due to a localized inflammatory action, occupying a very small portion of the mucous membrane, where the thickening is generally confined to the edges of the mucous membrane surrounding the ulcer.

**General Description of the Symptoms of Simple Ulceration of the Stomach.**—The first of these is a fixed acute pain, occupying the epigastric or left hypochondriac regions, the centre of the sternum, or some point on the dorsal portion of the spine, between the scapulae. This pain is the symptom "par excellence," it is that, and generally that only which attracts the patient's attention; from it he may be for some hours occasionally free; but never is so entirely during the day. For many hours out of the twenty-four this corroding uneasiness harrasses the sufferer, sometimes in the morning, at others in the evening, sometimes in the intervals of meals, but generally it succeeds to them, and commences with more violence after the dinner meal, continuing without abatement till late in the evening, when it commonly subsides, and leaves the patient comparatively easy for the night, till breakfast brings back a return of his sufferings. The seat of this pain is, as I have just stated, variable. I attended a gentleman for some years with simple ulceration of the stomach, who always suffered most severely in the centre of the dorsal portion of the spine, and along the course of the intercostal spaces; in this patient the epigastric pain was not absent, but in some measure masked by the greater suffering he experienced in the back and sides. These parts were very sensible to pressure, and he invariably experienced relief of the gastric uneasiness, from the application of small relays of leeches over the tender spot on the spine; this, during the latter months of disease was the only remedy that afforded any marked relief. This patient died ultimately from violent hæmatemesis.

In many other instances the pain is confined to the centre of the epigastrium, which is the chief, and indeed the only seat of suffering.

Although the act of taking food occasions the patient so much uneasiness, the appetite in many cases of ulceration of the stomach continues good, and in some instances is morbidly increased. The remark of patients labouring under this disease is commonly "I could eat any thing but dare not." In certain instances the appetite is defective. This I think arises most commonly from extensive concomitant inflammatory action, and where the ulceration is complicated with other lesions of the mucous membrane.

The tongue is in a great majority of instances clean; in some not the slightest deviation from the healthy condition can be detected; it is neither redder, nor less moist than usual, and even when ulceration of the stomach has been accompanied by profuse bloody vomiting, we observe the tongue to present that blanched condition which is common to other organs in this state, and not to offer that contrast to the external skin which is so remarkable in the advanced stages of pure chronic gastritis, where the vivid redness of the protruded tongue presents a striking contrast to the sallow, pallid countenance.

I have, in my work on the stomach, adduced a variety of facts, noticed by myself, and supported by the corroborative testimony of Louis and Andral, of the uncertainty of the state of the tongue as indicating any particular pathologic condition of the stomach. The tongue certainly bears no direct relation to the kind, or degree of disease existing in the stomach. Doctor Stokes has remarked that too much attention is, and has been paid to it, with this view, by British practitioners; whilst Louis says "we should examine the tongue for itself merely, not to ascertain by it what is the matter with the stomach." I have rarely met with a case of simple ulceration of the stomach, where constipation of the bowels has not been a prominent and most distressing symptom; and one which is a source of great anxiety both to the patient and his attendants. The attacks of pain are more violent and frequent whilst constipation is present, and again there is great
difficulty in framing an aperient that will relieve constipation, without producing great pain during its operation.

Nausea is not a common attendant upon this disease, but sudden and sometimes fatal vomiting of blood, or a black fluid, comes on at an earlier or later period. M. Cruveilhier considers the black vomiting peculiar to, (and almost pathognomonic of,) ulcerations of the stomach, to result itself from blood, slowly secreted from an ulcerated surface, and rendered black by its sojourn for a longer or shorter space of time in the cavity of the stomach, and its mixture with the acids of the gastric juice.

Bloody vomiting, in ulceration of the stomach, is by far the most dangerous symptoms we have to contend with. I have certainly seen a patient recover from ulceration of the stomach after several attacks of severe hæmatemesis; these cases are, however, comparatively rare. Discharges of blood rarely occur early in the disease, and when they come on to any extent, a patient is worn out and emaciated by constant pain; they are very commonly fatal. I have more than once seen persons, with ulceration of the stomach, die in the very act of throwing up blood.

Before any vomiting of blood or black fluid takes place in ulceration of the stomach, it will very often be found that these matters are passed by stool. The blood is slowly exhaled, mixes with, and colours the food and fecal matter, and passes off in stools as black as pitch. This symptom, considered with others, will leave no doubt on the mind that blood is slowly oozing from an ulcerated surface; and it will lead to the adoption of measures to prevent the sudden vomiting of blood, which commonly succeeds to the black discharges by stool, of which these latter are, in many instances, premonitory symptoms.

The manual examination of the epigastric region contributes little to confirm our diagnosis in this disease. It is sometimes highly sensible to pressure, at others perfectly indolent. In the advanced stages of disease in the male, where the coats of the stomach are commonly thickened, a tumor may be detected, but, apart from the existence of other symptoms, we cannot say whether this tumor result from mere thickening, the result of chronic gastritis, or whether this thickening be accompanied by ulceration or cancer.

The general appearance of patients suffering from ulceration of the stomach, is haggard and anxious in the extreme. Defective nutrition has produced a paleness in their tissues which is very remarkable; the conjunctiva has sometimes the appearance of the whitest marble, and the whole aspect of the patient, in the advanced stages of disease, even when hæmatemesis has not taken place, is that of a person blanched by repeated hemorrhages.

We must here enquire into the nature of those symptoms of gastric irritation which precede the actual state of ulceration, in other words, we must look for the causes of this disease; these, I believe, will be found in certain states of gastric irritation, which are very much under the control of medical treatment.

M. Cruveilhier says, "The history of the causes of simple ulcer of the stomach is involved in deep obscurity; or, rather, this disease recognizes all the causes of gastritis for which it has been mistaken. But why is only one single spot of the stomach affected, whilst all the other parts of the stomach are in a healthy state?" It is singular so accurate a pathologist as M. Cruveilhier should have made a statement disproved even by many of his own cases, by the remarkable one detailed in this paper, and by the pathology of the stomach generally. The simple ulcer is met with as frequently double, triple, or multiple, as it is single; and I have never seen a case where this organ has not presented the most unequivocal signs of long continued inflammatory action, most frequently marked by general or partial thickening of its coats. Not only are the consequences of inflammation to be found in the stomach after death from ulceration, but the whole class of symptoms,
which precede and accompany ulceration during life, are clearly dependent upon inflammation, as the results of inflammation sufficiently prove.

Ulceration of the stomach succeeds more particularly to two conditions of gastric irritation, which it is important here to notice; these are inflammatory indigestion, or certain forms of gastritis in males, and those affections of the stomach which occur in females whose menstruation is irregular, who are the subjects of hysteria, or who are confirmedly chlorotic. These forms of irritation are clearly of the inflammatory kind, though essentially modified by the state of the economy in which they occur.

I shall endeavour to give a brief account of each of these forms of gastric irritation which I have seen terminate in fatal ulceration of the stomach. The case detailed in the earlier part of this paper, will illustrate in its history, the origin and progress of that form of indigestion which is evidently of an inflammatory character. The fresh attacks of this disease are generally marked by fullness after meals, distention of the stomach, eructations, heartburn, nausea, pains in the back and sides, uneasiness in the epigastrium, terminating in fixed and constant pain, aggravated by taking food; strong beating of the heart, throbbing of the carotids, head-ache or stupor succeeding a meal.

It is true that in a vast number of instances the inflammatory forms of gastric irritation never terminate in ulceration of the mucous membrane of the stomach, though I believe, from some experience in this class of diseases, that ulceration is a more frequent termination of them than is generally supposed. This opinion is likewise corroborated by the experience of M. Cruveilhier, who, in his second paper on this subject, states this disease to be much more frequent than he had at first supposed.

I have seen the inflammatory form of indigestion, which is a true partial gastritis, terminate in ulceration in five months, from its first commencement, in a patient who had never, previous to this period, suffered in the most remote degree from any affection of his stomach.

M. Cruveilhier believes in the existence of acute ulceration of the stomach, and adduces the case of a patient who died from the disease, twelve months after a slight attack of cholera, prior to which he had been in perfect health. He mentions a second case terminating fatally in ten days from perforation, the subject of it never having been ill before this period, the anatomical characters of the disease shewing it to be a recent ulcer. A third case is mentioned succeeding to indigestion of some months standing, fatal by perforation.

The most insidious and alarming forms of irritation in the stomach, if we regard their occasional termination, are those painful affections, and disordered conditions of the digestive powers which occur in young females, particularly where there is any disorder in the functions of the uterus. It will be found on examination that most patients who are chlorotic suffer more or less from some form of irritation in the stomach or bowels.

Some complain of pain after food, nausea, daily vomiting, diarrhoea, loss of appetite, with heat and tenderness in the epigastrium. Accompanying these symptoms there is commonly a dry, red tongue, and the patient suffers from a most distressing weakness.

Not unfrequently, in the midst of these symptoms, or after some partial degree of amendment, the patient is seized with acute pain in the bowels, and suddenly sinks and dies. On examination the stomach is found perforated in the centre from ulcer, with thickened and elevated edges, the immediate vicinity of which exhibits marks of inflammation and thickening of the coats of the stomach, whilst the remainder are generally very thin, and the mucous membrane in all other points presents a remarkable pallor or whiteness, and is almost exsanguined;—a totally different condition from that observed in the mucous membrane of patients dying from that ulceration of the stomach which is the result of general inflammatory indigestion.
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or pure chronic gastritis. In the former instance the disease is generally confined to a very small portion of the mucous membrane; it is a localized inflammatory action occurring in a constitution in an extreme degree of weakness or irritability, and seated in tissues so badly nourished that they present but little resistance to the fatal termination of the disease in perforation of the coats of the stomach.

I conceive the difference of the circumstances, under which the disease we are now considering occurs (in the male as the result of inflammatory indigestion, on the one hand, and in the chlorotic, or hysterical, or debilitated female already exhausted by uterine irritation on the other,) to be one most powerful cause why the disease so much more frequently terminates in perforation in the latter than in the former.

I know of no instance where cicatrization of an ulcer of the stomach has been shewn to have taken place in the female. In the male, the case of Professor Beclard will suggest itself to the minds of all, whilst the case now detailed is another and perhaps the most remarkable hitherto recorded. Cruveilhier states that the simple chronic ulcer has a tendency to cicatrize, and Dr. Abercrombie says that he is satisfied that he has seen the cicatrices of such ulcers when the patient has died of another disease, after having been for a considerable time free from uneasiness in the bowels. The latter authority however records nothing definite upon the subject.

I believe ulceration of the stomach to be more frequent in the male than in the female, whilst the fatal terminations of this disease by perforation are much more frequent on the part of the female than the male. Mr. Pritchard of Leamington, in a pamphlet on the organic character of hysteria, has collected from various authorities eighteen cases of perforating ulcer in the female, whilst he has only been able to meet with eight recorded ones of the same disease in the male.

It is true that the disease is more frequently verified after death in the female than in the male, but I think it will be found that the disease is more prone to catrization in the male from the circumstances I have mentioned, and again in the male its fatal terminations are more frequently by hemorrhage, and gradual exhaustion, than by perforation, from the simple circumstance that the coats of the stomach generally, or those merely in the immediate vicinity of the ulcer, are most commonly the seat of considerable thickening, the consequence of long continued chronic inflammation. We do not observe the same causes in the female.

Of the Treatment of Ulceration of the Stomach.—The treatment of ulceration of the stomach must be modified to suit the particular kind of affection we are called upon to manage, and hence it must be considerably different in the male, where the disease is the result of gastritis or inflammatory indigestion in any of its numerous forms, and in the female where it occurs in the midst of disorder of the health generally, and upon which, in such instances, I have no doubt it very materially depends.

I shall not here notice any plan of treatment adapted to the forms of inflammatory indigestion, having said enough on this subject in my previous work.

The grand indication in the treatment of ulceration of the stomach is to bring about cicatrization of the ulcer, and this I believe will be best accomplished in the following manner, at least it is the mode I have generally found most successful.

The patient must be limited to the smallest possible quantity of food under which he can be tolerably comfortable, but the wants of the stomach on this head must be satisfied, for if any degree of craving, or irritability be induced by the abstinence, it is carried too far. It must have been noticed by all that have had the care of patients with ulceration, that they are tolerably easy except after a meal. They should never be suffered to take
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meals, properly so called; we should first attempt to discover what kind of food they are most easy under, and small quantities of this should then be taken every two hours, so as to prevent the appetite ever experiencing the sense of hunger, or ever feeling a desire to satisfy it by eating a tolerably hearty meal. It is almost impossible to lay down any rules as to the kind of food under which a patient with ulceration will be most comfortable; it very commonly happens that light animal food agrees better than a farinaceus diet, and I have occasionally found cold weak brandy and water in such instances the best sedative. The stomach must never be distended by food, nor any kind of food administered which so far disturbs the digestive powers as to give rise to the evolution of much gas during digestion, which in itself, is nearly as great an evil as distending the stomach by food. The next point is the condition of the epigastrium, if there be tenderness on pressure, or heat in this situation, leeches must be applied in quantities suited to the powers of the patient till it is removed. Even in the advanced stages of disease, local bleeding from this is highly serviceable; it diminishes congestion, and renders the attacks of pain less frequent and violent. Employed after attacks of pain it relieves that venous distention occasioned by them, which frequently terminates in hæmatemesis. When the stools are black or bloody, it is highly useful, frequently changing their character by diminishing the congestion or inflammation in the stomach, and checking the exhalation of blood from the ulcerated surface. Hæmatemesis frequently relieves all the symptoms of ulceration, sometimes, for weeks; but we must recollect a patient may die, and commonly does die during the attack, these efforts of nature therefore should be imitated by the employment of means likely to bring about the same result. If the epigastrium be indolent, and the stools natural, or nearly so, the next remedy of importance is counter-irritation by blisters, the antimonium tartarizatum, or other remedies; this should be persevered in constantly and unceasingly, as long as disease remains. I do not think setons productive of much good. I have seen them useless where repeated blistering has afforded great relief. Fomentations laid on the epigastrium and kept on for several hours, sponging this region night and morning with very hot water, reposing in a tepid bath for a considerable time daily, are all remedies that may be employed with advantage. The patient is always worse during constipation; the bowels are best regulated by enemata. If aperients be given they should be of the very mildest character; a few grains of rhubarb with a tenth or twelfth of the muriate of morphia,—the ponderous carbonate of magnesia prepared by Henry or Howard, administered in some infusion of orange-peel, or mint tea, are remedies sufficiently active; the common magnesia is worse than useless. After cicatrization has even taken place all active purgatives should be avoided. M. Cruvielhier records a case of rupture of a cicatrix from violent aperients administered to relieve an apoplexy. The violent peristaltic action of the stomach induced by the aperient had ruptured the cicatrix of an ulcer. Internal remedies are exhibited in ulceration of the stomach with several objects. To relieve pain, to facilitate cicatrization, to check the oozing of blood from an ulcerated surface, or lastly to remedy some general constitutional weakness or irritability which appears unfavorable to the healing of the ulcer.

To answer the two first indications minute doses of morphia may be administered with the trisnitate of bismuth. The nitrate of silver, first proposed by Dr. James Johnson, will be found very serviceable with this view. The sulphate of iron also may be employed; there is sometimes a sponginess of texture in the mucous membrane in long continued cases of ulceration when these latter remedies are highly beneficial. There is occasionally also a great degree of debility, of languor, of laxity of tissue accompanying ulcers of the stomach, in which the exhibition of tonics becomes necessary, and in such forms of disease the carbonate of iron, or even the mis-
Dysentery in South Alabama.

Dysentery discharges nor vomiting oppression edges in the eyes. These brown strong, guineous of knowledge, considered bled autumnal ly, the last, whatever much of the epigastric ness hence the tura.

Second grade:—Frequent evacuations, attended with pain, more or less severe; discharges larger and more watery than in the first grade, and

* Since writing the above, I have learned that it prevailed at the same time in a few other places, and in some with considerable fatality.

From the Philadelphia Medical Examiner, July 1839.

An Account of a Recent Epidemic Dysentery, of South Alabama. By H. V. Wooten, M. D., of Lowndesboro*, Alabama.

It is not my purpose to offer any observations, having claim to novelty, on either the nature or treatment of dysentery. But, having recently enjoyed pretty extensive opportunities of witnessing its varying character, and of reducing to practice several of the plans of treatment which have been much spoken of or of late, I have thought proper to mention the results, with whatever remarks they may suggest.

Dysentery made its appearance in this place about the middle of April last, and continued, with more or less violence, until the middle of June. The town is situated upon a high ridge of land, which separates the low lands of the Alabama river from the large prairies. The soil is of a gravelly or sandy character, with abundant water springs, and of the clearest freestone. This ridge is generally quite healthful, perhaps as exempt from autumnal bilious fevers as any spot in South Alabama, and it is rarely troubled with epidemics. This spring, however, dysentery has prevailed with considerable violence here, while the flat lands and prairies have been nearly exempt; nor has it prevailed any where in this part of the state, to my knowledge, so generally and violently as here.*

Varying as it did, in its symptoms and intensity, to facilitate the history of the treatment, I will divide it into two classes, or grades:—The first grade, characterized by violent griping and straining, with small muco-sanguineous evacuations, very frequent at the onset of the disease; pain mostly of the spasmodic character in the umbilical region, recurring at very short intervals; very little soreness on pressure, in the beginning; pulse full, strong, and frequent; oppression in the epigastrium; vomiting sometimes troublesome; febrile reaction high; sometimes slight delirium; countenance flushed; eyes yellowish; tongue covered with a thick, dry, dark-brown fur, with a deep furrow in the centre; edges red and pointed; in many cases the urine was suppressed during the violence of the disease. These cases, if not early met by thorough treatment, generally ran a tedious and painful course.

Second grade:—Frequent evacuations, attended with pain, more or less severe; discharges larger and more watery than in the first grade, and
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pain only on evacuation; pulse a little frequent, but otherwise natural; febrile reaction very slight; tongue generally clear of fur, moist, edges red. The symptoms, if neglected, generally increased in violence, and the case became very nearly like one of the first grade, in the second stage. These cases, like the others, if not treated in proper time, ran a tedious course, recovering very slowly. It will be observed that the most important difference in the two grades, was the great biliary disorder which existed at the onset in cases of the first grade, and the comparative want of it in the second grade, which appeared to be more particularly an inflammation of the mucous coat of the intestines. I have only attempted a description of the symptoms in the early stages; they were subsequently modified by various causes, which, however, should not be set down to the disease.

I had witnessed the disease in the marshy regions of Georgia, in the same latitude; and although the treatment was generally successful, it was not altogether satisfactory,—and when the disease was presented to me here, I felt somewhat at a loss for the proper course to pursue. My confidence was first directed towards Hope's astringent mixture. The mineral acids have long been recommended in this disease; but my confidence in this particular preparation was greatly increased by the short article on the subject by Dr. Meigs, published in the first volume of the Medical Examiner. Having, during my pupillage in Philadelphia, formed a very high estimate of the professional ability and moral integrity of Dr. M., I felt no hesitation in relying upon his recommendation of the mixture, and, accordingly, used it on the first opportunity. At first I gave it as opportunity offered, not regarding the character or stage of the case; but often, when "six doses" and more, had been given, no perceptible benefit was produced. In some cases, however, it appeared to have some influence in lessening pain, while all the other symptoms continued unchanged; I discovered, that when called to a case, after purges of calomel or castor oil, or both, had been used, the mixture was more likely to produce immediate benefit, and effect a cure. Having given it a fair trial, and found it unavailing in many cases, it was discontinued for a time, during which, combinations of calomel and opium, ipecuanha, castor oil, &c., were used; and, on the resumption of the mixture, it was found to produce the most happy effect. The cases of its application to which I have alluded, were of the first, or biliary grade; and I am convinced that but little confidence can be placed in the acid mixture for their cure, until the heavy congestion of the liver and the portal circulation is removed; and, for this purpose, I have found it necessary to excite the secretory action of the liver by calomel or blue mass, pretty freely exhibited, and purged off by castor oil. For exciting this action, I have always found the alterative action of the acid mixture entirely too weak; but, after this action has been well established, I know of no medicine to perpetuate such action, and, at the same time, address directly the irritation of the bowels, in which I have greater confidence than in the mixture alluded to.

In the second class, or milder grade, the mixture was more generally applicable, requiring often only a simple purge, as of castor oil, to prepare the way for its best effects; yet, it was found in all cases, even of the lightest grade, to act much better after such purge, than before; and in many cases of this class, which had been neglected until the glandular functions had become much disordered, the most thorough alterative action of calomel was required, before the beneficial action of the mixture could be induced. In these cases, however, I sometimes found the system ready prepared, the patient having taken these medicines before calling my attention to the case, and under such circumstances, I resorted to the acid mixture immediately, with satisfactory results. Witnessing these facts, and drawing their deductions, I was forced to the conclusion, that a preparation was always important, and frequently necessary, for the good effects of the acidulated mixture, more particularly in the bilious form of the disease.
For this purpose, when pain was severe, and reaction high, I found great
benefit in free venesection; this not being indicated, or already done, I gave
Hydrag. chlorid. mit. gr. x.
Pulv. ipecac. et opii. gr. xx.
To be administered every third hour until four doses had been taken, to be
followed, in three hours by castor oil, and laudanum, if required, to alleviate
pain. In some cases, where the pain was not so violent, and the stomach
not irritable, one grain of ipecacuanha was substituted for, or added to the
Dover's powder. The ipecacuanha seemed more particularly applicable to
the cases of children. In illustration of my plan of treatment, I will give
here a short sketch of a case: Mr. L., aged twenty-four, of bilo-nervous
temperament, good constitution and moral habits, was attacked seven days
ago with the mild, or second grade of the disease; this being treated by ano-
dynes alone, gradually assumed a more formidable character, and at the
time of visit was marked by heavy glandular disorder, with violent mucous
inflammation of the intestines, presenting all the worst symptoms of the first
grade, with considerable exhaustion. He was purged, without permanent
benefit; the acid mixture was then instituted, f vii. being given every fourth
hour. At the administration of the seventh dose, no appreciable benefit
was produced. Tongue dry and thickly coated, with a deep furrow and red
edges, as above described; febrile reaction high; slight delirium; oppres-
sion in the epigastrium; anorexia, &c. The calomel and opium course was
then applied, on which copious evacuations of vitiated secretions, bile, &c.,
appeared. These ceased after the action of the medicine, and the evacua-
tions had the appearance of returning to their former condition, sero-san-
guineous, frequent and painful,—when Hope's mixture was again brought
into service with immediate benefit, healthy secretions returning gradually,
and general condition improving. This case fairly represents the ordinary
results of my practice during the prevalence of the disease. It may be said
that the calomel made the cure, without the aid of the mixture; this, how-
ever, would be an unjust conclusion, as the secretions were rapidly falling
back to their former depravity when the mixture was resumed, which un-
doubtedly perpetuated the action excited by the calomel. It was sometimes
necessary to repeat the calomel and opium daily for two or three days. As
a simple purgative, I have found nothing so good as the castor oil; I have
known several respectable practitioners, who used the Epsom salts alto-
ther as a purgative in this disease, and from their recommendation I have
been induced to use it myself, but from the results that I have met, I greatly
prefer the castor oil. When the irritation is primarily and chiefly in the
intestines, and the liver in a healthy state, the salts, acting as a depletant,
may do much good; I have myself seen much benefit arise from its use in
such cases. But in this climate, the long and excessive heat of summer,
keeping up an over-action of the liver, places that organ in an almost ex-
hausted condition, rendering it the weak point for the invasion of disease,—
and whenever disorder, from any cause ensues, affecting the portal circula-
tion, the liver is generally found incompetent to the performance of its func-
tions, which is not unfrequently our greatest hindrance in the removal of the
disease; this is particularly so in the epidemic dysenteries of our climate.
The salts, by producing a depletory effect, may, for a time, suspend the ne-
cessity for the liver's action, but will not restore to it that action which is
important to the recovery of health. Moreover, when we have given an al-
terative, destined particularly for the secretory function of the liver, it
seems to me absurd to set up a directly counteraction upon the intestinal
exhalents. Sometimes, it is said, the suspended action of the liver is owing
to an engorgement of its vessels, and that the salts, by their depletory ac-
tion, relieve this obstruction. Granting this fact, the salts should be admin-
istered in such cases before the calomel or other alternative, and not as is usu-
ally done, after it; but where no other than depletory action is required, I
prefer the lancet. Castor oil, on the contrary, producing no unnatural discharge from the bowels, but simply exciting the peristaltic motion of the intestines, thereby emptying them of their contents—perhaps the products of the alternative—seems to me an apt adjunct to the use of calomel, when purgation is desired. These considerations, with the recollection of the fact that mucous secretion, and not serous exhalation, is the natural product of the intestinal mucous membrane, have led me to the constant preference of the oil in this complaint, and all others where a promotion of hepatic action is desirable.

When the tenesmus and griping were severe, great benefit was frequently derived from a combination of rhubarb and Dover's powder, each gr. x, given every second hour until the pain and discharges were moderated. It often quieted the irritation, and produced consistent evacuations, thus greatly relieving the worst symptoms of the disease. This was rarely permanent, however, unless the secretions had been previously restored to a proper state; consequently, I have confidence in this combination no further than its alleviation of irritation, for which it is an excellent remedy. The balsam copaiva was also tried; I did not resort to its use in the early part of the epidemic, nor until after I had become convinced of the propriety of first restoring the secretions in all serious cases, which I am satisfied, was the proper time for its application. I observe in the essay of Dr. La Roche on the subject, that in all the cases which he instances of its best effects, it was given after purgation; and it seems that those cases in which the blue mass had been previously used, were the most signally benefitted by the balsam copaiva. The cases which he reports were prepared by other medicines for the action of the copaiva, or such as had become chronic, the inflammation of the bowels being the most important disease to be remedied. In either case, its use corresponds with my experience given under these circumstances,—its remedial powers were strikingly happy. In one case, that of a child, in which every other remedy had failed, and ulceration had apparently ensued, it acted promptly and efficiently, producing a speedy recovery. In some cases I have no doubt, that from long neglect, and the violence of inflammation, it may become so permanent, and the discharge from the mucous membrane so habitual, as greatly to counteract the action of alteratives on the liver and other secretory organs, in which circumstances it becomes necessary to address our remedies to the mucous membrane first. And, further, I have no doubt that this state of things occurs in a greater proportion of cases in the practice of Dr. La Roche and Dr. Meigs, than mine, or the general practice in this climate, not owing particularly to the causes just mentioned but to the great difference of climate, or rather its effects on the human system; for in nearly all these disorders in this climate, the liver is primarily involved, while such is not the case in Philadelphia, which may well account for the different results from the use of the same remedies. In cases where mucous inflammation was to be particularly addressed, I found the balsam copaiva a very excellent remedy. I use it according to Eberle's formula:

R. Balsam copaiv. 3 ss.
Pulv. gum. arab. 3 ii.
Sacch. albi. 5 iii.
Aqua. font. 7 viii.
Tinct. Opii 5 i.

A table spoonful every fourth hour.

In the chronic stages of mucous inflammation, where the existence or approach of ulceration is apprehended, I would rely more on the copaiva than any other medicine.

The acetate of lead was used in several cases, but its use was so barren of good as to cause its early abandonment. Opiates alone, were used in some cases, but they only had a temporary anodyne effect, the disease al-
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ways returning with its former violence on the withdrawal of the medicine. The use of anodyne and mucilaginous injections was resorted to in many cases: but, unfortunately, those cases which most urgently demanded their influence, could not tolerate their presence, and they were immediately rejected, so that benefit from this source was rarely to be obtained.

In a very few cases, which appeared rather tedious under the ordinary remedies, I tried the use of nux vomica, as recommended by Dr. Vaux, through Dr. Armstrong. It seemed to exercise some anodyne influence; but, on increasing the dose to the amount advised, (seven grains,) its peculiar constitutional effects were such as to stop its use. I did not make a full trial of this article.

In many cases where griping was frequent and severe, much benefit was derived from the warm bath.

I have observed the disease closely, not only here, but in the same latitude elsewhere, as above mentioned, and in the practice of an excellent physician. Never being wholly satisfied with any particular remedy, or course of treatment, and always viewing the disease as one distressing in its operation, and dangerous in its results, I have, while watching its varying character, been equally watchful in applying various remedies, as I thought them indicated. The comparative efficiency of these I have thought it unnecessary to mention, except, as applied during the same epidemic, frequently in the same case, and altogether under the same circumstances.—and this, the trials being pretty extensive, I have thought interesting;—on which account I have given the above sketch, from which the following conclusions may be drawn:

1st. That, in all cases of dysentery, occurring in this climate, the liver is either primarily or secondarily involved, producing a suspension of its secretory action, which has a direct tendency to increase and perpetuate the phlogosis of the bowels, and that this organ must be restored to its due action before a cure can be effected.

2d. That, to restore the secretory action of the liver, (depletion being premised when indicated,) nothing can be fully relied on but mercurial preparations, given in quantity and continuance sufficient to the purpose; and that calomel is to be preferred, succeeded by castor oil, to produce gentle, but free purgation.

3d. That to alleviate pain and stay the spasmodic action of the intestines, opiates should be given with the calomel, in the quantity required, and the stomach allowing, ipecacuanha should be added, with a view to its diaphoretic effect.

4th. That, when the secretory action of the organs involved has been restored, and it is desirable to perpetuate that action, and at the same time allay mucous irritation, nothing is more to be relied on than Hope's nitrous acid mixture, freely given.

5th. That, where the advanced stage of mucous inflammation is to be combated, as the main object in view, the balsam copavia is the best remedy.

6th. That, much suffering may be saved by the proper use of the warm bath and anodyne injections, when they can be retained.

7th. That, under all circumstances, a regular action of the liver and other secretory organs, should never be lost sight of.

8th. That proper dietetic treatment is all-important.

It may be proper, in conclusion, to remark, that I am indebted to my friend and copartner, Dr. H. P. Perry, for much of the opportunity which I have had of observing the disease, and the use of remedies; and further, that during the entire prevalence of the disease, we had but two cases to terminate fatally, both children under two years old, and one suddenly, evidently from intussusception.

Lowndesboro', June 21st, 1839.
Brief Rules of Exploration of the Chest, in Diseases of the Lungs and Heart
—By Jacob Bigelow, M. D., Physician and Lecturer on Clinical Medicine at the Massachusetts General Hospital.

[Communicated for the Boston Medical and Surgical Journal]

Since the discoveries of Laennec, which have constituted the most important acquisition which medical science has received during the present century, various treatises of a general or partial character have appeared, on the subject of exploration of the chest. Although the experience of more than twenty years has tended to confirm rather than invalidate almost all the laws established by that distinguished man, yet a good deal of refinement and modification has been introduced into this branch of science by some of the more voluminous writers on the subjects which it comprehends. Many physicians and students, it is apprehended, are on this account deterred from making themselves familiar with the fundamental principles of an art, without which no accurate knowledge can be obtained of the nature or degree of thoracic diseases.

For this reason it has appeared to me that a brief and intelligible exposition of the more essential laws of this art, as it is practised at the present day, would not be unacceptable to a large part of the medical profession. Such rules at least are more easy of remembrance and of application, than the extended discussions of more diffuse writers.

In the physical exploration of the chest, a series of problems for solution is presented to our attention by the external phenomena of that part of the body. Each of these phenomena is a sign bearing a fixed and definite relation to some particular conditions of the internal organs. By a correct interpretation and comparison of these signs, we arrive at a knowledge of the state of the organs, whether in health or disease, which without them it would be impossible to obtain.

Of the Examination of Shape.—In perfect health the chest is for the most part symmetrical and equally proportioned. In disease certain changes of form are liable to take place, and to these it is necessary that the observer should direct his attention. The patient to be examined should sit erect, in a warm room, with his chest uncovered, and the arms down in similar positions. He should be placed directly opposite to a front light, since unequal or side lights produce deceptive impressions in the comparison of prominent or depressed surfaces. The following circumstances should then be observed, and the inferences resulting from them should be tested by the other modes of exploration.

If one shoulder, including the scapula, is constantly raised, it may proceed from curvature of the spine, from pleuritic effusion, pneumothorax, or more rarely from an internal tumor. If the spaces above and below the clavicles, or those between the ribs, project on one side more than is natural, we may suspect emphysema, pleurisy, or pneumothorax, on that side. If the same spaces be preternaturally depressed, there are frequently adhesions of the pleura underneath them, with sometimes calcified cavities, in the lung; or the lung, after being compressed by the disease, may not have recovered its due dilatation. A prominence in the region of the heart is natural in some persons. When preternaturally great, if it be pear-shaped, with its perpendicular diameter longest, it should lead us to suspect pericarditis. If it be oval and transverse, there may be hypertrophy of the heart. But these characters are by no means constant. Various irregularities in the conformation of the chest, arise from softness or other change of the bones in rickety constitutions, and they may also take place in some persons, especially children, without any important disease.

The sides of the chest may be successively measured by carrying a string or tape from the middle of the sternum of the spinous process of the vertebra, below the nipple, or on the level of the greatest apparent projection. If one side is found decidedly larger than the other, there is reason to apprehend
the effusion of fluid, or less frequently of air into the cavity of the pleura; or the enlargement or morbid growth of some internal part.

Of Percussion.—The art of percussion is founded on the familiar fact that a hollow body resounds when struck, while a full body does not. Thus in percussing a cask, or the inner wall of a house, we can decide whether it is empty or filled up, and in most instances can determine where the vacant space begins or ends. Percussion is employed in medical practice to indicate the condition of that part of the body which is immediately within the point percussed. Any portion submitted to this test, will sound more or less hollow, in proportion as air, or a denser substance, predominates in the spot upon which percussion is made.

As it is sometimes painful to the patient to percuss directly upon the surface of the body, it is now common to employ an intermediate substance, called a pleximeter, to receive the impulse of the blow. Various pleximeters have been employed, made of ivory, wood, and India rubber. But one of the most convenient is the finger of the hand of the operator which is not in use, laid firmly and flat on the surface which is to be percussed. It may be variously turned, at the discretion of the operator, to fit the different curvatures of the chest. But in comparing corresponding parts, care should be taken that the finger used as a pleximeter should be placed at the same angle, upon each part, as that it be held upon it with equal pressure. For want of attention to this point, important mistakes are committed.

Percussion is commonly performed with the ends of all the fingers at once, holding them so that the last phalanx shall be perpendicular to the surface percussed. A single finger answers the purpose in many cases. The stroke, or tap, should be short and quick, since in this way the clearest sound is elicited. Percussion requires to be repeated with different degrees of force, in estimating the seat of morbid changes. For superficial affections, slight percussion is sufficient; but to elicit the modifications of sound which belong to deep-seated changes, more forcible percussion is needed. It is desirable, however not to give pain to the patient in any case.

Some inconvenience is experienced from disadvantageous positions, when we percuss surfaces of different obliquity, and especially on the side next the operator. To obviate this difficulty, I have used, in the Massachusetts General Hospital, for the the last three years, a percussor formed of an elastic ball of woolen yarn, covered with velvet, about an inch and three quarters in diameter, with a handle five inches long. This instrument has the advantage of great freedom of motion, as evinced by the circumstance that the operator may percuss with it any part of his own chest. It has also the mechanical advantage, that the centre of percussion falls within the percussing part, which is not the case when the hand is used. Its use is attended with much more despatch than that of the fingers, and the sound of one may be employed to test that of the other. The tone varies in proportion to the hardness or softness of the ball, in regard to which a medium is best. It is carried inserted in a sestoscope, the ear-piece of which, if thickened and used edgewise, makes a good pleximeter, more convenient to hold than any other.

For the satisfactory performance of percussion, the patient, if able, should sit up, either uncovered or with a single thickness of covering. It is essential, when opposite sides are to be percussed, that their position and covering should be similar, to enable us to form a just comparison. While the anterior surface is percussed, the patient should sit erect, with the shoulders back, and both arms in the same position. When the posterior surface is percussed, he should fold the arms and stoop forward. To facilitate percussion under the axilla, the arms should be raised over the head. When the patient is too sick to sit up, the operation becomes more difficult. Still we are able to percuss the anterior and lateral parts, and if the patient can turn upon his sides, the back also becomes accessible.
Inhealththepercussionismostresonantwherethereismostlung,and
the least integument, muscle or bone. It is therefore most sonorous in the
axilla, and in the inferior regions of the chest. It is somewhat less so be-
low the clavicles, and still less so upon and above them. It is dull upon the
spine and the scapula, and somewhat so upon the mammary and pectoral
muscles. Yet these latter give a sufficient sound, if properly compressed
by the pleximeter.

The two sides of the chest should sound alike in healthy persons, with the
exception that the part of the left side occupied by the heart gives a duller
sound than the corresponding part on the right side. This portion, called
the precordial region, extends from the middle of the sternum to the left
nipple, and from the base of the chest, obliquely to the junction of the ster-
nun with the third or fourth rib. A source of inequality is found in the
lower part of the left chest, from its proximity to the stomach, in conse-
quence of which it becomes resonant when that organ is distended with gas.
But in this case the sound is peculiarly sharp and tense, having the tone which
Piory has denominated stomachal resonance. The right side, also, at its
lower part emits a duller sound, from the proximity of the liver. With the
foregoing exceptions, the healthy chest should sound alike, or nearly so, on
the corresponding parts of opposite sides. And if there be a constant and
evident difference in the sound elicited by percussion from the two sides, we
are justified in inferring that one side or the other is a seat of disease.
In estimating the results of percussion, we should not compare different indi-
viduals with each other, except in cases of great peculiarity, for perhaps no
two individuals y.eld precisely the same sound, owing to the size of the chest,
the amount of integuments, &c. But the same individual may always be
compared with himself.

Normal sounds are those which are naturally emitted by healthy persons
under exploration. In disease the sound of percussion is liable to become
preternaturally resonant on the one hand, or dull and flat on the other. The
sound is termed preternatural, when the part percussed is more resonant
than in health. If the resonance is excessive, it is called tympanitic. It
exists in emphysema, in which disease the air vesicles are enlarged; also in
pneumothorax, in which air exists in the cavity of the pleura.

The sound of percussion is termed dull, when the resonance of the chest is
less than natural; and flat, when there is little or no resonance, the sound
in this case resembling that which would be yielded by the fleshy part of a
limb, if percussed. Dull and flat percussion are different degrees of the same
thing, and take place when a portion of light vesicular lung is replaced by a
denser body. This may be a foreign or different substance, such as an en-
larged heart, a tumor, or an effusion of fluid; or it may be a portion of the
lung itself consolidated by disease, as in hepatization, and tuberculous infil-
tration, the former occurring in pneumonia, the latter in phthisis.

If the chest emit a dull or flat sound, which shifts its relative position
whenever the body is moved from one posture to another, always occupying
the lowest situation, we may conclude that there is effused fluid, which by
its own gravity seeks always the lowest level.

There is a peculiar sound sometimes heard in percussion, which is dull
and jarring like that of a cracked earthen vessel, and called by the French
bruit de pot frole. It is best heard during expiration, and with the patients'
mouth open. It occurs in phthisis, and indicates a cavity in the lung, im-
mediately within the percussed part. The diagnosis is rendered more cer-
tain if on light percussion that part gives a dull sound. In rare cases the
cracked sound is met with when the lungs are healthy.

Auscultation.—Auscultation is the art of estimating by the ear the nature of
the different sounds produced by natural process within the body, more
particularly within the chest; and of explaining these sounds by reference to
their causes. These sounds may be heard most perfectly by the immediate
application of the ear to the surface of the body, and this method is called immediate auscultation. It may also be heard by interposing between the ear and the patient’s body, a solid substance capable of conducting sound, and this is called mediate auscultation. When a person breathes or speaks, the walls of the chest are made to vibrate in a manner which corresponds to the vibration of the parts immediately within them. This vibration is variously modified by disease, so that to the cultivated ear, the vibration of the walls of the chest expresses the pathological condition of the internal organs.

For most purposes immediate auscultation is preferable to mediate, since it is practised with greater ease and despatch, and in most cases gives more satisfactory results. But Laennec, the discoverer of auscultation, introduced an instrument, called a sphygmone or a sphygmograph, and this instrument is now superseded by others of more portable form and dimensions. Although the discoverer of auscultation seems to have considered his instrument as indispensable, and styled his great work a treatise on “Mediate Auscultation,” yet the best auscultators of the present day make comparatively little use of instrumental assistance.

The chief cases in which the sphygmone is wanted in practice are, 1. To examine the depressed surface of the chest, into which the ear cannot be inserted. 2. To explore very small spots or diseased portions of very limited extent. 3. To determine the exact boundaries of a pathological affection. If this is attempted by immediate auscultation, the observer is liable to be deceived in consequence of the conducting power of the bones of the hand. 4. When circumstances unconnected with science are opposed to immediate auscultation, such as the modesty of females and the equal condition of the lower orders.

The patient to be ausculated should be placed in an even and easy position, so that one side may not be more prominent than the other, and the muscles may be equally relaxed. The erect position is to be preferred, when the patient’s strength admits it. The less covering is left on the chest the better, and especially all substances which may produce a fallacious sound, as silk and woollen, should be removed. These precautions being attended to, the ear should be applied to different parts of the chest in succession; or if the sphygmone is used, it should be placed even, so that every part of its orifice may be in contact with the surface of the body. The attention should then be directed to the natural respiration, and to the respiration when forced by more rapid efforts of the patient. Afterwards the voice is to be attended to, and finally the sound of the cough. In all these a careful comparison is to be made between the sound emitted from corresponding parts of the two sides.

In immediate auscultation the ear is most easily directed to parts which correspond on opposite sides, by placing a finger underneath it as guide, and removing and replacing this by inspection. It is also useful in immediate auscultation to vary the position of the ear, by sometimes turning off the head so as to liberate the meatus, and still receiving the sound through the bones of the cranium. This may correct our first impressions. In this way a double sound of the heart can often be heard, when only one is heard by immediate application of the ear.

Two sounds are produced in natural respiration, and may be heard in every healthy person. The first of these, called vesicular respiration, is a soft breezy expansive murmur, which is audible when the ear is applied to most parts of the chest, but particularly the lower parts. It is confined chiefly to
the act of inspiration, and the expiratory sound is scarcely heard in health, except in the upper and posterior parts, and in these places it is weaker than the sound of inspiration. The second, called bronchial respiration, is a more harsh and blowing sound, and may be heard in its greatest intensity by placing a stethoscope on the trachea, from which circumstance the highest degree of bronchial, is called tracheal respiration. It is heard in a less degree opposite the root of the lungs, between the scapula and the spine. It occurs both in inspiration and expiration.

Vesicular respiration is apparently produced by the entrance of air into the pulmonary vesicles. Bronchial respiration seems to be caused in part by the passage of air through the bronchi and their branches, but is chiefly conducted, like broncophony (hereafter described,) from the fauces and larynx. In health there is somewhat more bronchial sound on the upper part of the right side than the left, owing to the right bronchi being largest. The sounds in different individuals are found to vary greatly in intensity, owing to natural differences in the structure of the integuments, and the contents of the chest. But when in the same individual there is a difference in opposite and corresponding parts of the chest, and the difference is not to be accounted for by their mechanism of the chest, which has been already explained, we infer the existence of disease. We suspect disease when the vesicular sound of any part is comparatively diminished or increased; also when it is replaced by bronchial respiration in a part to which the latter does not naturally belong.

When the respiratory sound is particularly feeble, or absent in any of the anterior parts of the chest, we suspect the existence of emphysema, or dilatation of the pulmonary vesicles, especially if there is a degree of roughness in whatever sound is heard; and the diagnosis is confirmed if there is resonant percussion. If feeble or absent respiration occurs at the posterior or inferior parts of the chest, we suspect pleurisy, and proceed to test the correctness of our diagnosis, by examining for the other signs of that disease. If feebleness be confined to the apex of the lung, there may be tubercles; and if it varies, by recurring at periods of short duration, it is owing to the mucous obstructions attendant on bronchitis.

When the respiratory sound of any part of the lung is preternaturally loud, but otherwise healthy in its character, it constitutes puerile respiration, so called by Laennec, from its resemblance to the loud respiration of children. When this sound is universal, it merely indicates activity or functional excitement. But when it is confined to any one part of the chest, we at once suspect that some part is diseased, for when one part of the lungs is disabled by disease from performing its proper function, the remaining parts take on a supplementary action, attended with greater labor and more sound.

When bronchial or harsh respiration is heard in parts where it ought to be vesicular, and especially if the expiration is bronchial, we infer that there is disease in the part thus affected. This is very commonly an induration of a part of the lung, by which the vesicles are filled up or consolidated, so that the vesicular sound is destroyed, while the consolidated portion conducts the sound from the bronchi directly to the ear. This happens in pneumonia, in which a part of the lung is hepatized; an affection which may occur in any part of the chest, but chiefly in the back; or it may take place in phthisis when a part of the lungs, usually near the summit, is indurated by tuberculous infiltration. Bronchial respiration is often heard in pleurisy, apparently when the effusion of fluid is such as to compress the air vesicles without compressing or obliterating the bronchi. It is also heard when a bronchus is preternaturally dilated.

Rude or rough respiration is a mixture of bronchial and vesicular sounds. It is heard in incipient phthisis, and in the lesser degrees of pneumonia and pleurisy.
When bronchial respiration is intense, so as to resemble the sound of air blown into the ear, it has been called tubal. The circumstance which is best suited to produce this sound is a dense hepatisation, extending from the pleura to the trunk of a large bronchus.

Cavernous respiration is a modification of the bronchial. Its sound is so modulated as to convey to the ear the impression of air being alternately drawn into and expelled from a cavity. It is commonly of small extent, and indicates an excavation of moderate size in the lungs. It is most clearly pronounced in tuberculous cavities, the walls of which are indurated. It may also exist, though more rarely, in abscess, in cavities from gangrene of the lungs, and very large bronchial dilatations.

Amphoric respiration is well marked, and easy of recognition. It closely resembles the sound produced by inflating a recent bladder to a great degree of tension. It also is compared to the sound produced by blowing into a glass bottle or tumbler held near the mouth. It indicates the existence of large cavities, with firm or tense walls, around which the air reverberates in breathing. It accordingly exists in large tuberculous excavations of the lung, and less perfectly in the cavities which follow gangrene. In pneumo-thorax it is often highly distinct, especially if a free fistulous opening exists between the cavities of the pleura and bronchi, permitting the entrance and egress of air.

The sounds hitherto described are a sort of modification of the natural respiratory noise. There remain to be considered certain adventitious sounds, which are not present in healthy respiration, but occur in different diseases. These are commonly designated by the French term râles, which is the name originally given them by Lennec. The Latin name rhonchus, or rhonchi in the plural, is used to express the same thing. The English term rattle is sometimes used, but is liable to obvious objections.

The sonorous râle is a continuous sound, of a louder character than the rest, and has been compared to the pipe of an organ, the bass string of a violin, the creaking of a wagon wheel, or the cooing of a pigeon. It is heard both in inspiration and expiration. It commonly attends bronchitis or pulmonary catarrh, and is supposed to be caused by a thickening of the mucous membrane in some of the larger bronchi.

The sibilant râle is continuous like the former, but is more acute in its tone, resembling a low whistling sound. It is supposed to be produced in the smaller bronchial ramifications. It occurs in catarrial affections, in which it is fugitive and often changes its place; also in emphysema, and in typhoid fever after the first week.

The two foregoing have been called dry râles, to distinguish them from those which follow, and which have been styled moist or humid râles. But there seems to be no good foundation for this distinction, since the facility with which the sonorous and sibilant râles change their places, appears to indicate the presence of fluid in the bronchial passages.

The crepitous râle, sometimes called the fine crepitous, has been compared to the crackling of salt thrown upon the fire, or the rubbing of one's own hair between the fingers close to the ear. It accurately resembles the sound of champagne or soda water, held in the mouth in a state of effervescence, or of the electric fluid drawn from a sharp point. It is sometimes heard after cough, when otherwise inaudible. It is most distinctly heard in common cases at the end of the inspiration. It belongs exclusively to pneumonia, and is pathognomonic of the first stage of inflammation, or that of pulmonary engouement. It is said to be sometimes heard in healthy persons on a single forcible inspiration, after which it disappears.

The sub-crepitous or coarse crepitous râle, resembles the former, but differs in the size of its bubbles, which are larger and more unequal, forming altogether a coarser sound. It is heard in catarrh, in which case it is usually audible on both sides at once. It exists in oedema of the lungs, and in
pneumonia, when that disease is passing into resolution. If it is heard only on one side, and is confined to the top of the chest, we may suspect tubercles.

The crackling râle, craquemêt of the French, is a coarser sound than the last, and resembles a short valvulas flapping. It is heard best immediately after cough, during the first inspiration, and affords the first sure indication of the softening of tubercles. It is usually met with at the top of the chest.

The mucous râle is a rattling sound, more loose and coarse than any of the preceding, and giving the impression of a fluid traversed by air in the bronchial passages. It is heard in all diseases of the lungs which are attended with a copious secretion of mucus or pus, such as catarrh, the advanced stages of pneumonia, and phthisis. A lesser degree of this sound is called muco-crepitous.

Gurgling râle, gargouillement of the French, is a bubbling sound, caused by the passage of air through a quantity of fluid contained in a cavity. It may exist in cavities produced by pneumonia, gangrene, or a dilated bronchus; also in the trachea and its large branches. But by far the most common source of this râle, is a cavity formed in the lungs in phthisis. It often alternates with cavernous and amphoric breathing, and apparently takes place whenever the level of the fluid rises above the bronchial orifice which supplies the cavity with air. It may often be produced by coughing, when it is not audible in any other way.

The sign called metallic tinkling resembles the snapping of a short musical wire, or it is like the sound of a glass or silver vessel when struck by a pin. It requires for its production a cavity having tense or undurated walls, and containing both air and liquid. It indicates the existence either of pneumo-thorax, or of a large tuberculous cavity. The immediate cause of metallic tinkling is the forcible or sudden disturbance of the liquid in a cavity like those mentioned. The explosion of bubbles of air from beneath the surface of the liquid, appears to be the most common cause of such a disturbance; but it may take place when a part of the liquid is thrown upward in the act of coughing, and falls back upon the remainder. A minor, or sub-metallic tinkling, having no musical resonance, may be produced by slight impulses given to the air in the cavity, such as the breaking of bubbles of mucus at orifices above the surface of the liquid.

The sound of friction, bruit de frottement, has been compared to the rubbing together of two pieces of leather. It conveys the idea of difficult friction, in which two opposing surfaces in close contact alternately move and catch upon each other. It is sometimes not only audible, but palpable to the hand. It exists in dry pleurisy, in which the opposite surfaces of the pleura are covered with a false membrane, or coating of coagulable lymph, without the interposition of serum sufficient to prevent contact. It is most apt to occur after effused serum has been absorbed. It may take place in interlobular emphysema.

Voice.—The voice is produced in the larynx, and the vibrations belonging to it are conducted through the trachea and its branches to all parts of the lungs. If we apply the ear to the chest of a person who is speaking, we perceive a confused, inarticulate noise. It is clearest and most resounding at the upper parts of the chest, which are near the larynx, and in which the bronchi are largest, especially at the inner edge of the scapula. It is feeblest in the lower parts, where there is a great deal of intervening, spongy, vesicular texture. The degree of resonance varies in different subjects. If other things are equal, it is greater in thin persons than in those who are fleshy, and in persons who have a strong deep voice, than it is in those whose voice is high or feeble.

Aphonia, or loss of voice, may take place from catarrhal affections, debility, paralysis, ossification of the cartilages of the larynx, or ulceration of the vocal chords in phthisis.
The first deviation of the voice from its natural state, perceived in auscultation, is in its diminished resonance. When this takes place in a particular part, independently of affections of the integuments, it most frequently indicates emphysema. It may also occur in pleurisy, when the effusion into the cavity of the chest is sufficient to compress the whole lung.

Increased resonance of voice takes place when the pulmonary texture is slightly increased in density. It occurs in incipient phthisis, and at the beginning and decline of pneumonia and in dilatation of bronchi. This and the foregoing variety of resonance, can be estimated only by comparing the part of the lung in which they occur, with a corresponding portion which is in a healthy state.

Bronchophony is a peculiarly loud, clear, thrilling sound, which impresses the listener as if the voice was close to his ear, or as if the patient spoke through his ribs. In different degrees it accompanies bronchial and tubal respiration, and depends upon the same causes, viz., induration of the pulmonary substance by tubercles, hepatization, bronchial dilatation, &c. Bronchophony, in some cases, is attended by a thrill which is not only audible, but palpable to the hand.

Pectoriloquy is an exalted degree of bronchophony, resembling the sound which is heard by placing a stethoscope on the trachea while a person speaks. It is produced by a cavity in the lungs, of moderate size, having indurated walls, and being empty, or nearly so, of fluid. It is liable to disappear and return as the cavity becomes filled with fluid, or is emptied by coughing. The value of pectoriloquy in diagnosis has probably been exaggerated, and we seldom rely upon it without the concomitant signs of excava
tion.

Amphoric resonance of voice is a hollow, reverberating, semi-metallic sound, as if a person spoke in a brazen vessel. It accompanies amphi
cropic respiration in pneumo-thorax, and in tuberculous excavations of large size.

Ægophony is a sound which has been compared to the bleating of a goat, from whence its name is taken. A good idea of it may be obtained from the nasal voice of a person who closes his nostrils in speaking. It exists at a somewhat early stage of pleuritic effusion, then disappears, and returns again after the fluid is partly absorbed. For its production it requires that a certain amount of fluid should be interposed between the lung and the ear, but not so much as to compress the lung wholly. It is usually heard near the lower angle of the scapula. Ægophony occasionally runs into bronchophony, and an intermediate sound is sometimes produced in pleurisy, viz., broncho-ægophony. This sound is apt to exist in pneumonia, attended with a slight degree of pleurisy. According to M. Reynaud, ægophony may occur in aneurism, when the trachea and bronchia are compressed.

Succussion.—A very ancient, though rough mode of exploring the chest, consists in shaking the patient with a view to elicit the sound of free fluid, if such exists in the cavities. This mode is applicable only to cases in which air and liquid coexist, as in pneumo-thorax and large pulmonary excavations. In patients thus affected, if the body be agitated, the dashing of the fluid can be heard not only by auscultation, but frequently by the ear at some distance from the body. This mode should not be practised to the annoyance of weak patients, but we have repeatedly met with patients who, by their own efforts, could produce the sound of succussion at pleasure.

Cough.—A short dry cough is attendant on various irritations of the fauces, elongated uvula, some febrile affections, and occasionally in persons in whom no obvious cause can be detected. It attends on the incipient stages of phthisis.

A hoarse cough is loud, dry, hearty and forcible, without any peculiar harshness or stridulous sound. It exists in the early stages of pulmonary catarrh, and seems, like a hoarse voice, to depend on intumescence of the vocal chords.
An aphonie cough, the tone of which is whispering and feeble, seems to depend on the same causes which produce aphonia in the vocal functions. It takes place in excessive catarrhal affections of the glottis, in great debility and in ulcerations of the larynx.

A stridulous cough, having a barking or brazen sound, occurs in croup, laryngismus, and in some children at the commencement of catarrh or measles. In confirmed croup, under the production of false membrane, it is apt to acquire a wheezing or whistling character.

A loose cough, as its name expresses, is characterized by the sound of a loose fluid in the air passages. This fluid may be mucous, purulent mucus, or pus. It occurs in the advanced stages of catarrh, in phthisis, in the third stage of pneumonia, and in old age. In catarrh it is frequently a ground of favorable prognosis. A cough may in some cases have a broken and somewhat loose sound, without evidence of much fluid.

A spasmodic cough consists usually of many short expirations, followed by a single prolonged and often sonorous inspiration. It occurs in hooping cough and sometimes in dentition and other affections of children. The cough of asthma has generally more or less of a spasmodic character.

The amorphic cough has a hollow, reverberating sound, and constitutes a striking symptom of the advanced stages of phthisis, with large cavities.

Expectoration.—In a state of health the natural saliva and mucus are transparent and colorless, and they generally remain so in the incipient stages of pulmonary diseases.

When the sputa consist of mucus which is thick, whitish and opaque, during common pulmonary catarrh, they indicate a subsidence of the inflammation. They are sometimes yellowish or greenish when the disease is prolonged.

When the sputa are of a red color, viscid, heaped in small masses, and adherent to the vessel into which they are discharged, the disease is pneumonia. They may also be sometimes brown or yellowish in this disease.

When liquid blood of a fresh, florid and frothy appearance is thrown off by an expiratory effort, in any considerable quantity, the case is one of hemoptysis. It shows in most cases the existence of tubercles in the lungs, but may take place under the influence of other causes, such as catamemial irregularities, aneurism of aorta, and external accidents. Pulmonary hemorrhage, when slight, probably proceeds from exhalation from the mucous membrane; when more serious, from the vesicular texture; and in rare cases, from the rupture or division of a blood vessel.

When pus is expectorated the disease may be bronchitis, pneumonia, or phthisis. The characteristic sputum, often seen in advanced phthisis, has received the French name pelotomné, which has been rendered in English by the word nummulated. It appears in roundish masses, with shred-like edges, floating in a clear, transparent liquid. The taste is often sweetish, and the smell nauseous. But it is in some cases extremely difficult to distinguish the pus of phthisis from that of chronic catarrh.

When chalky or calcareous concretions are coughed up, they mostly indicate tubercles or phthisis, usually in a more chronic form. Tuberculous matter is sometimes coughed up in the same disease.

When the sputa are extremely fetid, and accompanied with a putrid odor of the breath, the disease is gangrene of the lungs.

The expectoration of young children cannot be examined, from the circumstance that the substances raised are immediately swallowed by them.

The act of expectoration fails to take place when there is a want of sufficient sensibility in the mucous membrane or the diseased part, to excite coughing. This happens in the lethargic and the moribund, giving rise to the well-known rattling sound in the throat so often heard in these cases. For the same reason expectoration is suspended during sleep, and takes place in increased quantity on waking. Some patients voluntarily avoid
of the Heart and Arteries.—The heart is situated in the left chest, occupying the precordial region already described. The apex of the heart points forward, downward, and to the left, about the level of the fifth intercostal space. It is enclosed in the pericardium, and covered by the edges of the lungs, with the exception of a small part of a rhomboidal shape, and generally not two inches square. The portion which in most individuals is thus uncovered, gives a dull sound on percussion, and beyond this part the dulness diminishes, till it is lost in the surrounding pulmonary tissue.

The phenomena which are noticed when the ear is applied to the region of the heart in health, are the impulse and the sounds. The impulse conveys the impression that the ear is pushed or struck by the heart, and the sounds which are heard are two in number. The first sound coincides, in point of time, with the impulse, and occupies half the period of a whole pulsation. The second sound is short and abrupt, occupying a quarter or less of the pulsation, while a pause which follows, fills up the remainder of the period. The causes of these sounds of the heart have been the subject of much recent dispute and experimental inquiry. The latest results render it probable that the first sound is occasioned by the muscular contraction of the ventricles, beginning with the closing of the auriculo-ventricular valves, while the second sound is produced solely by the flapping of the semi-lunar valves. In exploring the region of the heart for signs of disease, we attend chiefly to the impulse, the sounds, the rhythm, or order and proportion of the sounds, the extent of dull percussion, the extent of audible respiration, and the prominence of the precordial region.

When the impulse of the heart is strong and lifting, we infer that there is hypertrophy of the organ, or some of its parts. If perceived over a large space, it is probably attended with dilatation. This diagnosis is confirmed if there is oedema of the lower extremities, dyspnoea, bloating and lividity of the face, with violet-colored lips, and pulsation of the jugular veins.

When in acute disease the impulse is feeble, irregular, or wanting in an erect posture, we should suspect pericarditis, and look out for its other signs.

When there is palpitation, or frequent and abrupt pulsation of the heart, there may be structural or functional disease, or mere nervous irritability of the system.

When the first sound of the heart is prolonged by a blowing or bellows sound, there may be structural or functional disease, or inanition from loss of blood, &c.

When the second sound is prolonged or rough, we suspect disease of the valves from vegetations, thickening, rigidity or contraction. When either sound resembles the noise of a file, rasp or saw, or the cry of a bird, there is probability of still greater valvular disease. In these cases it is generally found that the valves, by their increased thickness, obstruct the passage of blood through the orifices which they command, or else, by their imperfect closure, they permit a portion of the blood to regurgitate. By applying the ear in succession to different quarters of the precordial region, an opinion may be formed as to the particular valves which are diseased. Nevertheless, our present knowledge of the import of valvular sounds is by no means complete, and the certainty of their indications is doubted by some able pathologists.

When the sound of percussion is dull or flat over a greater extent than natural of the precordial region, there is reason to suspect hypertrophy or pericarditis, with serous effusion. A similar inference is to be made when respiration is either absent or extremely feeble over the whole extent of this region, and at the same time is distinct in other places.
When the heart is perceived in the right chest, pulsating as strongly as in the left, or more so, there is either a preternaturally solidified portion of lung, or tumor, by which the pulsation is transmitted; or else the heart is dislocated by effusion or tumor in the cavity of the left pleura. In some very rare cases there has been a natural transposition of this and other organs.

When prominence of the precardial region exists in connection with other signs of diseased heart, there may be pericarditis or hypertrophy. If the prominence be higher than this, we suspect aneurism of the aorta.

When there is a friction sound, like the creaking of new leather, which is synchronous with the pulsations of the heart, there is pericarditis, with effusion of lymph coating the surfaces in contact.

When there is dull percussion, with tumor, about the upper and anterior parts of the chest, attended with loud pulsation, either single or double, especially if there is a purring tremor above the clavicles, we may presume there is aneurism of the thoracic aorta.

The abdominal aorta can be felt in thin persons pulsating along the spine. If the pulsations be excessive and diffused over a preternaturally large space, there is either aneurism of this part of the aorta, or some tumor transmitting its pulsations. Strong pulsations, if not thus diffused, may indicate merely functional disturbance.

When a pulsating tumor is felt in the course of any artery, accompanied with a thrill which is perceptible to the hand or ear, and the tumor subsides on compressing the artery above it, and returns when the pressure is removed, the case is aneurism.

When there is pulsation of the jugular veins, we are to apprehend an imperfect closure of the right auriculo-ventricular valves, in consequence of which, when the ventricle contracts, a part of the blood regurgitates to the auricles and veins.

In certain patients, if a stethoscope be lightly pressed upon the side of the neck, a continuous sound, without pulsation, is heard. It is sometimes buzzing and musical, at others it resembles the blowing of wind against the corner of a house. This sound is called by the French brut de diable, and is now considered as having its seat in the jugular veins. It is chiefly found in chlorotic and anemic subjects, and is supposed merely to indicate thinness of the blood. Several varieties in this sound have been pointed out, which seem of not much practical consequence.

The average frequency of the pulse in healthy persons is from 70 to 75 in a minute. In tall and stout persons it is slower, and in females and irritable subjects, quicker. In infants during the first month, it averages 120, in the second year 90 to 100, and afterwards gradually diminishes. When the pulse is habitually slower than these rates, it commonly arises from idiosyncrasy. But if the slowness is of recent occurrence, and is great in degree, there may be pressure on the brain, or functional disturbance, as from narcotics. On the other hand, the pulse in health may be preternaturally frequent, from mere constitutional irritability, or from various exciting causes. But in most grave diseases a pulse which at all hours exceeds 120, indicates serious morbid affection, and a pulse of 140, if long continued and feeble, is indicative of danger.

When the stroke of a pulse is hard, strong, and simultaneous with that of the heart, it indicates a state which will bear depletion with benefit, or at least with safety. But from this rule we must except the reaction of pulse which sometimes follows excessive bloodletting or hemorrhage. On the other hand, when the pulse is feeble and easily compressed, and when it follows the stroke of the heart by a perceptible interval, it indicates an atomic state, in which depletion, for the most part, is contra-indicated. The radial pulse may become imperceptible in syncope, in great prostration, and in the moribund.
The radial pulse, says Dr. Williams, in general represents truly the number of the heart's contractions; it can never exceed them. But when the heart acts very feebly its pulsations may not reach the wrist; and when they are irregular in force, some may be propagated to it and others not, in which case the pulse will be intermittent. In some cases the heart, as well as the pulse, omits to contract. This irregularity may be functional, or it may be consequent on organic disease of the heart.

Syncope, or fainting, results from a failure of the heart in force, or frequency, or both. It may be occasioned by a great variety of causes, such as mental emotions, loss of blood, especially during an erect posture, violent mechanical injuries, sedative poisons, &c. Some persons faint readily, on slight occasions, from idiosyncrasy. The pulse at the wrist is weak, and often imperceptible during syncope. The sounds of the heart are also feeble in most cases, very short, and without a second sound, and generally irregular.

Hemorrhage takes place spontaneously in acute diseases, especially in fever, and likewise in different morbid changes of structure. It occurs most commonly from mucous membranes by exhalation, and less frequently by ulceration or rupture.


My Dear Dr. Graves,—I resume my long interrupted medical communication with you by some remarks on the hooping cough, which has been so prevalent at Geneva during the last winter and spring. Seldom have I seen so many children attacked at the same time with the convulsive cough, and my field of observation on the sufferers under this painful complaint has been proportionately great. My remarks have been made on the symptoms, the duration, and the various complications of the hooping cough, as well as on the mortality, causes, and treatment of this disease. You will see hereafter, that I have come to some practical results which I am glad to communicate to you, who take so much interest in the means of lessening the sufferings of your fellow creatures.

The symptoms of the hooping cough have been the same in Geneva as elsewhere; it has generally begun in a slight catarrhal affection, with a short, dry cough, which instead of becoming less and less, increased from day to day, and after a period of two or three weeks become quite convulsive.—This first uncharacterized period has sometimes lasted six or eight weeks, and sometimes has been totally wanting, so that the patients had in the space of a few days the convulsive cough; but the most general occurrence was a short, dry cough, for two or three weeks, and afterwards a regular fit or paroxysm recurring from ten to fifty times a day. The fit or paroxysm was most generally divided into two distinct parts, with an interval, during which the patient could breathe easier, and have a few seconds or minutes of rest. It was generally preceded by a great state of anxiety, which lasted from five minutes to half an hour; the little patients used then to cry, and were very much agitated; older patients used to announce their fit a long time before its appearance, and they were troubled sometimes with a difficulty of breathing and sometimes with nausea. In a young girl aged seven years, the nausea was so intense before the fit, and lasted so long, that the only period of rest which she enjoyed, was that which followed the fit, and even that was of short duration. Sometimes, however, those precursory symptoms used to vanish, and were not constantly followed with a regular fit of hooping cough; and I have chiefly remarked this
Remarks on Hooping Cough.

The favorable result when the patient's attention was directed to some interest, ing object, or attracted by conversation. The mucus expectorated was generally viscid, whitish and transparent; sometimes, however, I have found it in the latter period yellowish and even greenish. I have not met with many cases of swelling of the face in the most violent attacks, and I have reason to think that this symptom, which has been considered as constant in the hooping cough, is by no means a usual attendant of this disease; and the more so, as I have seen during the last winter two cases of simple catarrhal affection in children, who had the swelled appearance of the face which has been considered as characteristic of the hooping cough. I have often met with profuse hemorrhages from the nose; but they have never been attended with any danger, on the contrary, they seemed to relieve rather than to increase the violence of the symptoms.

Nausea and vomiting, chiefly the last, were amongst the most constant symptoms observed in my little patients; some of them have seemed for weeks to have thrown up all that they had swallowed, and yet they were not much emaciated; so that I am disposed to think that the very effort of vomiting presses down the pylorus a certain part of the food, and gives an aliment to the absorbents. This supposition appears to me corroborated by what happens in pregnant women, who during many months seem to vomit all they have swallowed, and yet are not much emaciated, at least not so much as they should be were they to retain no food for the process of nutrition. The tongue has generally been white and furred in most cases, and yet the little patients have generally longed for food, and taken it with great pleasure. The bowels have generally been as regular as they are in children of the same age and constitution.

The progress and duration of the hooping cough has been quite different in most of my little patients. The average duration has been from seven to eight weeks; in some cases it did not exceed three or four weeks, but in other cases it has been protracted to as many months. I have heard of cases which had lasted a year or even eighteen months; but none of those cases have come within my personal observation, and I entertain much doubt as to the correctness of this fact.—I have not found weak or debilitated children more subject to violent fits of the hooping cough, than strong and healthy boys or girls; and the only cause of an increased cough has been the presence of many patients in the same apartment; and I think it would be a prudent line of conduct to put the little patients in different rooms, otherwise when one has a relapse, all the other follow at a short interval, and in this way the duration of the complaint is very much increased.

The progress of the hooping cough has been very irregular: the first period has sometimes been entirely wanting, at other times it has been much protracted; the second period, during which the cough had attained its acme, has been often very short, while the period of decrease has lasted a very long time. In most of my patients I have observed a temporary return of the cough, which seemed to return with as much violence as before; but this relapse, though frequent, was never of much duration; and after two or three days the regular decrease continued its course. The fits of cough were observed day and night; and at first I had not perceived whether they were more frequent during the day or during the night; however, having investigated the subject more closely, I have come to the following conclusion: during the period of the increasing cough, the fits are more frequent at night, and when the hooping cough is on the decrease, the fits are more frequent during the day. The following table shows this fact as observed in two patients, aged, one two years, and the other four years:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Case I.—1st, period, (from the 27th Jan. to the 13th February,)</td>
<td>134</td>
<td>143</td>
<td>27</td>
</tr>
</tbody>
</table>
In both cases the greater number of fits is during the first period at night, and in the second period during the day time. I have met with many instances similar to this, and since I have communicated this singular result to other practitioners, they have had many opportunities of confirming its correctness; and amongst other examples, I may name the two sons of one of our most distinguished surgeons, who told me that he had made the same remark in his family. The fact being well ascertained, what is the explanation? It is easily understood, that during the first period so violent is the cough that it awakens the patient from the soundest sleep; while when the fits are weaker, the frequency of the cough is not so great as to awake the patient. This supposition, however, explains only part of the fact, as it leaves undecided why the greater number of fits takes place in the night during the first period, when the agitation and cries of the little patients seems to bring on constantly new fits. So we are led to suppose, that notwithstanding this last cause of increased cough, it is very likely that motion, amusement, and the open air, contribute to lessen the cough; while rest, the horizontal posture, and the close air of the sleeping-rooms, increase the tendency to the return of convulsive cough. The last conclusion is the more striking, that in adults and in other cases the cough is rather diminished than increased under the last mentioned circumstances.

I have not met with a single well authenticated case of secondary hooping cough; and what may have induced some authors to admit such cases of relapse, is the peculiar prevalence of a convulsive cough amongst the adults, while the hooping cough exists in the same town. During the last winter we have seen many persons attacked with violent fits of cough, attended with vomiting, tears in the eye, and bleeding from the nose. But most of those cases were such as to preclude all idea of a true hooping cough, and in most occurrences it happened in persons who had no communication with children labouring under the convulsive cough.

The only cause which I can admit for the hooping cough, is its transmission by contagion; the proofs of this assertion are the following: In most families where one child was attacked, all the others followed at a short interval. In the schools the transmission has been rapid and general; and in the town of Geneva we have traced the first cases as having caught the hooping cough in a neighboring town, where it had been introduced by a sick child arrived from another county. The only exceptions to the transmission of the hooping cough to members of the same family, has been observed on infants who were suckled; and it is a popular opinion in the United States, that infants at the breast will not catch the hooping cough. I was attending, last winter, an American family consisting of five children, who were all attacked with the convulsive cough except the youngest, who was not weaned till the complaint had entirely subsided in the family.

The various complications of the hooping cough well deserve the attention of the practitioner, as many are serious enough to prove fatal, and others lengthen the complaint, and make it last many weeks, even months. I have never seen a single case of the hooping cough becoming a dangerous complaint when no complication was to be met with, so that I may safely as-

### Table: Remarks on Hooping Cough

<table>
<thead>
<tr>
<th>Period</th>
<th>Start Date</th>
<th>End Date</th>
<th>Cases</th>
<th>Deaths</th>
<th>Recoveries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd period</td>
<td>14th Feb</td>
<td>4th March</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>252</td>
<td>266</td>
<td>548</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case II</td>
<td>1st period</td>
<td>27th Jan</td>
<td>13th Feb</td>
<td>331</td>
<td>258</td>
</tr>
<tr>
<td>2nd period</td>
<td>14th Feb</td>
<td>4th March</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>152</td>
<td>126</td>
<td>278</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>383</td>
<td>414</td>
<td>697</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
sert, that the hooping cough never ends in death unless attended with some other disease. The various forms of complications which I have observed are, bronchitis, pneumonia, anasarca, water in the brain, remittent fever, and a disordered state of the stomach and bowels.

The inflammatory state of the bronchia is a frequent complication of the hooping cough; it is generally attended with a short cough between the fits, and with much fever and agitation; there is generally much uneasiness before and after the fits, and this uneasiness is caused by the difficulty of breathing, and pain felt in the chest. The bronchial inflammation runs easily into pneumonia, and both are frequent complications of the hooping cough. Most of those cases that terminate in death, are attended with inflammation of the lungs; however this is chiefly to be met with in children who are not properly taken care of; and in the higher ranks of society I have not seen one single instance of this cause of death; indeed, so great is the difference in the mortality of the various ranks of society in consequence of the hooping cough, that I may fairly assert, that out of ten fatal cases, nine belong to the poorer classes. I have seen this difference in my own practice, which since the last four years has become more respectable, and the consequence has been, that while in 1833 I had lost four patients, in 1838 I have not lost one, though my little patients have been twice or three times more numerous; but they, almost without exception, belonged to the higher classes. Anasarca is one of the frequent complications of the hooping cough. In most cases there is a slight degree of oedema on the face and arms, but in some more serious occurrences the serous effusion in the cellular tissue and in the cavities extends to such a degree as to cause death. I have not met with such cases in my own practice, but another physician of this town has described to me three cases which have proved fatal, with symptoms exactly similar to those of the dropsy which follows scarlet fever, and in none of the three patients had this complaint been observed, or likely to have taken place.

Water in the brain is one of the most serious complications of hooping cough, and it is not a rare one. The cause of hydrocephalus is easily found in the constant trouble of the circulation during the spasmodic fits of cough; the face becomes then purple, the nose bleeds, and all the veins are swollen to such a point that they seem likely to burst; this intermittent stoppage in the brain circulation is a frequent cause of hydrocephalus in children laboring under the hooping cough. But besides the above mechanical cause, there is also some great disposition to serous effusion of the ventricles which may depend upon the nature of the convulsive cough; this complaint has undoubtedly its seat in the origin of the nerves, and consequently the brain is originally affected; so that it is not to be wondered at if it induces so often the formation of water in the brain. The only difference which I have been able to trace between the spontaneous hydrocephalus and that which comes in the course of the hooping cough, is the different state of the bowels, which are not so costive in the last as in the first. But a greater number of facts is necessary to make it a general rule.

I have often met, in patients laboring under the hooping cough, with a continued or remittent fever; it was sometimes attended with shivering, hot skin, and night perspirations, so as to resemble consumption. Sometimes the fever is constant and lasts for days and weeks. I have seen such cases where it was impossible to find the cause of the constitution of fever. The chest, examined with the greatest care, did not show any inflammation of the lungs or of the heart; the stomach and bowels were in very good order, and after the strictest search, I was obliged to consider the frequency of the pulse and heat of the skin, as caused by some obscure local inflammation.—So serious was one of these cases that it terminated fatally, and unfortunately I could not obtain permission to examine the body.

The stomach and bowels are generally in good order during the hooping
cough; but in some rare cases I have met with a loaded tongue, nausea, and loss of appetite, and in such occurrence, gentle aperients succeeded in doing away with this complication. Often have I seen diarrhoea, but it has never been of much consequence, though sometimes attended with fever.

Of the two epidemics that we have had lately, the first has been the most dangerous for children. From August 1833 to March 1834, twenty-eight children have fallen victims to the complications of the hooping cough. While, from August 1837, to March 1838, twelve only have died in consequence of the same complaint. The forty cases of death have taken place in the following months:

<table>
<thead>
<tr>
<th>In 1833 and 1834</th>
<th>In 1837 and 1838</th>
<th>Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>August, 3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sept. 9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>October, 8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Nov. 3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Dec. 3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Jan. 1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Feb. 0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>March, 1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
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</tbody>
</table>

the first period, the greater number of fatal cases was in autumn, while in the second, it was in winter; but the cases have been too few to draw any practical inference respecting the best or worst seasons in cases of hooping cough.

The age of the forty fatal cases was the following:

<table>
<thead>
<tr>
<th>Under 6 Months, 6</th>
<th>From 6 to 12 Months, 7</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 1 to 2 Years, 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 2 to 3, 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 3 to 4, 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 4 to 5, 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 5 to 6, 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 6, 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

The above table leads us to a very important fact, viz: the danger of the hooping cough in infants, and the decreasing mortality of this complaint as children grow older; to those above six years not one case proved fatal. We may draw the conclusions, that the danger of hooping cough is in inverse ratio with the age of the little patient. This result is at variance with the general opinion amongst English practitioners, who think that in the seventh year, and in children above seven years, this complaint is attended with much danger.—If other facts concur with the above, it will be an additional proof to the usefulness of medical statistics, or rather of the substitution of direct observations to the vague experience of practitioners, who have kept no record of their cases, and who, however, pretend to draw inferences from vague recollections.

The treatment of hooping cough has, at all times, much occupied the attention of the profession, but so various have been the results of experience, that each practitioner advises a remedy as far superior to the practice followed by others; and so much has this path been followed, that we have now a long list of unfailling specifics which have done wonders in the hands of their inventors. And yet, after all, I come to advise a new treatment for this complaint. I have also my specific, and I give it to the public with as much confidence as any of my predecessors. However, I am not so exclusive as to have tried only one method, and I will give the result of my experience on those which I have followed with care and attention.
Emetics are rather a matter of course than of choice in infants and children, who, being unable to expectorate, swallow all the mucus formed in the bronchia; it is also necessary to give a certain activity to the expiratory muscles, and in that also emetics are useful. I have given these every day, or every other day, and have always found it as good to unload the chest as an aperient for the bowels. They are also useful as a preparatory measure for some remedies which act better when preceded with emetics. The syrup of ipecacuanha has been used nineteen times out of twenty; when some particular reason prevented its administration. I have given the powder of ipecacuanha, or even tartar emetic, which, however, does not agree so well with young children as with adults.

I have made a great use of assafoetida both internally and externally. Rubbing the spine with the tincture has often been of great service, and a plaster applied on the chest has helped the actions of internal remedies. I have sometimes given assafoetida in pills, but few have been the instances of the children who could swallow this truly named stercus diaboli. The flowers of zinc is a very good antispasmodic in hooping cough; in 1834, I have made great use of it, in the dose of four to twelve grains a day, and I must say that I have often succeeded in making the fits less and less. I have seen complete cures accomplished with that single remedy. In two very young infants who had a convulsive cough, attended with symptoms resembling epilepsy, the oxyd of zinc has proved very beneficial, and has stopped the cough and the spasmodic fits. I have never seen any bad consequence from the use of this remedy.

Opium, in various shapes, has enjoyed at all times a great favor in the treatment of hooping cough. The chief preparation which I have used is the syrup of white poppy, in the dose of a tea-spoonful once, twice, or three times a day. In some cases, it has taken away the most troublesome symptoms, but without shortening the duration of the disease. In those cases in which it has proved beneficial it has diminished the number of night fits by making the sleep sounder; but even then it seemed to have little action on those which came during the day.

I have often given prussic acid, and in cases similar to those in which the opiates were indicated, viz: when there was much irritation, and a great variety of nervous symptoms.—I have generally given half a grain, and sometimes as much as one grain of the hydrocyanuret of potash in the twenty-four hours, but I have never dared to give a large dose of a poison like prussic acid. Employed comparatively on a brother, whose sister was taking the sub-carbonate of iron, this last remedy had a most undoubted advantage.

Belladonna, in extract or powder of the root, has very often succeeded in cases of hooping cough. I used to give from half a grain to two grains of the root, and in many cases with advantage; however, though the cough was less troublesome and the fits less numerous, yet it seemed more to act as a paliative than as a curative remedy, and in many cases it certainly failed and proved quite inefficacious.

I come now to my specific, or rather to the remedy advised by Dr. Steymann, as the best anti-spasmodic in hooping cough. Dr. Steymann, had advised to give from four to ten grains of sub-carbonate of iron in twenty-four hours; he gave as a rule to increase one grain for each year, so that a child six years old was to take six grains in the day; but from the beginning I found that dose quite inadequate, and I increased it to twenty-four, and even thirty-six grains in young children. I have given it either with water and syrup or mixed with a cough mixture. It has never produced any inconvenience, on the contrary, I have found that all the children treated after this method were much less weakened, and recovered faster than with all other remedies. The proofs of the advantageous effects of the sub-carbonate of iron have been so numerous that I can scarcely enter into the de-
Irritation of the Stomach.

1839.

Irritation indeed, however, and recently, the sister ders following result were bonate lately and hooping so of when ed obtained and me which come of a similar of periodic directed, "The The latter is directed, 1st, To the removal of its local causes, by the substitution of an appropriate diet, and 2ndly, To calming the irritation already existing.—The latter is effected by, 1st: Dilution of the contents of the stomach; 2ndly, Diminution of its sensibility, by the agency of cold or heat; 3rdly, The use g
of astringents in sedative doses, as acetate of lead, sulphate of lime, nitrate of silver, lime-water; 4thly, Stimulating the circulation of the skin by means of external irritants, bathing, frictions, and exercise; 5thly, Stimulating the circulation of the pulmonary surfaces by changes of air; 6thly, Stimulating the nervous system by mental exhilaration.

1. "The removal of the local causes, by the substitution of an appropriate Diet.—When the mucous surface is irritated, it must be looked upon as in the same condition as an irritated portion of the skin, with regard to topical applications; and those substances which are most appeasing to the latter in the form of poultices, are also to the former, as articles of diet. The food then should be vegetable, and consist chiefly of amylaceous substances, as rice well boiled, arrow-root, &c., stirabout taken in moderate quantity, with milk diluted. It is, however, to be observed, that stirabout lies under the imputation of causing heat and itching of the skin, and justly so, those affections being peculiarly prevalent where oatmeal is much used. It is to be ascribed to a resinous matter, in the covering of the grain, soluble in alcohol, which has been ascertained to produce this effect on the skin. When meats are taken, they should be such as are most free from osmazome, as chickens, rabbits, sheeps-trotters, &c., and should always be accompanied by boiled rice or other vegetable matter, in order to diminish the stimulating effect. Of all animal substances that which appears not only to have no stimulating effect, but actually to appease the stomach, is the yolk of egg.

I was informed some years ago, by Mr. Daniel Moore, of the case of a lady laboring under pertinacious vomiting, which he completely cured, by frequently repeated spoonfuls of raw yolk of egg, although it had been previously treated ineffectually, by a variety of the most approved remedies.—Amongst the cases attached to this communication, will be found an instance of vomiting from a congested state of the stomach, in the last stage of diseased mitral valve, in which a similar success attended its employment. I could have added several others, and my failures with it have been principally in hysterical cases, in which, perhaps, it is too disagreeable and disgusting, to be retained sufficiently long to exercise its soothing properties. Eggs, in the form of light made custard-pudding, are commendable; but having mentioned pudding, it must be remembered, that all combinations of flour and butter, in which the latter has to be subjected to heat, and then to be rendered rancid, are not only indigestible, and thus apt to provoke a large secretion of sour fluids from the gastric glands, but are also in a high degree irritant to the mucous membrane. Such are various kinds of pastry, and to these may be added, the rancid oily nuts.

"The articles to be avoided in these cases are, salt and sugar in their various combinations. Even tea should be taken without sugar. In short, let the patient suppose at each meal, that he is going to apply a poultice to the interior of his stomach, and he will go not far astray. Let him also not overload, but eat slowly, and about four times in the day, because mere weight acts as a mechanical irritant, and is felt as a load in the stomach. A habit of eating quickly, is productive of over-eating, hence slow mastication must be strongly insisted on, and in case of defective teeth, the food must be taken still more slowly, and in a comminuted form. These observations appear trifling, but when we reflect, that the food has to come into actual contact with the irritable surface, it cannot but be deemed of the highest importance that it should be presented in the least irritating form. In the whole series of stomach complaints, the physician must have the direction of every thing which goes into the stomach, whether as food or medicine; and to be of real use to his patient, he must be no less skilled in cookery than pharmacy.

2. "Dilution of the Contents of the Stomach.—The effect of water taken into the stomach, is to diminish the irritation of its contents by diluting them. Hence, it is the usual custom to drink towards the conclusion of a meal,—
Another use of dilution, and that which renders it a medicine, is to dissolve the mucus, and thus to render the membrane accessible to astringent remedies. This effect is best obtained by exercising after drinking largely of warm water. The mucus is thus mixed up and dislodged. According to my view, this mode of action explains the efficacy of mineral waters in irritability and chronic inflammation of the stomach. When an invalid, at one of the German Spas drinks six or eight breakers of the water before breakfast, and walks in the intervals, he washes out the mucus, (as I have proved can be done in the dead stomach,) and thus the small proportion of salts held in solution, acts on the membrane as sedative and astringent. This view has to me been confirmed by experience; as I find that by administering one or more tumblers of warm water in the morning, then, after exercise, giving the sedative astringents to be hereafter mentioned, the most striking results can be obtained, and such as are usually only witnessed during a course of mineral waters.

"Another kind of dilution, is to mix mild along with stimulating articles of diet. This is practised at our daily meals, when we use bread or vegetables in alternate mouthfuls, with meats of seasoned dishes. An experienced gourmand at a feast, will even venture to take things which he knows to disagree with each other, if he has access to good stale bread, as by taking a quantity of this, he is enabled to interpose such a substratum, as shall prevent them from coming into immediate contact.

3. "The use of Astringents in sedative doses, as Acetate of Lead, Sulphate of Zinc, Nitrate of Silver, Lime-Water.—I merely state a fact, and am not proposing a theory in describing astringents as a sedative to the mucous membrane when applied in small doses. Let this be judged of by the effects produced, which are diminution of redness, of heat, and of sensibility. Such effects are well exhibited in the most approved applications to the conjunctiva of the eye, and in gargles and lotions injected into the urethra. When the same substances, however, are applied in an undiluted form, then chemical decomposition and destruction of the membrane ensues. Seeing then the importance of attending to doses in these cases, I shall state here, the forms in which I am in the habit of prescribing these substances. They are as follows:—R. super acetat. Plumbi. gr. xij.; Aceti 3 ss; Aq. destil. 3 vij. M. Sum. coch. ij. ampla mane et meridie.

"To the above mixture, an addition may be made of half a grain of acetate of morphee, in case of general restlessness, or in case of the mucous irritation being excited or aggravated by excessive secretion of sour fluid from the gastric glands. In order to give the above and the two following formulae their full effect, the patient should drink a large tumbler of tepid water on an empty stomach, and use a little gentle exercise before taking the medicine. As for the danger to be apprehended from the preparation of lead taken in this way, I can state, that although now for years in the daily practice of writing the above prescription, I have never seen one instance of either cholice or paralytic resulting therefrom.

"The acetate of lead formula, I use in the earliest and more acute cases. Next in point of astringency, and more applicable to chronic cases, is the following:—R. sulphat. zinci gr. iv.; aqua distillat. 3 ij. M. Sumat coch. ij. ampla post aqua calciacae amphorum vacuo ventriculo mane et meridie.

"The last of these formula, and that most to be depended on in chronic cases, which has also the advantage of being well suited to the cases of ulceration of the stomach described in my former paper, is the following:—R. Nit. argenti gr. iv.; Sacchr. alb. gr. iv. M. Ft. pil. vij. Sumat j. mane et meridie. With the same directions as the two former.

"The success obtained in hysterical and convulsive affections by nitrate of silver, appears to me, to be derived from its astringent and sedative effects on the mucous membrane of the stomach. It being decomposed very shortly
after its arrival there, by the free muriatic acid, and by the nitrate of soda, causes it to change its properties before it descends into the bowels, where it may eventually prove a laxative. Both in chronic irritation and inflammation of the stomach, it is an heroic remedy, the effect of which, only requires to be aided by a judicious attention to diet and the management of the bowels, in order to inspire the patient with the highest degree of confidence in the resources of the medical art. The discoloration of the skin, which causes female patients to regard the internal use of nitrate of silver with great apprehension, I have never yet witnessed in any of my patients. The above mentioned dose, from being speedily decomposed, appears to act merely as a topical application to the stomach, and as I am not in the habit of continuing the use of it longer than a week at a time, the absorption of it in an unde-composed form, and consequent deposition of silver at the skin, appears next to impossible.

"The last article mentioned, is lime-water. This is to be taken abundantly as a drink, and mixed with milk or barley-water. I might also have included the decoction of catechu and of log-wood, the latter especially, as being an agreeable drink; but I have preferred to mention only those articles which manifold experience has stamped with a peculiar value in my treatment of this complaint, and leave to the judicious reader to supply the rest, by always bearing in mind, that irritable or inflamed surfaces in the interior, resemble those in the exterior with regard to those substances which come in contact with them.

"The fourth, fifth, and sixth heads, embrace matters of the utmost importance, and without which, all others will prove ineffectual in this complaint. Without exercise in the open air, I have rarely seen permanent benefit obtained, and even at the risk of the cold and damp weather, the patient must go out every day. Under stimulation of the skin, is to be placed an application to which I attach a high value, namely, that of mustard to the region of the stomach. The flour of mustard simply mixed up with water, applied on a cloth over the stomach every evening, and suffered to remain on until smarting is produced, is a powerful adjuvant, and interferes with no other remedy. It also gives a temporary relief from the pain coming on after dinner, and is generally most acceptable to the patient; it requires no dressing except dry lint or wadding. On the head of mental exhilaration much might be said. Here the medicina mentis becomes a most powerful auxiliary. Many physicians know no other remedy of this kind but to send the patient to travel, forgetting how often it proves true, that cælum non animum mutat qui transmare currunt, and that in the stores of the imagination, even when remaining at home, there are many resources by which a healthy interest in life may be excited, alternate employment and relaxation provided, and hopes and expectations for the future enlivened. Of such importance is this, that the patient will not only imagine, but will, at least for a time, actually derive more benefit from a practitioner of high repute, whose words sound like oracles, than from one of inferior eminence, although the prescriptions of both may be the same."—Dub. Jour. Med. Sci. Jan. 1839, from Amer. Jour.

Efficacy of Mercury as an Antiphlogistic Remedy.—M. Delhaye, the author of the following observations very justly remarks—

"The wish to explain every thing in disease is one of the greatest errors in every exclusive system of medicine, whether this be the humoral doctrine, the physiological, or the doctrine of solidism."

There are certain occurrences or facts, which every practical man will admit to be true, and which are yet as mysterious and inexplicable to us in the
Mercury as an Antiphlogistic.

present day, as they were two centuries ago—thus shewing how little progress has been made in the physiology of disease.

In spite of the ingenuity and earnestness of a very able sect of physicians, who have striven to reduce the various forms of morbid action to a few general and primary elements, we suppose that few, if any, of their disciples will be inclined to deny the existence of certain specific diseases and of certain specific remedies.

Take, for the example, syphilis and its (almost) unquestioned antidote, mercury. Can we give any explanation, in the slightest degree satisfactory, of the essential nature either of the disease itself or the modus operandi of the drug? Certainly not.

Again; is not ague an essential and specific form of febrile action? and is not Peruvian bark its antidote, par excellence?

All attempts to explain the intrinsic and real nature of the diseases have entirely failed. In short, we believe that there is nothing exclusive in medicine; and for this reason we do not hesitate at once to express our adoption of a rational eclectism, in preference to all the much vaunted doctrines and systems which have been proclaimed for the last 150 years. It seems to us to be a great error, that of supposing that the science of medicine can ever attain to that exactitude and precision, which appertains to those sciences, which have to do with inanimate matter. A chemical result is invariable and uniform—provided the experiments are entirely alike—at all times and all places. The same is the case with the facts of mechanics and of the other branches of natural philosophy. But this does not hold good in medicine. Not two cases even of the same disease are entirely alike; there is always some trait or mark of difference in the vehemence, duration, or succession of symptoms; and the art of the wise physician is to detect the physiognomy, so to speak, of each case, and to deal with it accordingly. Then, too, the influence of the mind and of the feelings on the course of a disease will never be overlooked by the practical man in directing his treatment.

But to proceed to the immediate object of this paper, we shall first mention a few cases, to illustrate the efficacy of mercury in certain forms of ophthalmia.

Case 1. Chronic Scrofulous (?) Ophthalmia.—A young girl of nervous irritable constitution, had for some months been suffering from sharp darting pains through both eyes, intolerance of light—so great that she always kept her head bent upon her chest, and the tarsi were quite contracted inwards, &c. and these symptoms were attended by loss of appetite and general feverishness. It was a matter of difficulty to ascertain the state of the eyes, in consequence of the spasmodically closed state of the lids. The cornea of the left eye had partially lost its transparency, and presented a deep ulcer on its lower half. The right eye seemed to be only sympathetically affected.

Dr. Delhaye says that, when this case was first submitted to him, he was a most believing proselyte to the doctrines of the physiological school, and that he therefore advised bleeding, leeches, blisters, low diet, &c. The disease however was not at all mitigated by this treatment.

M. Stievenart of Mons, a distinguished oculist, was called into consultation. Agreeing with Dr. Delhaye as to the nature of the disease, he suggested the omission of all depletory and lowering measures, and the use of small doses of calomel and belladonna—a pill, consisting of a fourth of a grain of calomel and a sixth of a grain of powdered belladonna leaves, to be taken every four hours—of an opiate collyrium, and of frictions upon the eyelids with the extract of hyosciamus, thrice daily.

On the third day after the adoption of this treatment, the patient could look at objects without much uneasiness, and by the end of the week both eyes were well, with the exception of the ulcer on the left eye.
It is to be observed that a nourishing and somewhat generous diet was administered at the same time, malgré les symptômes de gastrite, adds Dr. Delhaye.

Case 2. A child, who from her infancy had been subject to repeated attacks of ophthalmia, was seized in her seventh year with scarlatina, which was accompanied with severe thoracic symptoms. Purulent effusion into the right cavity of the chest took place, and required the operation of paracentesis thoracis. While recovering from this dangerous affection, the eyes, more especially the right one, became the seat of a most distressing ophthalmia. There were frequently recurring sharp pains through the orbits, great intolerance of light, &c. Antiphlogistic measures were used for some time, but without any advantage.

Dr. Delhaye, remembering the happy result of the former case, now adopted a similar treatment, although he was in some degree afraid of a mercurial action in a system so debilitated. The calomel and belladonna were given in small doses, the eyes were bathed with a mildly anodyne wash, and a nutritious regimen allowed. The cure was complete by the twelfth day; and it is worthy of remark that the fistula in the side—for this was still open—had nearly cicatrized by the same time.

Case 3. A girl, 15 years old, and of a lymphatic habit, had been subject from her childhood to attacks of ophthalmia, which had caused slight opacity of both corneas. The present attack was a very protracted one, and was attended with much constitutional disturbance. Leeching, blistering, &c. had been tried without effect.

The treatment recommended by M. Stievenart was therefore adopted, and, by the end of the second week, the ophthalmia had almost completely disappeared.

Mercurial Inunction in Peritonitis.—Dr. Delhaye reports three cases to illustrate the efficacy of this mode of treatment. According to him, two were cases of entero-peritonitis occurring within a week after delivery; the third case was one of chronic entero-peritonitis in a woman 60 years of age.

It seems to us unnecessary to give the details, as the reports are rather proxix and vague.

Dr. Delhaye attributes the practice of mercurial inunction on the abdomen in puerperal peritonitis to M. Vandezeande of Anvers, and seems to regard it as one of the greatest discoveries of late years in practical medicine. An ounce or more of the strongest mercurial ointment is rubbed in every 24 hours, until a decided effect is induced.

He strongly recommends the same mode of treatment—the inunction of the mercurial ointment on the limbs, &c. so as to induce a decided ptyalism quickly—in cases of chronic inflammation of the meninges of the encephalon and of the spinal marrow.

His memoir closes with the report of several cases of very troublesome amycta—wherein a nail had grown into the flesh of the finger, and had caused severe irritation and sometimes ulceration also—quickly relieved by keeping the parts well covered with the strong mercurial ointment; of chronic scrofulous abscesses and sores treated successfully in the same way; and, lastly, of the phlegmasia alba in puerperal women.—Bulletin Med. Belge.
PART III. MONTHLY PERISCOPE.

On Physical Examinations.

Being called on by a distant subscriber for an opinion of the practical value of what are called "physical signs, or physical examinations," we feel it a duty to say a few, and but a few words on the subject. By "physical signs" are meant those evidences of health or of disease which are manifold to the sense of hearing; whether by percussion, or mediate, or immediate auscultation, as it is called.

In the first place we must object to the latter term, as specifically used to mean the application of the ear, either to the stethoscope, or to the surface of the part under examination. Such we believe, is its common application. As however, percussion addresses itself also to the ear, and the signs developed by this mode of examination, can only be detected by this sense attentively directed to the sounds produced thereby, it should, in our humble opinion, be included under the term auscultation, and generically, to include all those species of examination in which the sense of hearing is concerned in the apprehension of the evidences developed.

This point in nomenclature being disposed of, we next proceed—not to define the possible merits of physical examinations but to make a few observations on their present application to practical purposes.

That healthy and morbid conditions are distinguishable in respiration and pulsation as well as in some points of fatal circulation, we have no doubt; and that these distinctions should be familiar to, and well understood by all practitioners is alike true. Nor is it less so relative to percussion, particularly when applied to the two great cavities—the thorax and the abdomen. Nay more—we are fully satisfied of the truth that many absolute facts can be developed with greater or less precision by both of these species of examination. But we are further of the opinion, that all the facilities for demonstration of the truths of the internal condition of parts, by auscultation before death, which the immense Hospitals of Paris, and the very remarkable mortality which attends their administration afford, have not—even to the present day instructed the most acute auscultators to determine many parts with absolute precision. Pretty clear inferences of a general nature as well as occasionally, some which are very specific are deducible from these examinations by some few of the ablest and most experienced in their uses. So also there are a few, whose minds may have been peculiarly captivated by, and drawn to these modes of examination, and who have a peculiar tact for them even of less
experience, may have arrived at the point of considerable accuracy in detecting some internal parts by the physical signs; but with such, as with most persons of peculiar zeal—especially those which is fired by novelties, or whose imagination is inflated by things which look forth from a distance, there is a proportionate want of sound judgment in other respects, and with them, the thing becomes a hobby, and is rode down, before it becomes a steed fitted for valuable service.

We are pleased to see young men aspire to great acquirements and accomplishments, provided they do it in the right way. This way is, mostly, great and uniring devotion to study—patient and steady inquiry into natures' ways—by making a sure ground-work of knowledge—storing the mind with truth, as a full garner; and when all this is done—still, in the wholesome exercise of that humility which is ever found in the mind thus well stored, await the development of that proportion of reasoning powers which shall not fail to draw legitimate conclusions from all the truths of the case. Now our observation of more than seven septennials has taught us—omitting all remarks on our own developments of the higher intellectual powers, except that they have been late in being developed, and are yet extremely incomplete—our observation, we say, has taught us that the powers of accurate discrimination—of adoption and of exclusion; that is, of proper examination and selection of facts, and the judgment, the great mental power by which alone these parts can be safely, properly and profitably used, are often, very often late in being developed, and in some instances, they even become items in the character of the individual. A few there are however, who afford indubitable evidences of an earlier development of the nobler mental powers. These few will be found obeying, independently of all other influences, the sound dictates of true reasoning from a wholesome selection of facts chastely and impartially made; whilst the former—the great herd, will be found contenting themselves, at least as long as the community on whom they are dependent will allow it, with a routine course of procedure—with mimicking some man, or set of men whom they believe for once, greater than themselves. Nor have they any of the safe and wholesome guidance of reason to determine their course, but are fully contented and justified in their own estimation in doing so, because some one else did so. This great herd seem to need to be told that some men proceed in the business of life by the small developments of mind—such as the imitative powers, by which children learn to talk and to assume the manners of others. Whilst there are others, though few, who go forth on the solid unimpracticable ground of a judgment, which seems constantly omnipotent in controlling their wills and their purposes. And these few are often very honestly considered by the former
as obstinate, and this, forsooth, because their strong and conclusive reasoning is incomprehensible to, and will not bend about in obedience to the mere assertion of some of those applepates.

With this view of mankind, what are we to expect from a plan of examination which, in general, requires, at least at the present day, the experience of a professional life, with constant investigations, in connexion with prior examinations during life, but repeated erroneous diagnosis, prescriptions, and prognostics! Some of these errors have, when they terminated innocently, been the subject of no little amusement to us; and we hold in lively remembrance some very amusing facts arising out of some of those errors in diagnosis from auscultation; such as a single dose of calomel so acting on the hepatic function as to remove, within a few days in the form of a copious secretion of black and green bile, all the difficulties which had been dreaded to depend on tubercular phthisis; but again, when loss of fortune or of life have followed in their wake, they have stood as monuments of the lamentable, and disgraceful arrogance and conceit of those who committed them.

There is another objection to ready confidence in most of these examinations, and this is found too, in the constitution of men's minds. Some, yes many, are attracted by the glare of one thought, especially if it be an unusual one. It exerts a sovereign despotism on the whole palace of intellect, and banishes hence, every thing which is not in strict servitude to itself. Thus it happens that, when the physical signs, as they are called, are trusted to for diagnosis, the former, or physiological, as internal signs of the old class of symptoms may be called, are entirely disregarded, whilst the more doubtful evidence brought by the stethoscope and the pleximeter are exclusively relied on.

But we have protracted this article far beyond our design when we began it. We will, therefore, bring it to a close, by giving our candid opinion, that the modes of examination by auscultation and percussion, are yet in a very imperfect state; and that if ever perfected they will still require an extensive and varied experience thoroughly to decipher the case, which a long professional life only will afford; and that even then, these signs are only to be taken, equally into the groundwork for reasoning in practice, with the well established signs of disease, previously in use, to sustain their part only, in the reasoning process without claiming any general supremacy.

It should not be supposed that we incline to insinuate that auscultation (and we use here, the term, generically,) is of no use, or that it affords no valuable evidence in certain cases, which could not be developed by other means. We are far, from such an opinion. On the contrary, we would recommend
to every student and every practitioner, to study well, and prac-
tice diligently, the physical examinations, and study well the
most valuable authors on the subject; and amongst such, for
the practical utility which they are calculated to afford, we will
take the liberty of recommending the reader to Lænnec and
Gherard, and to Dr. Bigelow's communication on the rules of
Physical Examination, extracted into our present No. from the
Boston Medical Journal. This last is so divided and so con-
densed that it may be easily and profitably read and remember-
ed by all. But we must not fail to conclude with this caution
to the partially experienced stethoscopist, and indeed to all,
that in all cases, other rational symptoms, must be allowed their
full force in determining the diagnosis.

If we are called on by our correspondent to contrast the two
modes of examination—that is, auscultation in the sense in which
we use that term, and the other signs of disease by which phy-
sicians are governed without auscultation, we feel compelled
to state, that, at least in the present state of the former, it bears
no proportion, in practical utility, to the latter. If therefore, one
is to be relied on to the exclusion of the other, we must at this
time prefer to place our dependence on the latter, for these rea-
sons chiefly; that it affords a greater variety of facts in point, and
consequently a fairer scope of investigation: and that it is more
applicable to that state and period of disease in which the con-
clusions arrived at may be valuable. They are also less ex-
posing and harassing to the patient, whilst the former detects
facts which avail but little for practical good, as they consist
chiefly of irremediable disorganizations, or those extremities of
disease in which all remedies are worse than useless.

Dr. J. H. Griscom, in the New York Medical Journal, has
furnished a report of a case of abstraction of the uterus after
delivery—which we extract, not so much for any practical be-
 nefit which may be derived from its perusal, as for the purpose
of disabusing the public mind of the belief most industriously
inculcated by many of the quasi doctors of the day, that Sep-
timus Hunter, the perpetrator of this act of butchery, was a re-
gular bred physician. It appears from the report, that he was
an "irregular," having no shadow of claim to the title or office
which he assumed. We subscribe fully to the justice of Hun-
ter's sentence, but at the same time we most sincerely believe
that those communities which legalize and patronize admitted
ignorance and quackery, are in a moral point of view equally
guilty with him who ignorantly and wickedly trifles with or de-
stryos the lives of his fellows.
Abstraction of the Uterus.

Case of abstraction of the Uterus, after delivery.—On the 7th of April 1839, at the request of Ira B. Wheeler, Esq., coroner, I examined the body of Mrs. Cozins, the wife of a respectable mechanic, No. 323 Madison-street at the time absent from the city. I was assisted in the examination by Dr. S. C. Ellis, in the presence of Drs. Nichols, Lobstein, and Walters. Before the examination, we obtained the following history:—Mrs. C. was delivered of a healthy, living child, about one & N., without any other assistance than her sister and a female friend, both married, and the former a mother. The cord was tied and cut secundem artem; but the placenta was retained beyond the usual time. Three hours having elapsed without its disengagement, the sister went for a physician and obtained the services of Septimus Hunter, who represented himself to be a physician, but was at the time a clerk in a drug store. Upon his arrival, he immediately addressed himself to the task of removing the placenta, the successive stages of which operation will be mentioned presently.

We were shown, prior to the dissection, a mass of fleshy substance in a washbowl, which I at once recognised as a uterus; also, in another vessel, the placenta was shown us, which was entire, but without a vestige of the umbilical cord attached to it. The latter was subsequently discovered in a pail of dirty water.

On stripping the body, the abdomen was found very sunken. The usual incisions were made, and the following uncommon appearances were presented: 1st, A total absence of the uterus. 2d. The broad ligaments much torn and ragged, and partly deficient. One fallopian tube was absent, but both ovaria remained in situ. 3d. The upper extremity of the vagina was open and free, so that the hand introduced from without would pass directly into the cavity of the abdomen, and the intestines could be touched. The intestines were high up as left by the contracting uterus. 4th. A considerable quantity of extravasated blood was seen on each side near the ovaria, forming spots of ecchymosis beneath the membranes. No effused blood was seen, however, within the abdomen. 5th. A laceration of the vagina, about an inch and a half in length, a short distance from its superior extremity.

By reverting to the uterus, we find the deficient parts attached to it, viz: one fallopian tube, entire; a portion of the broad ligaments, and about an inch of the upper end of the vagina, which had been divided by an even circle, though manifestly without the aid of any cutting instrument. The external surface of the uterus was about half denuded of its peritoneal coat, leaving the muscular fibres entirely bare. Its internal surface was smooth, and the part where the placenta had been attached very apparent, presenting a slight brown colour. The whole organ was about the size of a child's head at birth. Large quantities of coagula were about the body; the bedding was thoroughly soaked with blood, and a large puddle of it, of a bright red colour, covered the floor beneath the bed.

The examination of an intelligent female witness before the coroner's jury, developed the following facts:—Immediately after the quasi doctor arrived, he took hold of the cord, and making strong traction upon it, he completely inverted the uterus, the placenta still adhering; pulling still harder, he severed the cord from its attachment and gave it to the witness. He then took hold of the placenta, removed it, and laid it aside, saying there was more to come away still. He then grasped the uterus of the unfortunate patient, and by dint of "excessive" pulling, after about three quarters of an hour, (during which period he relaxed his efforts occasionally to rest and remove his coat, the miserable patient constantly uttering the most piercing and heart rending cries, such as "you are tearing my heart out, &c.") he succeeded in dragging the uterus from its attachments, and separated it from the body, holding it in his hands, and exhibiting it as a proof of his
prowess and skill, saying that "he never had met with such an extraordinary case before." When asked what it was, he replied, "either a polypus or a false conception." During this brutal operation, the groans of the suffering woman were at first strong and loud; these, together with the force which the man was seen to use, excited the alarm of the attendants, who urged him to desist and allow other medical advice to be called; but with incredible hardihood he persevered, insisting that all was right, that she must endeavour to be patient, and that he would be responsible for her life. Towards the close of the performance, her cries became more and more faint, and at length entirely ceased. He thought she was endeavouring to support the pain with patience, and encouraged her in so doing by words. When he turned to look after her, and to feel her pulse, he found that she was dead.

It is due to the profession to say, that the performer of this horrible tragedy is not, de jure, a member of the profession, though he asserts that he has a recommendation from three surgeons of the British Navy, of his medical proficiency, and that he has had a large amount (three hundred cases) of obstetric practice. He appears to be about thirty-two or thirty-three years of age, and has been in this country two years.

Medical Electricity.—It will be recollected by our readers, that we gave, sometime since, in the pages of the Journal, a description and account of the manner of application and action of a variety of electrical and galvanic apparatus for medical purposes, with a limited view of our experience in the use of some of them. In compliance with our request to be informed of such facts as might result from the use of any of them, we were a few days since, favored with the following interesting letter, on the application of the electrical box, from Dr. J. A. Hamilton, of Waynesboro', in this State:

Waynesboro', August 7th, 1839.

"Dr. Sir—The day after my arrival at home, an opportunity was afforded me for trying the effects of "The Box,"* in a case of Rheumatism. The subject was a young man of general bad health; the part affected, the left knee. The leg of the same side was flexed on the thigh at an angle of sixty-five degrees, and could not bear the least extension without producing the most excruciating pain. I applied the box once, and let it remain fixed to the knee for one hour; at the end of which time, he was able to extend his leg nearly to its greatest length. The following day, it was not convenient for me to see the patient; and there was, consequently, no application made. The next day, however. I found him, when sitting, or in a recumbent posture, able to extend the limb perfectly; but when in an erect posture, he was only able to bring the toes of the diseased limb to the floor.

*The Electrical Box, or Box of Sousselier, one of which Dr. H. had just obtained in this place and taken home with him immediately previous to the date of this letter.
The Box was now applied again, and in one hour, he was able to stand firmly on his feet. "Two days after this second application, I saw him again, and was happy to learn that he had suffered no return of pain, and was able to pronounce himself perfectly well."

The above facts with which Dr. Hamilton has had the kindness to favor us, are extremely interesting; not only because the patient was promptly cured, but because they tend to confirm our confidence in a remedy, not the least distressing in its operation, and very convenient in application.

We are happy in being able to add another case of similar import, which recently occurred in the practice of Dr. Edwin Le Roy Antony, of Hamburg, S. C. He was called to a lady who was suffering the most extreme distress from a rheumatic pain in one of her knees. The diseased joint was in such a condition as to afford the most exquisite torture on every attempt to move the leg in any direction.

After many ineffectual attempts to relieve her distress by the various means ordinarily used in such cases, the doctor resorted to the use of the Electrical Box. After duly exciting the electric, it was passed on the diseased joint for some minutes. Being obliged to leave, for an hour or two, the Doctor, finding that evident relief was obtained, was unwilling to discontinue the application, resorted to the expedient of binding the Box to the lame knee, and left, with the advice that the application should continue until his return. On his return, however, at the appointed time, he was surprised and gratified by meeting his patient walking about the room and enjoying a perfect exemption from pain in the part. She continued free from the affection.

During the past ten or twelve months, we have had opportunity of instituting several experiments in the application of the galvanic uterine exciter; which, whilst they have not been altogether so satisfactory and conclusive as those above stated, tend to confirm the fact of the power of the galvanic current in causing fluxion to the negative pole on establishing a current through the system. Nor can we say of this instrument as of the Electrical Box, that it is of very convenient application.—This objection is, however, measurably obviated by the fact, that the application of the uterine exciter is made by the patient herself; and needs nothing more of the physician than intelligible instructions relative to its use. We will give in this place, a brief account of the several cases in which we have caused its application.

Case 1. Miss——, had for many years suffered much distress and great impairment of the digestive functions and general health, in consequence of suppressed menses, from a long continued uterine prolapse, consequent on the use of
corsets. The corset we proscribed, and the uterus was treated for prolapse for a few months, when her menstrual difficulty vanished and the menstrual flux returned with great regularity and continued for the proper time and quantity, without the least perception of any of the distresses which had ordinarily attended this period. Her general health was rapidly restored, and her healthy aspect and feeling increased so as speedily to excel any former period of her life since puberty. She retired to her home in the country. In the course of a year or two however, her prolapse being entirely neglected, her menstrual difficulties began again to harass her. This she suffered for a time, without obtaining competent medical aid, and we were called on for minute instructions in her case, as it was not then convenient for her to remain in the city. These were given for her self-management. This management she undertook and performed as well as she could; but it was so poorly done, that her difficulties were but partially removed. Her menstrual pains were not so excessively severe as they had formerly been, but the deficiency of the monthly discharge increased, until, finally, her viscera became obstructed and enlarged and her digestion more than ever impaired. Thus she continued for a long time, with increasing swelling and hardness of the liver and the spleen in consequence of the almost entire suppression of the monthly discharge. In this condition she returned to my care. The uterus was again treated, with some, but not such decided benefit as on the former occasion. The secondary diseases received likewise their due share of attention, but with partial benefit; as the cause, the more or less considerable menstrual deficiencies tended monthly, to their greater confirmation. In this state, the menstrual discharge was ushered on with some pain in the head, back, &c. and continued but twenty-four to thirty hours.

In this state, and at the decline of one of her monthly periods, the uterine exciter was applied, but with little or no benefit. We should have mentioned that all other means of restoration were used, both before and since the galvanic current was in use.—We have been thus minute in stating the facts of this case, because the apparatus failed of producing beneficial results. The liver, spleen, kidneys and spiral marrow, have long been suffering the determination of fluxion to them, which, in health, the uterus should have eliminated from the system.

Case 2. This was also the case of a young lady, brought from a distance and placed under our care in consequence of extreme and alarming distress suffered at the menstrual terms. Her dysmenorrhoea had been so long continued, without appropriate treatment, that the returns were protracted to a period of seven, instead of four weeks; and when the flux appeared, the distress was such as to cause great apprehensions of death. The diffi-
cully arose from a gradually increasing prolapse. This was cor-
rected forthwith, with the effect of bringing on the next menstrual
flux, at four weeks and three days. The treatment being con-
tinued, as far as necessary to secure the steady adjustment of
the womb, the next two periods were precisely at the end of
the lunar month, with ease, and in proper quantity. The patient
was now discharged.

Some twelve months after, she was returned to me, after en-
joying her improved health in free exercise in dancing, the use
of corsets, &c. during her absence; which, under the neglect
of treatment as the symptoms of returning disease began to ap-
ppear, had the effect of producing an irregularity, consisting of
protracted periods, and a limitation of the menstrual flux to one
day, followed by a complete cessation on the next, attended with
considerable distress. The returning prolapsus was duly at-
tended to, with relief to all the symptoms, except the deficien-
cy of monthly discharge. This continued as before, despite of
the ordinary medicinal means employed for its correction. After
ineffectual efforts by ordinary means for two periods, on the
usual decline on the second day of the third period, I caused
the galvanic uterine exciter to be applied—the positive pole
to the neck and the negative to the os uteri. This applica-
tion was made on the evening of the day, when the cess-
tion of discharge commenced as usual, and the apparatus
was worn through the night. On the following morning the
patient found as full a catamenial flux as necessary. The ap-
paratus was then removed. On the second day, the discharge
continued as free, and very similar to its ordinary appearance
on the first day. In the evening, however, it began to decline,
as on the previous day. The apparatus was again applied for
the night. On the morning following, which was the third day
the discharge was again found increased to about half the ordi-
nary rate of flowing. In the evening it began again to decline,
and no further application was made.

Case 3. This occurred in a married lady of Augusta, who
labored under sterility from uterine prolapse. Her menstrua-
tion was suppressed and painful. When the period arrived, I
directed the apparatus applied as usual; the negative pole to
the neck of the uterus, and the positive to a denuded surface
on the nape of the neck. After some hours continuance of this
application, no effect was observable. The patient then, des-
pairing of effect, placed the silver plate on her tongue. Within
a very short time after this manner of application, not exceeding
twenty or thirty minutes, the menstrual flux commenced, and
continued for several hours after the removal of the apparatus,
which was done soon after the appearance of the menstrual dis-
charge. Finding the discharge decline after a few hours, she
 reapplied the apparatus, and with like results: and again, a third
time: after which it was discontinued. We have given this case entirely from memory, as we received it from the patient, but we are satisfied that in all essential points it is substantially correct. We could give some more particulars of interest in this case, but for the absence of the patient from the city.

Case 4. This was a chronic case of dysmenorrhœa, with chronic visceral obstructions occurring therefrom, and accompanied with dyspeptic distresses. The menstrual flux came on every four or five weeks, but declined after the first, or (sometimes) the second day. The apparatus was left with the patient for trial. It was applied by herself—the silver plate to the neck and the zinc one in the vagina; but there was reason to doubt the proper adjustment of the zinc concave to the os uteri. It was applied once only, and on the decline of the discharge.—No effect was observable. Having proved the inefficacy of all ordinary prescriptions, she never reapplied it.

The medical ocular Revellant. This apparatus has been applied to only two eyes, both of the same patient. Both eyes became highly inflamed, with great swelling of the palpebræ and conjunctiva—exquisitely irritable on the admission of light, &c. The usual treatment, including leeching, was adopted; still the local inflammation remained unabated. The left eye was first inflamed. The ocular revellant was then kept in application for two days; at the end of which time the inflammation was greatly reduced; so much so that the patient could open the eye by the power of the muscles of the part, so as to shew the conjunctiva and cornea. The swelling of the conjunctiva was almost entirely reduced, but was still red. With weak astringent lotions kept applied with lint, the white of the albuginea became distinctly visible in the twenty-four hours. The apparatus was applied to the right eye with like effect. During this time, the patient, in attempting to kill a fly by a violent blow with his hand, struck the left eye-ball with the end of one finger. On opening the eye for the dressing afterwards, it was found that the cornea was so injured as to allow the escape of the aqueous and a portion of the vitreous humour. The dressing was continued, and a considerable part of the fullness of the ball preserved, and even the power of perceiving light by the left eye; but no power of distinct vision is left in it. The right eye was entirely preserved.

We have no additional facts of importance, to add to our former remarks on the use of the galvanic purgative.