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ORIGINAL AND ECLECTIC.

ARTICLE IX.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D.,
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[Continued from page 172 of March No.]

CASE LI.—German, aged 40: height 5 feet 9 inches; weight 150 lbs.; black eyes, black hair, sallow complexion; occupation, bar-keeper.

October 16th, 1857, 8 o'clock P. M. Has just entered the hospital. Is unable to give coherent answers, and is either stupid, or unable to speak the English language. His companion states that this patient has been in Savannah for two months, and has been sick with chill and fever for two weeks. He is exceedingly weak, and his intellect wanders. Pulse 112, rather feeble.

R. Calomel, grs. xii.; sulphate of quinia, grs. vi. Mix: administer, and follow with castor oil in four hours.

R. As soon as the calomel has acted once, commence with sulph. of quinia, grs. v. every three hours, up to grs. xx.

October 17th, 11 o'clock A. M. When I saw this patient last night, I supposed that the stupidity, and difficulty of speech, were due, in great measure, to the fact that he was a foreigner, imperfectly acquainted with our language. Careful examination this morning, however, shows that the difficulty of speech, and torpor of intellect, is dependent upon the effects of the malarial poison, (either directly or indirectly,) upon the brain. When questioned, endeavors to converse—commences sentences, but is unable to finish them.

Pulse 124, very feeble; respiration 28. Tongue, dry, hard and rough, and coated with dry, brownish-yellow fur. The

tongue feels very hard and rough. There is not moisture enough in his mouth to produce any sensible effect upon a bit of paper pressed against the tongue. Skin, warm and dry. The temperature of the skin corresponds to the feebleness of the pulse, but not to its frequency, and not to the frequency of respiration. Says that he feels well.

R. Mustards to extremities; cut-cups to temples and back of neck.

R. Administer freely, brandy, infusion of Virginia snake-root, spirit of Mindererus, and sulphate of quinia.

8 o'clock P. M. The cut-cups and mustards aroused him for a short time, but he has relapsed into the state of partial stupor, in spite of the action of the sulphate of quinia and stimulants.

R. Continue stimulants, infusion of Virginia snake-root and sulphate of quinia.

Oct. 18th, 11 o'clock A. M. No improvement. Tongue very red at edges and tip, which are free from fur. Surface of tongue coated with dry, yellow fur, and presents the same dry, rough feeling and appearance. Teeth coated with sordes. The pulse is so rapid and feeble that it is almost impossible to ascertain accurately its number of beats—it feels like the delicate pulsations of a minute capillary filled with water. The pulsations cease, as soon as the slightest pressure is made. Pulse 155 to minute. The heart merely thumps (flutters). The two sounds are merged into one, and cannot be distinguished. The sounds of the heart correspond in number to the beating of the pulse—155 to the minute. The correspondence of the two was examined, not only by separate calculation, but also by applying the ear over the region of the chest, and the hand over the pulse, at the wrist. Respiration 34, spasmodic. Skin covered with cold, clammy sweat. Extremities are at least 20 degrees below the normal standard. Trunk and head feel cold—they are several degrees below the normal standard.

The action of the heart is feeble—the capillary circulation is exceedingly feeble and sluggish—the distribution of the nutritive and force elements is correspondingly retarded, and as a necessary consequence, the chemical changes are diminished and altered both in quantity and kind.

The patient is very restless, tosses about the bed, and is with the greatest difficulty retained in bed. Passes his water and feces in bed. Intellect wandering—talks incoherently—says that he is perfectly well and wishes nothing but water. When aroused, his eye looks bright, and there is no expression of pain or uneasiness upon his countenance.

During the last thirty-six hours, has taken 50 grains of the sulphate of quinia, together with large quantities of stimulants. Mustards have been frequently applied. The effect of these

remedies appear to be only palliative, they have produced no permanent beneficial effect. Whenever the mustards and stimulants were withheld, the forces diminished rapidly and the patient would relapse almost into a profound stupor. The action of the mustards was very slow, on account of the sluggish capillary circulation.

R. Continue stimulants—apply bottles of hot water to the extremities—administer 10 grains of the sulphate of quinia, immediately, and repeat every three hours.

R. Blister to back of neck.

9½ o'clock P. M. The mustards and stimulants aroused him, and at 6 o'clock P. M., this evening, his pulse was fuller, his tongue was moister, his intellect clearer, and the restlessness had in a great measure disappeared. The patient, during the momentary absence of the nurse, got out of bed, and attempted to walk across the floor, to the bucket of water at the other end of the ward. He had not proceeded more than five steps, before he fell upon the floor, completely exhausted. Almost immediately his pulse became more frequent and feeble, in fact, almost entirely disappeared, and his extremities became much colder. Mustards were again applied and stimulants administered. Under the action of these, his circulation, both general and capillary, was increased somewhat in force, and his exhausted forces revived.

Now, his pulse is 135, and his respiration 32. The sordes on the teeth, which were this morning perfectly dry, are moister—the tongue is moister—the pulse is fuller (although still exceedingly feeble and flickering) than it was this morning.

There is an unnatural brilliancy about his eye, and excitement about his intellect. He converses freely for the first time—says that he feels perfectly well, and wishes to go immediately home to the hotel, and take the place of the bar-keeper, who, he says, is sick. Complains bitterly of being confined to bed, when nothing is the matter with him, and when he feels as strong and as well as he ever did in his life. Has been quarreling with the nurse, and threatens vengeance, because he confines him to bed and will not allow him to dress himself and go and drink freely of water. Complains greatly of thirst—keeps his eye fixed on the vessel containing water, notwithstanding that he is liberally supplied. Has vomited several times. The blister is acting, and the serum is of a golden color. Has taken 30 grains of the sulphate of quinia since 11 o'clock this morning.

Has just passed urine: it is perfectly clear and amber-colored. The color of the urine is in striking contrast to that of patients who are able to resist the effects of the malarial poison to the extent of the production of the febrile excitement. When the constitution is able to cope with the malarial poison, we have a

rapid pulse, rapid respiration, high temperature, rapid chemical change, and high colored concentrated urine. Specific gravity of urine, 1015·3—reaction strongly acid. The urine changed the litmus blue paper to as bright a red as a strong mineral acid. The rapidity of the change also corresponded to the action of a powerful acid. After standing 70 hours, the reaction was still decidedly acid, and there was no deposit of any kind. When the urine was evaporated, the residue was a dark reddish-brown viscous mass, resembling tar. After prolonged, tedious and careful evaporation, it was found to be impossible to reduce it to a solid state. When the urine, concentrated to the consistence of a syrup, was treated with nitric acid, there was a slight effervescence, and a few crystals, appeared. These crystals were transparent, and resembled rather crystals of saltpetre than the silvery crystals of nitrate of urea. After standing for a short time these crystals disappeared, and did not again appear even when the fluid was concentrated by evaporation. If these crystals were nitrate of urea, the whole amount existing in 1000 grains of urine must have been less than 2 grains. In a fluid ounce of urine, not more than a trace of uric acid could be detected after careful examination. Under the microscope, a few small crystals could be detected, which were invisible to the naked eye.

Analysis of 1000 parts of urine contain—

Solid Matters, - - - - -	34.482
Water, - - - - -	965.518
Urea, - - - - -	a trace.
Uric Acid, - - - - -	a trace.
Ext. and Color'g and Organic Matters,	24.805
Fixed Saline Constituents principally }	9.655
Phosphates, - - - - - }	

The fixed saline constituents were principally the phosphates.

A short time after this observation, the excitement and restlessness of this patient disappeared, and he went into a profound sleep, and *died at 1 o'clock, A.M.*

(14.) AUTOPSY TWELVE HOURS AFTER DEATH.

Exterior.—Limbs and trunk round and full, and apparently in full flesh; the skin, over the whole surface except the face, presented a fair white color. There was no settling of the blood in the capillaries of the most dependant portions of the skin, producing the mottled appearance previously noticed. This may be due to the fact, that the patient was under the action of stimulants at the time of death.

HEAD.—*Dura-mater* normal. *Arachnoid* membrane opalescent (pearl-colored) in many spots. Serum was effused between the arachnoid membrane and pia-mater. Blood-vessels of pia-

mater filled with blood. Substance of brain was firm, and was altered neither in consistency nor in appearance. Blood-vessels of the substance of the brain not more distinct than normal. Ventricles of the brain were almost entirely filled with light yellow serum. Light-yellow serum was effused around the medulla oblongata, and superior portion of spinal cord. The effused serum appeared to fill completely the space between the spinal cord and its membranes, and the surrounding vertebral cavity. When the medulla oblongata, and superior portion of the spinal cord were removed, the serum flowed in (the shoulders being slightly depressed), and filled the vertebral canal.

CHEST.—*Lungs* normal. Blood-vessels of the dependent portions engorged with blood.

Heart, normal in size and structure. The ventricles and auricles contained clots; portions of these clots were free from colored corpuscles, and presented the yellow color of whipped fibrin. Surrounding and attached to these were ordinary coagula of blood. The vena cava and all the large venous trunks in the abdominal cavity, were filled with dark, almost black, coagulated blood.

ABDOMINAL CAVITY.—*Liver*, somewhat enlarged, presented a singular mottled appearance; at a distance, it presented a light bronzed color; upon nearer inspection, the lobules were found to be distinct, elevated, and of a light bronze color, whilst the spaces between the lobules inclined to a slate color. There were several spots, varying from two inches to half an inch in diameter, of a uniform slate color. The structure of the liver was unusually firm; it required considerable force to tear it asunder, it cut toughly under the knife, and the lobules started out from the cut surface as if they had been bound down. The fibrous capsule surrounding the exterior of the liver, and forming a sheath for the large vessels lying in the portal canals, was thickened, and the individual lobules of the liver were surrounded with fibrous tissue. These facts which were demonstrated, not only by the touch and naked eye, but also by the microscope, show that this liver was in a cirrhotic condition. Cirrhosis of the liver, in this case, was not caused by the action of the malarial poison, but in all probability by the habitual use of ardent spirits. This patient was a bar-keeper. Men in this occupation are, as a general rule, addicted to the free use of ardent spirits. The liquors drunk in this country, at the hotels and bar-rooms, contain much alcohol, which acts upon the secreting structures of the liver, and upon the blood-vessels, and excite adhesive inflammation in the areolar tissue, about the small twigs of the portal vein, and in the areolar tissue of the portal canals, by which serous fluid and coagulable lymph are thrown out. Under the microscope, the substance

of the liver contained many dark looking masses, resembling the altered blood corpuscles of the spleen, and the black granules and flakes of black vomit. These dark masses were not sufficiently numerous to have any marked effect upon the organ. When the fibrous capsule was torn off, it presented a light slate color, and yet, when magnified and carefully examined, but few of these dark masses were seen in the meshes. The structures of the liver, and the liver cells, contained numerous oil globules. These oil globules existed in sufficient numbers to induce the belief that the liver was in a state, not only of cirrhosis, but also of fatty degeneration. The blood-vessels of the liver were filled with dark blood, which did not change to the arterial hue upon exposure to the atmosphere.

The mottled appearance of the liver, and the want of that decided slate and bronze color, characteristic of malarial fever, were due, not to any peculiarity of the effects of the malarial poison, but rather to the pathological conditions of cirrhosis and fatty degeneration. Allowing due weight to these pathological changes, it is evident that the change in the color of the liver was similar, in all respects, to the slate or bronze color of livers which were normal before the onset of the malarial fever. The change in the color of the liver during malarial fever is due to changes in the amount, and physical and chemical constitution of the blood in the capillaries of the liver; and to the physical and chemical changes in the bile, and the contents of the secretory apparatus; and not to the deposition of black granules in the structures of the liver. I have seen the slate and bronze color as well marked in the liver, when these dark masses were absent, as in the liver where they were most abundant. The peculiar color of the liver is due in a great measure to changes in the coloring matter (hæmatin) of the blood. The blood will not change to the arterial hue when exposed in the atmosphere. This altered coloring matter, resulting from the destroyed disintegrated blood-corpuscles, or from the blood-corpuscles acted on by the malarial poison without actual disintegration, escapes and permeates the surrounding tissues, and imparts the peculiar color to the liver. The color is also due to the altered color of the bile. In all the cases of malarial fever which I have thus far examined, I have found the bile to be of high specific gravity—thick, concentrated and of a greenish black color when seen in mass, and of a gamboge yellow when spread in thin layers. The altered bile also infiltrates the surrounding tissues, and gives this peculiar color to the liver. This peculiar color can be, to a certain extent, abstracted from the liver by boiling with water. I have always found the filtered decoction of malarial fever livers to be of a brownish-yellow color, whilst the decoction of yellow fever livers is of a bright golden color, whilst that of

normal livers is of a light-yellow. After the altered coloring matters of the blood and bile have infiltrated the structures of the liver, they will sometimes remain for a considerable length of time without being absorbed, and communicate the peculiar bronzed color to the liver, long after the restoration of its normal functions, and the disappearance of the malarial fever. I have observed, however, that the intensity of the color of the liver, bears a marked relation to the time of convalescence: as convalescence advances, the color diminishes in depth.

The liver contained animal starch. Several of the hepatic ducts were isolated and treated with tincture of iodine, and carefully observed under the microscope. Their color, with the exception of a few small spots, was simply changed to that of the tincture of iodine. In these spots, the color was changed to a bright-blue. In other cases of malarial fever, I have seen long portions of the hepatic ducts changed to a bright-blue color under the action of the tincture of iodine. These facts would show that they do sometimes contain animal starch.

The *gall-bladder* was filled with concentrated bile of the consistency of molasses, and of the color (when seen in mass) of a saturated solution of iodine. When spread in thin layers the bile presented a gamboge color.

SPLEEN, enlarged: it was at least three times the normal size. The structures of the spleen were so much disorganized, that, in attempting to remove it from the abdominal cavity, the capsule and trabeculæ gave way under a slight pressure, and the fingers plunged into its soft substance. Dark brownish-purple, almost black, mud flowed from the rupture. After thirty-six hours' exposure to the atmosphere, the color of the mud of the spleen remained unchanged. Under the microscope, the mud of the spleen contained a great number of dark, reddish-brown, and reddish-black granules, and conglomerations of granules. These granules and black masses, composed of conglomerated granules, resembled the bodies found in the liver, and also the black sediment of the black vomit of yellow fever. Similar granules and masses have been observed in normal spleens. They appear, however, to be most abundant in the malarial fever spleens of long standing. In cases which have terminated fatally, after only a short illness of two or three days, I have observed that these granules were not so numerous as in cases of longer duration, and in some very recent cases they were not more numerous than in the spleen of health. These masses appear to be derived from the disintegrating blood-corpuscles.

ALIMENTARY AND INTESTINAL CANAL. *Stomach.*—Blood-vessels upon its exterior filled with blood. Mucous membrane bore no marks of inflammation, and was not more congested with blood than usual. The exterior and mucous membrane of

the jejunum presented the usual appearance. There was no unusual appearance either of congestion, irritation or inflammation. The mucous membrane of the ileum, especially at the lower portion, was more congested, and of a darker color than usual.

The intestinal canal throughout its entire length was empty. The mucous membrane presented a yellowish appearance, probably due to the presence of bile.

The solitary glands of the ileum, especially in the neighborhood of the ileo-cæcal valve, were numerous, enlarged, elevated, distinct, and of a brown color. When the intestines were held up to the light, the blood-vessels, filled with blood, could be distinctly seen sending off branches to each gland. The glands of Peyer were large, distinct and elevated. Several of these glands in the lower portion of the ileum were three inches in length. These glands, however, were not inflamed, as in typhoid fever, but presented the usual pale appearance.

Kidneys.—Each kidney had upon its inferior surface a spot about one inch in diameter, of a slate color, resembling in all respects the color of the exterior of the malarial fever liver and spleen. When these portions of the kidney were cut, they presented a bronzed color, for the depth of $\frac{1}{8}$ th of an inch. Microscopical examination showed the absence from these portions of the kidney of those granules and brownish-red and reddish-black masses, so abundant in the spleen and liver. Microscopical examination showed that the excretory structures of the kidney was not altered in these discolored portions. These facts sustain the assertion that I have previously made, that the color of the liver in malarial fever does not depend upon the diffusion through its substance of dark granules and granular masses. The bladder was empty. The scrotum was reddened, and appeared to be blistered and excoriated. This was due to the action of the intensely acid urine.

CONCLUSIONS.

1. This case corresponds to the congestive fever of American writers. The prominent symptoms of this case were—rapid, feeble pulse; rapid, thoracic respiration; relaxed skin, with cold, clammy sweat; sluggish capillary circulation; deficient and perverted chemical action; reduced temperature; deranged physical, muscular and nervous forces; and aberrated intellectual action.

2. The rapid, feeble action of the heart—the rapid, feeble pulse—the almost entire arrest of the circulation and chemical changes in the capillaries; were attended by a reduction of temperature, and loss of muscular and nervous force, and aberration of the actions of the sympathetic and cerebro-spinal nervous systems. These disturbances of the chemical changes, and physi-

cal, muscular and nervous forces, were reflected in the urine. The appearance and chemical constitution of the urine, were strikingly different from the urine of those cases of intermittent, and remittent fever, where the action of the poison is attended by an excitement of the general and capillary circulation, and of the respiration, and corresponding rapid chemical changes, and high temperature. In those cases of malarial fever, where there is a rapid full pulse—moderately accelerated respiration—rapid introduction and distribution of oxygen and corresponding high temperature—the urine is invariably high colored, concentrated, and rich in solid matters. If we examine the analyses of the urine of those cases of intermittent and remittent fever, which I have recorded in previous numbers of this journal, and at the same time, bear in mind, the fact, that the urine was excreted during the summer season, and during starvation, it is evident that during the febrile excitement, the urea is greatly increased. When the febrile excitement (rapid distribution of oxygen, and rapid chemical change, and high temperature) subsides, the urea and other solid constituents of the urine decrease. After the establishment of convalescence, when the patient is able to take food freely, the solid constituents of the urine again rise, notwithstanding that the temperature is the same, or a few degrees above that of the intermission. The urea during convalescence, is probably derived partly from the food and partly from the metamorphoses of the tissues. In this case, on the other hand, the arrest of the circulation and chemical changes of the capillaries and the reduction of temperature, was attended by a complete alteration of the physical and chemical constitution of the products resulting from the metamorphoses of the blood, organs and tissues. The urea and uric acid were absent, the acid of the urine was greatly increased and the physical properties of the urine altered.

Whether the disappearance of the urea and uric acid resulted from the arrest of the metamorphoses of the muscular tissue, or of the blood corpuscles and nitrogenized elements of the blood; or from the disturbance of the normal chemical changes, by the introduction of the malarial poison, amongst the substances undergoing chemical change; or from the primary action of the malarial poison upon the sympathetic and cerebro-spinal nervous systems, and the perversion of the chemical changes of the organized elements, by the consequent aberrated nervous action; cannot be definitely answered in the present state of chemical, physical, physiological and pathological science, because the fundamental facts are wanting. It has not as yet been definitely settled, whether urea and uric acid* results from the metamor-

* The following observations throw some light upon the origin of uric acid. I kept a large Indigo snake (*coluber couperi*) in a cold dry room, during the winter

phoses of the blood corpuscles, or of the other nitrogenized constituents of the blood, or of the muscular tissue; or from all these sources. The chemical, physical, physiological and pathological properties and relations of the malarial poison, are unknown. What relations, chemical, physical, physiological and pathological, do the metamorphoses of the organized bodies which result in the formation of urea and uric acid, and of the extractive and coloring matters, bear to the metamorphoses induced by the malarial poison? It is impossible to give any answer to this important question, which lies at the foundation of the solution of the problem. Neither would the answer of this important fundamental question, clear up the difficulty, for we have here, complicated phenomena and numerous complicated actions and reactions. So complicated and involved are the phenomena that the solution of one necessarily demands the solution of all.

Such questions as these demand an answer.

What is the chemical, physical, physiological and pathological relations of the malarial poison to the sympathetic and cerebro-spinal nervous systems?

What is the effect of derangement of the *sympathetic nervous system* upon secretion and excretion, in fact, upon all the chemical changes of the elements of the human organism?

season, without food and drink. This serpent remained in a partially torpid state for three months. He was never entirely without the power of motion, and would, when aroused, show considerable power. At the end of this time, the serpent died. When the heart was exposed after death, its surface was covered with a chalky, granular substance, which was demonstrated both by microscopical and chemical analysis, to be the urate of ammonia. The external surface of the aorta, and its largest branches, were in like manner covered with the urate of ammonia. When the substance of the heart was cut, numerous particles of the urate of ammonia were found along the course of the blood-vessels and amongst the muscular fibres. Numerous particles of the urate of ammonia were also discovered amongst the fibres of the muscular coat of the aorta and its largest branches. When a portion of the muscle of the heart or of the muscular coat of the aorta was treated with acetic or hydrochloric acid under the microscope, thousands of small lozenge shape crystals of uric acid were discovered lying around the muscular fibrillæ. The urate of ammonia was deposited in no other organ or tissue except the heart and the aorta and its largest branches. The following appears to be the explanation of this singular phenomenon:

The heart was the only portion of the muscular system in continual action during the season of hybernation. Muscular force is developed by chemical change. The heart therefore was the only portion of the muscular system undergoing chemical change. The blood was concentrated, deficient in water. There was not sufficient water to dissolve the urate of ammonia, resulting from the chemical changes of the blood and muscles of the heart, by which the muscular force was developed. The urate of ammonia, consequently remained just where it was formed. This observation not only points to the origin of uric acid and ammonia in the animal economy, but also demonstrates that the muscular force is developed during the chemical changes of the elements of the blood and muscles. If these conclusions be legitimate, true and universal, it follows as a necessary consequence that any alteration in amount, or kind, of the chemical changes of the blood and muscular tissue must be attended by corresponding alterations in the amount and kind of the products resulting from those chemical changes.

Will the derangement of the secretions and excretions differ with different poisons, when the actions of those poisons are limited, simply to the *sympathetic nervous system*?

What is the effect of derangement of the *sympathetic nervous system* upon the *cerebro-spinal nervous system*?

Can the *sympathetic nervous system* induce alterations in the actions of the organs and tissues, in the secretions and excretions, independent entirely of any direct action, but by communicating or reflecting its aberrated action to the *cerebro-spinal nervous system*?

What is the effect of derangement of the *cerebro-spinal nervous system*, upon secretion and excretion, in fact, upon all the chemical changes of the elements of the human organism?

Will the derangements of the secretions and excretions differ with different poisons, when the actions of those poisons are limited simply to the *cerebro-spinal nervous system*?

What is the effect of derangement of the *cerebro-spinal nervous system*, upon the *sympathetic nervous system*?

Can the *cerebro-spinal nervous system* induce alterations in the actions of the organs and tissues, in the secretions and excretions, independent entirely of any direct action, but by communicating or reflecting its aberrated action to the *sympathetic nervous system*?

Would the phenomena of nervous and muscular action and of secretion and excretion vary, if the action of the poison or poisons were primarily upon the blood, rendering it unsuited to the healthy action of the *cerebro-spinal* and *sympathetic nervous systems* and of the muscular system—rendering it unsuitable for the formation of the secretions and excretions?

Notwithstanding the absence of the facts necessary for the solution of these complicated phenomena and problems; still the present observation, that arrest of capillary circulation and chemical change due to the action of the malarial poison, was attended by a reduction of the temperature, aberrated muscular and nervous action, and a marked alteration of the properties of the urine; is of great interest, in its bearing upon the treatment of congestive fever.

3. In the treatment of that form of malarial fever called congestive fever, those remedies should be employed, which excite the general and capillary circulation—promote the introduction and distribution of oxygen—increase the chemical changes—and excite the development of the muscular and nervous forces. Sulphate of quinia and diffusible stimulants, brandy and carbonate of ammonia, should be freely and promptly administered and sinapisms freely applied. Bottles of hot water, or better still, the hot water bath, should be used to impart heat and stimulate the capillary circulation, and relieve the engorgement of the large

organs. Brandy and red pepper may be applied to the surface with advantage. The sulphate of quinia may be administered in doses of 10 to 30 grains, every one, two or three hours, according to the urgency of the symptoms, up to 60 or 100 grains during the 24 hours. The best method of administering the sulphate of quinia is dissolved in a weak solution of citric acids or in lemon juice. It is perfectly soluble in this, and is much more readily absorbed, when in this soluble form. If the stomach rejects the sulphate of quinia, it should be administered in solution with starch, by the rectum. The stimulants will in many cases be the means of prolonging life until the sulphate of quinia can be absorbed and act. Whilst therefore the stimulants do not cure the disease, they often preserve life, by supporting the patient until the sulphate of quinia can act.

The carbonate of ammonia is peculiarly valuable in that form of malarial fever, where there is a rapid, feeble pulse, and corresponding rapid, feeble action of the heart. The observations which I have recorded in the previous numbers of this journal, prove that heart clots are almost always formed previously to death from malarial fever. It is probable that cases often occur where the sudden and distressing symptoms are due, in a great measure, to the formation of these heart clots during life. The feeble action of the heart, and the sluggish circulation of the blood are very favorable to the formation of these heart clots. The researches of Benjamin Ward Richardson* have established the fact, that the fibrin of the blood is held in solution in the blood-vessels by ammonia. The free administration of the carbonate of ammonia, then, in congestive fever, would fulfil two indications. 1st. Stimulation; 2d, Prevention of the formation of fibrinous clots in the heart and large blood-vessels.

4. The failure of this mode of treatment to prevent a fatal termination in this case, was due to several causes. The disease had been allowed to progress, without any opposition, for at least ten days before this plan of treatment was instituted. During this time, such profound alterations of the blood, spleen and liver, had taken place, and the chemical changes so perverted, and the correlation of the physical, vital, nervous and muscular forces, so disturbed, that no plan of treatment, however vigorous, however appropriate, could arrest the progress of the disease.

The symptoms were, without doubt, aggravated by the cirrlosed condition of the liver. The alterations of the color of the blood and of the secretions of the liver in malarial fever, point to profound alterations. The cirrlosed condition of the liver would necessarily increase these morbid effects. The cirrlosed condition of the liver, also points to the former intemperate

* The cause of the coagulation of the blood, by Benjamin Ward Richardson, M. D., London, 1858.

habits of the patient, and the effects of these upon the constitution, no doubt, influenced materially the course of the disease. As far as my observations upon malarial fever extends, I can assert that this disease most frequently proves fatal in those who have been addicted to the intemperate use of ardent spirits, and especially in those, in whom a cirrlosed condition of the liver, has been induced by the free use of ardent spirits. This statement is worthy of the attentive examination and consideration of the profession.

It is probable that the fibrinous clots found in the heart were formed some time before death, and if they did not determine, they at least hastened the fatal termination.

5. In this case, the marked reduction of the temperature of the trunk and extremities, was unattended by the shivering and sensations of cold, characteristic of the chill of intermittent and remittent fever. The observations which I have recorded, in previous numbers of this journal* have established, that in the chill of intermittent and remittent fevers, the temperature of the trunk is actually elevated several degrees above the normal standard, whilst the temperature of the extremities is depressed many degrees below the normal standard. In this state of things, we find a feeble pulse; feeble circulation of the blood in the capillaries of the extremities; diminished chemical action in the capillaries of the extremities; accumulation of blood in the large organs of the trunk; and increased chemical change in the blood and large organs of the trunk. This state of things is attended by shivering of the muscles, and a sensation of cold, just as a similar reduction of the temperature of the extremities in cold weather, would be attended by shivering of the muscles, and a sensation of cold. On the other hand, in that form of malarial fever, called *congestive fever*, where the temperature of both the trunk and extremities is depressed, the patient often complains of no sensation of cold, and in some instances, even says, that he feels perfectly well, and there is no shivering of the muscles. Here we find a feeble, general and capillary circulation, and an arrest and perversion of chemical action, both in the trunk and in the extremities.

Whence this difference?

Without attempting to decide dogmatically upon the solution of these complicated phenomena, we would simply state, that in congestive fever, the chemical changes in all parts of the body, are so diminished and perverted, and the correlation of the forces so disturbed, that the muscular system ceases to indicate by shivering and aberrated action, and the nervous system ceases to indicate by the sensation of cold, the depression of tempera-

* Cases I to VIII, June number, 1848, pp. 377-396.

ture, consequent upon the arrest of capillary circulation and chemical change. As muscular and nervous force, and even sensation, depend upon chemical change, it is but reasonable to suppose, that a marked perversion and diminution of chemical change should be attended by an arrest of muscular and nervous action, and even of sensation. In congestive fever, whether from peculiarities of constitution, or from the overwhelming amount of the poison introduced, those chemical changes are not excited, which result in the breaking up and removal of the malarial poison. The febrile excitement following the chill of intermittent and remittent fever, appears to be due to the equalization of the general and capillary circulations, and to the distribution through the blood-vessels and capillaries of all parts of the body, of the active chemical changes, and high temperature, which during the chill were confined to the trunk. It is highly probable, that during the febrile excitement, the malarial poison is drawn into the round of chemical changes, and so altered, that its action is for a time suspended. Hence the intermission or remission.

The fever then is a favorable symptom, and the want of fever, a most unfavorable symptom.

The manifest duty of the physician in congestive fever, (if these views which have been suggested by the results of actual observation and experiment, be correct,) is to administer those remedies which will excite the general and capillary circulations—excite chemical change—excite fever—and destroy, or counteract, or paralyze the action, or eliminate the malarial poison.

If these views be true, the paroxysms of malarial fever, are due to the alterations and partial destruction of the poison, during the active chemical changes of the febrile excitement. To the question, why should the blood be accumulated in the large blood-vessels, and capillaries of the organs of the trunk, during the chill, I can, in the present state of physiological and pathological science, give no satisfactory answer.

CASE LII. Irish seaman, aged 24; light hair, light blue eyes, fair complexion; height 5 feet 7 inches—stout, well built; weight 150 lbs.

October 12th, 1857, 12 o'clock M. Entered the hospital two hours ago. Now, he is out of his head and can give no history of his case. A companion states that he has been watching at night on board a brig, lying in the river, below the ship-yard, along the low marshy shore, and that he was taken sick with chill and fever one week ago, but did not, until two nights ago, discontinue watching at night. He is said to have used ardent spirits freely. Pulse 137, rapid and feeble; respiration 32; skin hot and dry. Tip of tongue clean and of a bright red color—

the remaining portion of the tongue is coated with yellow fur. The tongue is dry and harsh, to the touch, and feels, when the fingers are passed over it, like sand-paper. The patient mutters to himself, continually, half-formed sentences and imperfect words. Continues to mutter in the same incoherent manner, notwithstanding strenuous efforts to arouse and attract his attention. It is with the greatest difficulty he can be made to open his mouth for the inspection of his tongue.

About one hour ago his extremities felt cooler, and his pulse was more feeble than it is now. Mustards were applied to the extremities—they increased the temperature and rendered the pulse somewhat fuller, and aroused his intellect for a moment, but he again relapsed into the state of delirium.

R. Cut-cups to the temples and back of neck. Apply cloths, wet with ice water, around the head.

R. Calomel, grs. xij.; follow with castor oil in four hours.

R. Mustards to the epigastrium and extremities.

R. Brandy, infusion of Virginia snake-root, sulph. of quinia, and spirit of Mindererus.

8 o'clock P. M. The mustards and free use of stimulants failed to arouse him. He is in a profound stupor, from which it is impossible to arouse him. Pulse 124, full and strong. His pulse has increased in force and volume under the action of the stimulants. Skin hot and dry. Tongue presents the same dry and rough appearance.

R. Apply blisters to back of neck and over epigastric region.

Oct. 13th, 11 o'clock A. M. The cut-cups to the head, the sinapisms upon the extremities, the blisters upon the back of the neck and epigastric region, and the diffusible stimulants and the cathartic, have all failed to arouse this patient, and he now lies in a comatose state, and passes his urine and feces in the bed. The nurse states that, during the night he was much more restless than at the present time, and it was necessary to give constant attention that he did not fall out of the bed. The medicine has operated freely, and the blister has drawn well. The serum from the blistered surface is of a golden color.

Respiration 30, stertorous. The patient lies in a stupor, with his eyes shut and mouth open, and emits a suppressed groan, or whine, at every breath—his appearance, and the sounds which he emits, are similar to those of the patient described in Case XL., page 78*. These groans appear to be entirely involuntary, and depend upon the state of the organ of voice and the mode in which the air passes through it.

Pulse 144, feeble. The sounds of the heart cannot be distinguished—they are both united into one, and the heart makes a

* Southern Medical and Surgical Journal, February number, 1859.

short, quick, thumping sound. The number of the thumps of the heart corresponds to the pulse—144 to the minute. Temperature of atmosphere, 77° F.; temp. of hand, 103°5; temp. in axilla, 104°5. Skin hot and dry; teeth coated with sordes. Cannot get a sight of his tongue, as his teeth are tightly closed, and he is entirely insensible. I have just applied mustards to his extremities—they do not arouse him—and after remaining on one hour they scarcely redden the surface.

I have delayed the administration of the sulphate of quinia up to the present time, with the hope that the cut-cups and cold applications to the head, and blisters and sinapisms, and stimulants, would arouse the patient from the state of profound stupor.

Without having any hopes of his recovery, we will administer the sulphate of quinia, as an experiment.

R. Sulphate of quinia, grs. v. every three hours, up to grs. xxx. Continue diffusible stimulants, brandy and spirit of Mindererus.

9 o'clock P.M. Profound coma. Respiration 32, spasmodic. Pulse is gone. Heart merely flutters. Head and trunk warm—extremities cold. Have again applied mustards to the extremities and administered diffusible stimulants, but they do not produce the slightest effect, and he will die in the course of one hour.

The patient died half an hour after this observation.

(15.) AUTOPSY TWELVE HOURS AFTER DEATH.

Body in good condition, apparently not at all reduced; limbs full and round, muscular, well developed; complexion very fair—there appeared to be a slight tinge of yellow. Skin of the dependent portions of the body slightly darker than that of the superior portions of the body. Rigor mortis remarkably strong—it required all the force that I could exert to straighten his arms, and they would return back to the bent position with considerable force. After the right arm had been first straightened out at right angles to the body, and while I was standing between the arm and the body, engaged in opening his abdomen and thorax, I felt the pressure of a hand and arm upon my back. This was the hand of the dead man, which had slowly returned to its former position by the contraction of the muscles.

HEAD. Dura-mater, normal in appearance. The longitudinal sinus of the dura-mater contained an elongated, flattened, ribband-like, fibrinous clot, which was free from colored corpuscles, of a light yellow color. This, without doubt, was formed before death. Arachnoid membrane, opalescent, pearl-colored in many places. Blood-vessels of pia-mater filled with blood. Substance of brain appeared to be normal in color and texture, as far as an examination with the naked eye extended—it was perhaps a little softer than usual, but this may have been due

to post-mortem changes, and at any rate would not account for the symptoms during life. Ventricles of the brain contained no serum. Blood-vessels of medulla-oblongata and superior portion of spinal cord, not congested with blood.

CHEST. Heart.—Exterior surface of the heart adherent at all points to the pericardium. There was no free space between the heart and the pericardium—hence no fluid lubricated the heart. Muscles of the heart paler than usual.

The right auricle and ventricle contained a yellow clot, free from colored blood-corpuscles, which was attached to the columnæ carneæ and cordæ tendineæ of the right ventricle, and extended through the auriculo-ventricular opening into the auricle. This clot sent off a large branch into the pulmonary artery. This branch of the yellow fibrinous clot, which almost completely filled up the pulmonary artery, sub-divided and sent branches down the right and left pulmonary arteries, and these branches again divided and sub-divided into numerous branches, the smallest of which were not larger than fine threads. These fibrinous threads passed deep into the blood-vessels of the lungs, probably almost to the commencement of the capillaries.

The left ventricle contained a similar yellow fibrinous formation, almost entirely free from colored blood-corpuscles, which was attached at one extremity to the columnæ carneæ and chordæ tendineæ, and extending through the auriculo-ventricular opening into the auricle, sub-divided into branches, which passed up the pulmonary veins, and sub-divided into numerous smaller branches which occupied the smaller divisions of the pulmonary veins. These fibrinous bodies of the pulmonary veins and arteries were very elastic—with care they could be drawn out of the smaller branches of the pulmonary veins and arteries, four and six inches in length, without breaking, notwithstanding that the smallest branches were very delicate. The aorta contained a similar clot. All these clots were of a bright yellow color, almost entirely free from colored blood-corpuscles, and presented almost an organized appearance, and were, without doubt, formed long before death.

It is worthy of note, that the heart and arteries and pulmonary veins, contained little or no blood. The large venous trunks were distended with partially coagulated black blood. When the blood from the large venous trunks was exposed to the atmosphere, it assumed slowly and imperfectly the arterial hue. The blood appeared to have been collected in the capillaries and veins. If the chemical changes between the blood-corpuscles and liquor sanguinis, and between the blood-corpuscles and the capillaries, and the structures and fluids surrounding the capillaries, be arrested, as a necessary consequence the circula-

tion of the colored corpuscles through the capillaries must be greatly interfered with.

Lungs—Normal in appearance and structure—lower (dependent) portions congested with blood. This was due to the action of gravitation. The trachea and bronchial tubes and air cells contained much froth.

ABDOMINAL CAVITY. *Liver*.—The liver presented a much darker color, upon its exterior, than normal, but not the dark slate color of cases of malarial fever of longer standing. When incisions were made into the liver the cut surface was different in appearance from that of the healthy liver, and approached the bronze color of malarial fever. The color of the cut surface, however, was several shades lighter than that of malarial fever of longer standing. On the under surface of the right lobe, were several spots, of the dark slate color peculiar to malarial fever. When incisions were made into the liver, through these spots, the substance of the liver for one-eighth of an inch, presented the regular bronze color of malarial fever. The liver cells presented the usual appearance. In some cases they appeared to contain more oil than normal. The tissues around the secretory cells contained numerous small and large oil globules. The presence of this oil may have been due to the action of the alcoholic stimulants.

The liver contained animal starch, without a trace of grape sugar. The liver was carefully tested for grape sugar, as soon as it could be removed from the body. The weather was cool, and the substance of the liver had not undergone decomposition to the slightest extent; and the time which had elapsed since death, was not of sufficient duration to account for the disappearance of the grape sugar. Weight of liver, grains 29416—equals ozs. $75\frac{1}{4}$, equals lbs. 4, ozs. $3\frac{1}{4}$.

Spleen, enlarged, softened, disorganized, and of a dark slate malarial color—when pressed gently between the fingers, the trabeculæ could be felt giving way. The cut surface was of a dark, purplish-brown color—from the cut surface, issued a dark, purplish-brown mud. After eight hours exposure to the atmosphere, small streaks, inclining to an arterial hue, appeared upon the cut surface of the spleen, and probably were due to the change in the blood which issued from the divided vessels. These streaks of mud, inclining to the arterial hue, occupied but an inappreciable fraction of the whole surface. When the dark mud (effused blood) was examined under the microscope, it was found to consist of colored and colorless corpuscles and dark granules. Some of the colored corpuscles were swollen and altered in shape—the alteration was by no means universal, or remarkably great. When the splenic mud was spread upon a glass slide, and treated with tincture of iodine, and

viewed under the microscope, a few irregular blue particles appeared, resembling animal starch. Weight of spleen, grs. 7562, equals ozs. $17\frac{1}{2}$, equals lbs. 1, ozs. $1\frac{1}{2}$.

Alimentary and Intestinal Canal.—Exterior surface of stomach and intestines looked pale. Blood-vessels of omentum and mesentery were filled with black blood. The stomach contained a yellow, mucus-like fluid. The mucous membrane of the stomach was dyed yellow by the bile. With the exception of this discoloration, the mucous membrane of the stomach appeared to be normal. There were no marks of inflammation.

The small intestines contained large quantities of yellow mucoid matter, mixed with soft fecal matters. When carefully and completely washed under a gentle stream of cold water, the free edges of all the valvulæ conniventes, presented a bright red and bistre color, which diminished in intensity towards the attached portion. The whole surface of the mucous membrane of the small and large intestines, was of a darker color and indicated much more congestion than usual. I do not consider the congestion of the blood-vessels of the mucous membrane, as a pathological alteration, due to either the primary or secondary effects of the malarial poison, because, at the time of his death, the patient was under the action of a cathartic. Cathartics, as far as my experiments upon animals have extended, produce engorgements of the vessels of the mucous membrane of the intestines. Glands of Peyer, not enlarged or inflamed, normal in size and appearance. Solitary glands did not attract attention.

KIDNEYS.—This subject had but one kidney—this corresponded to the right kidney. The inferior surface of the kidney presented a dark slate-colored spot, two inches in diameter—the color of the spot resembled, in all respects, the slate color of the malarial liver. When an incision was made into the substance of the kidney through this slate colored spot, the cut surface presented a bronze color to the depth of about one-sixth of an inch. The bronze color gradually shaded into the normal color of the kidney. With the exception of this slate colored spot, the color of the kidney was normal.

The pelvis of the kidney and superior portion of the ureter, contained a few drops of a fluid which, to the naked eye, resembled pus. Bladder contracted—contained no urine.

CONCLUSIONS.

The formation of the heart clots, and the blocking up of the pulmonary arteries and veins, with tough elastic fibrinous bodies, demand a careful consideration. Was the formation of these clots, before death, due to the absence of the volatile alkali of the blood? or to the abnormal formation of fibrin in the blood? or to disturbances in the nutritive and excretory processes?

or to the impeded and sluggish circulation? It may have been due to one or all of these causes—it was certainly accelerated by the impeded and sluggish circulation. The acetate of ammonia (spirit of Mindererus) was administered freely in this case—not however with any design of preventing the formation of heart clots, but rather for its refrigerant and diaphoretic effects. We cannot say, that the administration of this remedy had no effect upon the formation of the fibrous bodies—because they may have been formed previous to the admission of the patient into the hospital. We believe the carbonate of ammonia, to be far more efficacious in congestive fever than the acetate of ammonia, on account of its general stimulant influence on the circulation and organic nervous system, and its power to increase the secretions. As far as my observations extend, the formation of heart clots, during life, is very common in malarial fever. In the fifteen postmortem examinations which I have recorded in the previous numbers of this journal* heart clots were found in ten cases; and of the remaining five cases, one was a case of typhoid fever, combined with malarial fever, another was a case of malarial fever of long standing, where the patient died of exhaustion, and in the remaining three, no special examination for heart clots was instituted. If the formation of fibrous bodies in the heart and blood-vessels, be common in malarial fever; and if the statement of Dr. Benjamin Ward Richardson of London, that the fibrin is held in solution in the liquor sanguinis in the living blood-vessels, by ammonia, be true; and if the statement which I have endeavored to substantiate by numerous cases recorded in the previous numbers of this journal† that the action of the malarial poison is depressing, rather than inflammatory, be true; then *carbonate of ammonia* should be administered freely in malarial fever. It should be administered because it excites the general and capillary circulation—excites the chemical changes in the capillaries necessary for the development of the muscular and nervous forces—arouses the sympathetic and cerebro-spinal nervous systems—promotes secretion and excretion—and furnishes the volatile alkali to the blood, which holds the fibrin in solution.

* Case xxiii, August number, 1858, p. 529. Case xxix, October, 1858, p. 662. Case xxx, October, 1858, p. 669. Case xxxi, October, 1858, p. 674. Case xxxii, November, 1858, p. 726. Case xxxiii, November, 1858, p. 728. Case xxxv, November, 1858, p. 737. Case xxxvi, November, 1858, p. 740. Case xxxvii, November, 1858, p. 743. Cases xxxviii, xxxix, xl and xli, February, 1859.

† Case i., June, 1858, pp. 382–384. Case ix., July, 1858, p. 438. Case x., p. 441. Case xxxiii., September, 1858, pp. 589–592. Case xxviii., October, 1858, p. 655. Case xxix., p. 664. Case xxx., p. 667. Case xxxv., November, 1858, p. 732. Case xxxviii., February, 1859, pp. 80–81. Case xxxix., p. 86. Case xl., p. 91. Case xli., p. 93. Case xlii., p. 96–100. Case xlvii., March, 1859, pp. 147, 148, 150, 151, 153, 155. Case xlviii., pp. 160–163. Case l., pp. 165, 166, 168. Cases li., lii., liii., April, 1859.

It should be borne in mind, that we do not for one moment advocate the carbonate of ammonia, as a substitute for sulphate of quinia. The carbonate of ammonia does not cure the disease. The carbonate of ammonia, merely arouses the system, prevents a distressing and fatal accident and prolongs life until the sulphate of quinia can act. Administer then the sulphate of quinia in full and vigorous doses, in conjunction with the carbonate of ammonia.

With the exception of the heart clots, we do not discover any pathological changes of the organs, which of themselves, would account for either the symptoms or death of the patient. As far as an examination with the naked eye extended, we did not find in the brain, any structural alterations, sufficient to account for the symptoms of delirium and coma. We should not, however, in the present state of chemical and physiological and pathological science, decide dogmatically a question of such importance; for we are wholly ignorant of the chemical, physiological and pathological relations of the malarial poison to the nervous elements. Notwithstanding that we have no investigations bearing upon these questions—notwithstanding that I was anxious to enter upon this untrodden field; I was compelled on account of the difficulty of the investigation, and on account of the complete occupation of time, and entire employment and exhaustion of health and strength, in the researches, imperfect as they are, now recorded; and on account of the imperfections of the methods of physico-chemical, physico-physiological, chemico-physiological, physico-pathological, and chemico-pathological research—to abandon, for the present at least, this most important investigation.

It is evident that a thorough knowledge of the nature and treatment of malarial fever, demands amongst many other things, a thorough knowledge, not only of the appearance and chemical constitution of the structures of the cerebro-spinal and sympathetic nervous systems, but also a thorough knowledge of the physical, chemical, and pathological alterations of these structures when acted on by morbid agents. Whatever was the alteration or alterations of the nervous elements in this case—it is evident that they could not be reached by the most energetic and vigorous treatment. Nothing appeared to arouse the action of the brain, notwithstanding that there was no congestion and no inflammation of this organ. We are unable to determine what effect the previous habits of the patient had, upon the course of the disease.

3. We do not think that the condition of the spleen was sufficient to cause death*—because we have recorded in previous

* Case xxx., October, 1858, pp. 667–671. Case xxxi., pp. 671–675. Case xxxii., November, 1858, pp. 723–727.

numbers of this journal, cases where sudden death occurred from other diseases during convalescence from malarial fever, in which the spleen was much more engorged, and apparently in a worse condition. The same remark applies to the alterations of the liver—they do not appear to have been sufficient to cause death.

4. The stomach and intestinal canal presented no pathological alterations. The slate-colored spot upon the kidney was curious, especially in its bearing upon a similar change in the color of the liver, but it was not sufficient to account for even one of the symptoms.

5. If then, the cause of death was not found in the pathological alterations of the organs and tissues, what destroyed life? In the present state of medical science, we can offer suppositions, but we can give no decided answer. How difficult would it be to prove or disprove, that the malarial poison produced death, by its direct action upon the nervous system, in a manner analogous to the action of some of the violent alkaloid and metallic poisons? We know that some of these poisons will produce almost instantaneous death, without producing a single pathological alteration which can be recognized by the most delicate chemical tests, or by the most rigid microscopical examination. We know that some substances, as chloroform, will produce sudden death in some cases, where there is no assignable cause either in the structures and forces of the patient, or in the pathological alterations produced. This peculiar action is said to be due to the idiosyncrasy of the patient. May not the fatal action of the malarial poison be due in some cases to the idiosyncrasy of the patient? Has any one ever determined upon what an idiosyncrasy depends? How difficult would it be to prove or disprove, that the malarial poison acts antagonistically to the vital principle, which directs the physical forces developed during the unwinding of the spring, wound up by the forces of the sun, so that the form, and individuality and definite constitution of every organ and tissue, is preserved amidst unceasing changes.

CASE LIII.—American seaman, age 25; height 5 feet 9 inches—weight, 150 lbs.; dark complexion, dark brown hair, brown eyes.

October 19th, 8 o'clock P.M., 1857. This patient entered the hospital three hours ago, at 5 o'clock, P. M., in an almost insensible condition. Now he is aroused with great difficulty, and answers incoherently. Extremities cold. Pulse 80, feeble. Head and trunk cooler than normal. Tongue, by the gas-light, appears clean, soft, and normal in color.

R. Cut-cups to each temple and back of neck.

℞. Mustards to extremities, and over epigastric region.

℞. Sulphate of quinia, grs. v.; camphor, grs. ij. Mix, and administer every three hours, until fifty grains of the sulphate of quinia have been taken.

℞. Spirit of Mindererus, brandy, and infusion of snake-root, f ʒss. of each, alternately, every half hour.

October 20th, 9 o'clock A. M. Lies in a profound coma. This came on a short time after the first observation yesterday evening. The cut-cups aroused him partially for a few moments, but he soon relapsed. Mustards have been applied to the extremities and epigastric region, three times during the night—they failed to rouse the brain—they excited the capillary circulation and induced an elevation of temperature, but did not restore reason. The stimulants also failed to arouse the intellect. Whenever the mustards were removed, and the stimulants withheld, his surface became cool, and the pulse diminished in volume. It is evident then, that the mustards and stimulants excite the general and capillary circulation, and induce an elevation of temperature, but they do not arrest the disease. During the night, has passed his urine and feces in bed.

Pulse 140, full. The sounds of the heart are not distinct, they cannot be distinguished, but sound to the ear like one sound. The beating of the heart sounds stronger, even than in health. The sounds of the heart correspond in frequency to the beat of the pulse, 140 to the minute. Respiration 40, spasmodic, Temperature of Atmosphere, 70°F.; temp. of hand 104°; temp. in axilla, 104°·5. Great tenderness of epigastrium—whilst neither shaking nor loud talking will arouse him, pressure upon the epigastrium, causes him to emit a short cry. The epigastrium and region of the liver, feels to the hand, warmer than the head or any other part of the body. Complexion very sallow. I administered grs. xxx. of sulphate of quinia, in f ʒij. of brandy. It was with great difficulty that the spoon was forced between his clenched teeth. The dose had not been swallowed more than a few moments, before it was ejected violently, apparently without any effort or consciousness on the part of the patient. This dose was again repeated, and his trunk and extremities covered with mustards, and bottles of hot water applied to the feet, without producing the slightest effect. *This patient died one hour and a half after these observations.*

(16). AUTOPSY TWENTY-FOUR HOURS AFTER DEATH.

Body not emaciated—apparently in full flesh—has the marks of a large ulcer over the superior portion of the sternum. Skin of the dependent parts of the body of a purplish hue. The discoloration of the skin commences about the middle of the body, and gradually increases downwards, until the most dependent portions are of a deep purple color.

HEAD.—When the skull-cap was removed, much blood flowed out. Arachnoid membrane opalescent, in a few spots. Blood-vessels of pia-mater, filled with blood. Bloody serum was effused between the archnoid and pia-mater. Blood-vessels at the base of the brain and surrounding the medulla oblongata, and superior portion of the spinal cord, congested with blood. Blood was effused upon the base of the brain. This blood was fluid, and contained no coagula. The substance of the brain was normal in consistence and appearance.

CHEST.—*Heart* normal—right auricle and ventricle contained a small clot; left heart, empty.

Lungs, normal—dependent portions congested with blood—blood-vessels of superior portions almost entirely free of blood.

ABDOMEN.—*Liver*. A large portion of the surface of the liver presented the healthy spanish-brown color, and when cut, the substance presented the usual healthy color. Other portions however, presented a mottled appearance of spanish-brown and dark purple, and the blood-vessels of these parts appeared to be engorged with blood. The right lobe of the liver had upon its under surface, a spot about two inches in diameter, of a dark slate (malarial) color. When an incision was made through this portion of the liver, it presented for the depth of about $\frac{1}{4}$ th of an inch, the true bronzed color. Numerous incisions were made into the liver, in all directions, so as to expose its substance fully to view; portions were found, approaching in color the bronze hue of the malarial fever liver; the great mass of the liver, however, resembled more nearly that of a healthy liver engorged with blood. Portions from different parts of the liver were examined under the microscope. The liver cells, from the slate colored and bronzed portions, did not differ in appearance under the microscope, from those of the normal colored, or from those of the mottled portions. The colored corpuscles appeared to be more altered in form in the bronzed portions than in the normal colored portions. The alterations, however, even in the bronzed portions, were small and by no means universal, but confined comparatively to a few, and after all, the difference may have been imaginary. The determination of comparative alterations of this kind, is not so easy, as at first sight appears. Did not discover any of those dark granules in the bronze portion, which have been said to impart the peculiar color of the liver.* From the cut surface of the liver, much black blood issued, which assumed, upon exposure to the atmosphere, the arterial hue. The liver cells did not appear to be altered in any manner.

Gall bladder, filled with bile. *Specific gravity of bile*, 1042.5. Viewed in mass, the bile was of a brownish black color, with greenish reflexions, and resembled, upon a general view, a satu-

* A. Clark, M. D. Bãrtlett, on the Fevers of the United States, p. 370. This subject will be discussed more fully hereafter.

rated tincture of iodine. It resembled, and poured like molasses, being thick and ropy. Upon close inspection, the bile was found to contain numerous flakes, of a green color, which under the microscope were found to consist of the conglomerated cells of the mucous membrane of the gall-bladder. When spread out in thin layers, the bile presented a gamboge yellow color.

Pancreas, normal.

Spleen, slate colored, softened and enlarged—not as much softened and altered, however, as in cases of malarial fever of longer standing. The mud of the spleen was of a dark purplish hue, and appeared to be in transition, to the color and state of the mud of the spleens, of malarial fever of longer duration. After exposure for a few hours, to the oxygen of the atmosphere, a large portion of the mud of the spleen assumed a color, approaching the arterial hue; much brighter than the mud of the spleens, upon which malarial fever had exerted its full effects, and somewhat darker than the bright arterial hue, assumed by the splenic mud of healthy normal spleens. When the splenic mud was spread in thin layers upon a glass slide, the change of color was much more rapid. Under the microscope, the splenic mud appeared to consist almost entirely of colored corpuscles, many of which appeared swollen and altered in appearance. After careful examination, I was unable to find those conglomerations of black granules, resembling the black sediment of black vomit, which were discovered in other malarial spleens*.

Kidneys, normal. Bladder, contracted, contained no urine. Scrotum, red, and apparently scalded. This was due, most probably, to the acrid urine.

Alimentary and Intestinal Canal.—The mucous membrane of the stomach, presented two well defined portions—the mucous membrane of the lesser curvature of the stomach, was pale and normal in appearance—the mucous membrane of the greater curvature and pyloric extremity, and of the pylorus, was of a purplish color, and ecchymosed, in crimson spots. The blood-vessels of the greater curvature, and of the pylorus were congested with blood. Mucous membrane of the superior portion of the jejunum, congested with blood—*valvulæ conniventes*, especially at the edges, ecchymosed in spots of a purple and scarlet color. Mucous membrane of the lower portion of the ileum, greatly congested with blood. Peyer's glands somewhat enlarged, more distinct and elevated than usual, but pale and not congested and inflamed, as in typhoid fever. Solitary glands enlarged and distinct. Mucous membrane of colon, greatly congested with blood.

* Case xxiv., Autopsy 2, p. 663, October, 1858. Case xxxv., November, 1858, Autopsy 7, p. 738. Case xxxviii., Autopsy 10, February, 1859, p. 79. Case xxxix., Autopsy 11, p. 85.

CONCLUSIONS.

1. The slight alteration of the color of the liver—the change of the blood of the liver, to the arterial hue upon exposure to the atmosphere—the change of the splenic mud to the arterial hue—all prove that this patient had died very soon after the commencement of the malarial fever. As we have seen, the patient was unable to answer any inquiries with reference to the history of his case. So convinced was I, that this was a case of only one or two days standing, that I sought out the captain of the vessel to which this patient belonged, and made minute inquiries. The captain stated that this man was the cook on the vessel. One month ago, whilst the vessel was lying in the Santee river of South Carolina, this patient was taken with a fit; this was relieved in a few hours, and was not followed by fever, and the patient appeared to suffer no ill effects, and resumed his duties. Two weeks ago, the captain brought his vessel to Savannah. This patient has been sleeping on board the ship, at night, up to the time of his entrance into the hospital. He was well, active, and attentive to his duties, up to 5 o'clock P. M., October 18th, when he was suddenly seized with vomiting, cold extremities, complete prostration and delirium. He had cooked dinner this day, and was attending to his duties, at the time of this sudden attack. He had, however, “a singular look out of his eyes,” which attracted the attention of the captain, and led him to inquire, if he was well; the patient answered yes, and complained of nothing. Whilst sick on board the ship, he complained of no pain, and before the complete loss of reason, said, that he felt well. The next day, the 19th inst, he was sent to the hospital at 5 o'clock P. M. I saw him for the first time at 8 o'clock P. M. He died at 12 o'clock M., the next day. *This patient, then, died after forty-three hours sickness.*

2. The general and capillary circulation was easily aroused by stimulants; the temperature of the body, under the action of stimulants, was elevated above the normal standard, and there was a correlation between the temperature of the trunk and extremities; and the chemical changes appeared to be amply sufficient for the development of the muscular and nervous forces; and the liver and spleen had undergone, comparatively, but slight alterations. The most prominent apparent cause of death was the effusion of blood upon the base of the brain. The fit which occurred one month ago, points to a previous derangement of the cerebro-spinal system. Was the effusion of blood upon the brain the result of the action of the malarial poison alone, or the result of the action of the malarial poison upon the delicate structures of the brain already altered by previous disease? It is impossible to decide these questions positively; but all our observations upon malarial fever, would lead us to

adopt the latter supposition. We regard the action of the malarial poison as depressing, and not inflammatory. Cerebral disturbances in malarial fever, appear to be due, first, to the direct action of the malarial poison and of the altered blood upon the nervous structures—and secondly, to the stagnation and accumulation of blood in the capillaries and blood-vessels of the brain, due to the diminished action of the heart, arrest and perversion of chemical change in the blood of the capillaries, and loss of power in the capillaries themselves. If by previous disease, arising of itself, or induced by the intemperate use of ardent spirits, the capillaries and blood-vessels of the brain and its membranes, lose their tonicity, elasticity and coherency, the simple stagnation and accumulation of blood may be attended by a rupture of the altered vessels, without any inflammatory action. A strong confirmation of these views, is the fact, that the vigorous administration of the most active stimulants, conjoined with sulphate of quinia, is the most efficient mode of preventing, arresting and relieving, the coma and delirium of malarial fever. If the action of the poison was inflammatory, this would not be the case. The preceding case, shows that we may have symptoms of inflammation of the brain, in malarial fever, without a single pathological alteration after death, cognizable to the senses.

3. A comparison of the autopsy of this case with that of other cases, shows that in the first stages of malarial fever, the liver is first engorged with blood, and the slate and bronze color is not at first universal, but confined to definite portions. It is an interesting fact, that in the present case, the solitary glands were found enlarged, even at this early stage of the disease. The mucous membrane of the stomach and intestines presented marks of congestion, if not of inflammation. This condition of the mucous membrane is by no means characteristic of malarial fever, even when there is great tenderness upon pressure of the epigastrium. Tenderness here may be due rather to the state of the spleen and liver. The slate-colored spots upon the kidneys in cases xxxviii., Autopsy 10 and lii., Autopsy 15, are interesting in their bearing upon the peculiar color of the liver. The observation which we made upon previous cases is also true with regard to this, that the slate and bronze color of the liver is not due to the formation and distribution through the liver of peculiar dark colored granules.

4. Although the stimulants and sulphate of quinia did not cure the disease, still they aroused the capillary and general circulation and induced the chemical changes.

This case closes the report of cases, and in the succeeding numbers of this journal, we hope to generalize all the facts and phenomena thus far presented.

(To be continued.)

ARTICLE X.

A Case of Lithotomy. By D. W. HAMMOND, M.D., of Macon, Ga.

I was called on the 15th November, 1858, to visit a little boy, 2½ years of age, son of Mr. Blunt, in the immediate vicinity of Oglethorpe. The patient, from his earliest infancy up to that time, had suffered more or less from painful and difficult micturition. As he grew older, the symptoms became more intense and distressing. Dr. Oliver, my esteemed friend, under whose care he had been placed, diagnosed the case to be Calculus of the Bladder, which the introduction of the sound readily and unmistakably revealed.

On consultation with the medical friends present, the operation was at once decided upon. After securing the little sufferer in proper position, and other requisite appliances suitably arranged, the operation was completed in a few minutes by the lateral section—using Dr. Physick's gorget.

The calculus was readily engaged in a small lithotomy spoon or scoop, and extracted. Its shape, an oblate spheroid—the surface tuberculated with minute, sharp, and semi-transparent crystals, and weighing 9j.

Eleven days after the operation, I received the following letter from Dr. Oliver, under whose management he was confided :

“OGLETHORPE, Nov. 26th, 1858.

DR. HAMMOND:

Dear Sir—The child of Mr. Blunt is getting on well—has had no fever for five or six days. The urine is now passing free, per vias naturales, though not wholly through the urethra as yet, some still finding its way through the opening in the perineum. The wound is closing gradually. The little fellow is quite cheerful this morning, and has every prospect of a speedy recovery,* &c.

Yours truly,

T. P. OLIVER.”

The patient was not placed under chloroform, in consequence of his age, and other circumstances contra-indicating its administration. The child being so young, rather deterred me from the operation, and it would have been postponed but for the

* In a note, dated January 21st, 1859, Dr. Hammond informs us that the patient has entirely recovered—now running all about the house and yard.

increasing intensity of his sufferings for several months prior to the time I visited him. He was having "fits of the stone," frequently, as often as twice a week, causing violent straining and persistent tenesmus, the consequence of which was a troublesome diarrhoea, complicated with prolapsus ani, and ulceration of the neck of the bladder. These enervating consecutives, together with an exhausting catarrhus vesicæ, impelled me, without further delay, to resort to the "*ultimum et unicum remedium.*" I had been consulted about twelve months anterior to this time in regard to the propriety of performing the operation, and advised it to be deferred as long as possible, as I feared one so young might doubtless succumb to traumatic convulsions.—And I would here remark that, age has much to do with subjects afflicted with this terrible malady, especially where a resort is had to the knife.

From long practice and experience in such cases, I am of the opinion that the most favorable age for cutting for stone, is from *five to ten years*. Sir Astley Cooper, in speaking on this branch of the subject, says, "The age at which there is least danger is from *three to twenty*, for death is then a very rare occurrence." I never knew a case terminate fatally when operated upon between the ages of five and ten years. Including the little boy now under consideration with nine others, varying in age from five to ten years, upon whom I have operated, they all, without a single exception, have had speedy and satisfactory recoveries—the time occupied ranging usually from ten to fifteen days. Those farther advanced in life—say, from twenty-five to sixty—have, as a general rule, recovered more slowly and less perfectly. From these facts, the conclusion is irresistible, that those who are suffering from this ailment should be urged by every possible argument to submit to the only remedy as early as possible. Perhaps one less than two years of age would be too young, although many have been successfully operated upon, much younger. South says, "The earliest age at which I have known the operation for Stone performed, with success, was twelve months: in two instances, successfully, by Keate, at St. George's Hospital." John Hunter operated on a child eighteen months old, but the *result is not stated*. Civiale has collated many instances of infants affected with Stone—one of which was cut at ten weeks: *result not stated*.

On the other hand, although age, *cæteris paribus*, should not be a bar to the operation, yet the prognosis in such cases, as a general rule, is unfavorable for recovery. Mr. Cline, senior, operated successfully upon a patient eighty-two; Attenburrow, at a still more advanced age; and Astley Cooper upon one seventy-six, who lived ten years after. But these may be considered extreme cases, and exceptions to the rule laid down.

I had intended, before closing this article, to give my views in relation to the comparative merits of the gorget, and Lithotome Caché of Dupuytren; but to do the subject justice, would extend the essay to an unnecessary length. I must be permitted, however, to remark, that my decided preference is in favor of the gorget, as being the best and safest instrument that has yet been invented for dividing the prostate gland and neck of the bladder.

ARTICLE XI.

The Horse-Shoe Pessary in Retroversion of the Uterus of long standing. By WM. B. JONES, M. D., of Birdsville, Burke Co., Georgia.

MESSRS. EDITORS:

The history of the following case is given to the readers of your valuable Journal, for the interest it possesses in being a case of exceeding rare occurrence, and of its long existence, without producing that fatal termination we might anticipate from so serious an accident.

We can readily conceive how, under favorable circumstances, an impregnated uterus can become "topsy-turvy"; but the retroversion of an unimpregnated uterus in a female who had not borne children, is an accident of so improbable a nature, that some authors have doubted whether it could occur at all, unless from disease of the organ itself, or pressure from some neighboring diseased structure, or from congenital deformity. This case affords also another of the many melancholy instances (particularly) of female maladies, which, simple in themselves, when first happening, and easily removed when detected and treated by an intelligent medical practitioner; but, falling into

the hands of the ignorant pretenders of our art, entail suffering indescribable, and a life-long martyrdom upon the unfortunate patient.

On the 19th of June, I was called to see Mrs. H., in consultation with her attending physician. I was informed that she had been suffering about thirteen years with some uterine disorder, the exact nature of which was supposed not to have been ascertained—that now she was nearly bed-ridden, after withstanding the treatment of innumerable Doctors, and swallowing all the stuffs and nauseous compounds that ignorance and superstition could invent and impose, and the hopeful credulity of a suffering woman could endure—passing gradually from bad to worse, hope had well nigh fled, and life, otherwise desirable, had become almost an intolerable burden.

With her attending physician, I visited the patient, determined (if a careful examination would reveal the true nature of the malady) to have the satisfaction of discovering to herself and friends, of what she was suffering, if I could not extend relief, or promise a cure.

The Statement of the Patient.—That she had been suffering, more or less, for thirteen years; that she grew up to womanhood with scarcely a pain or ache; that her catamenia appeared at the usual period of life, and had regularly and healthily reappeared, up to the time she dates the commencement of her trouble. She married at nineteen years of age, and, with her husband, commenced soon after to keep public house. Priding herself upon her ladyship's strength and activity, she did much of the active duties of the house. One day, whilst her catamenia was upon her, in making up and replacing beds, she attempted to lift a heavy bedstead from its position. The effort caused sudden pain in the back, which, continuing, compelled her to take to her bed for several days. From that time, until now, she has never recovered from a continual distressing sensation of weight and pressure about the lower pelvic region, accompanied often with a difficulty at defecation, and a habitual costiveness. All these symptoms, much aggravated now during her menstrual periods—she is compelled to take her bed, and scarcely recovers from the suffering of one period, before another prostrates her.

Upon a vaginal examination, the finger, instead of being directed backwards and upwards, passed upwards and forwards—where, high up, was distinctly recognized the os tincæ looking towards the neck of the bladder, though not pressing upon it. Behind the posterior wall of the vagina, and in the hollow of the sacrum, could be plainly felt a round, firm tumor. A careful recto-vaginal exploration, determined that this tumor was the fundus uteri, and that there was continuity between it and the cervix. I will remark here that the attending physician, from the strangely altered relation of the parts, had, in the confusion of his mind, mistaken a fold of the posterior mucous membrane for the os tincæ, and had determined a congenital deformity and a double uterus.

The case was one of retroverted uterus. The history furnished satisfactory evidence of the circumstances, and the time the difficulty commenced, and the abuse of cathartic medicine, and other causes, had completed the retroversion after the lapse of so long a time. The treatment could only be palliative. To restore the organ to its proper position, and maintain it there, I could not expect. An effort to dislodge it from its position, proved that adhesions had doubtless taken place with the surrounding structure, and any serious attempt to lift it from its bed, might inflict still more serious injury upon the patient. After the introduction of two or three styles of pessaries, and finding slight relief afforded, I adopted the Horse-shoe pessary, as described in a late number of the American Journal of Med. Sciences. Having at my service an excellent silversmith, I succeeded in obtaining one made, that, being introduced, put upon stretch the posterior vaginal wall—and thereby supporting the organ from farther descent, gave a sensation of comfort and support to the patient (as she remarked) whilst retaining the upright position. The patient herself learning to remove and replace the pessary. With a strict regimen and diet, her general health was very much improved, and she has been enabled to assume again her household duties, to visit her friends, and participate again in some of the pleasures of life.

Lecture on Asthma. Delivered at Hotel Dieu, by Prof. TROUSSEAU. Translated from the Gazette des Hopitaux of September 2nd, 1858, (for the Boston Med. and Surg Journal).

LECTURE II.—SOME OF THE CAUSES OF ASTHMA.

I said in my last lecture, that among the causes of asthma, are some which are particularly worthy of notice, on account of their importance; such are the circumstances of residence, climate and temperature. I will give you some examples in illustration.

Five years ago, a young man came from St. Omer to consult me. Subject to very frequent attacks of asthma, he availed himself of an interval of respite to take the journey. After his arrival in Paris, he had some return of his complaint, but less violent than before, and after two or three days he was cured. His recovery seemed to me astonishingly rapid, and I attributed it to the influence of climate, anticipating that sooner or later the event would confirm my opinion. The patient remained here three weeks; during this time he had but a single attack. Finally, he came to take leave of me; he departed for Versailles, and this journey was to be the proof that I was waiting for. On the first night that he passed in that city, at the very gates of Paris, so to speak, where he had been so well, he had a most terrible attack; in the morning, he did not find himself in his habitual state of health, and in the evening a new attack came on as before.

The following day, he resumed his journey to St. Omer, passing by the way near the capital.

What had led me to anticipate that this journey to Versailles would furnish the evidence I expected, was what the patient had told me. His attacks, he said, had begun in his native town at the age of 19; two years after, his father had taken him to London on business, and from that moment, having borne the passage over which he greatly dreaded, without the slightest attack, although living in the midst of the fogs of the Thames, which are blamed, perhaps with some degree of exaggeration, he never experienced the slightest return of his complaint—and notwithstanding that, during the two years of his life in England, he led the life of a young man, a life of divided work and pleasure, exposing himself to all the causes of catarrh. During this time, although he did not escape colds, he had not a single attack of asthma, and his colds had left him much more promptly than they had in France. After his father's death, the young man returned to St. Omer; hardly re-established in that town, he had a renewal of his old attacks; and at last, after two years of torment from this complaint, he decided to come to see me. Having prescribed a course of active treatment for him, I sent him back to his own town, and some months afterward he sent me

word that he remained in the same condition. I tried to induce him to return here. He replied that it was impossible for him to undertake the journey, his condition was so serious; I nevertheless insisted upon the necessity of his quitting St. Omer. The patient was transported, rather than came, by the railroad, and from the moment of his arrival at the Hotel, where he alighted in Paris, his oppression became less; a few days after, his relief was complete. I had then no other advice to give, but to forbid a residence at St. Omer, and I persuaded the patient to place himself at the head of his house in London.

An old advocate, a friend of mine from childhood, passed, every year, three or four months on his estate of Calvados. Perfectly well at Paris, he scarcely arrived at his place in the country, when he had an attack of nocturnal asthma, coming on, usually, at 10 or 11, P. M. His dyspnoea was such, that he was obliged to pass his nights at the window, notwithstanding the cold of the autumn nights. The following morning he was relieved, and was able to resume the course of his usual occupations.

A third instance. I have among my patients two brothers, twins, both very rich, both keepers of famous gambling houses, and so extraordinarily alike that it is impossible for me to distinguish one from the other, except on comparing them side by side. This resemblance was not limited to physical appearance merely, for they had, allow me to say, a pathological resemblance even more remarkable. For instance, one of them, whom I saw at Neothermes, sick with a rheumatic ophthalmia, said to me, "at this moment, my brother ought to have an ophthalmia like mine." And as I expressed my surprise, he showed me, two days after, a letter which he had received from his brother, then at Vienna, which said, in effect, "I have my ophthalmia, you ought to have yours". However singular this may appear, the fact is nevertheless true; I witnessed it, and I have seen other analogous cases in my practice. To resume: these twins were both asthmatic, and asthmatic to a fearful degree. Born in Marseilles, they had never been able to live there, where their interests often called them, without experiencing an attack; they never had one in Paris. Better still, it was sufficient for them to go to Toulon to be cured of their Marseilles attacks. Travelling often, and necessarily in all sorts of places, they had remarked that certain localities were deadly to them, while in others they were quite exempt from annoyance.

There is, then, a rule for asthmatics, and it is important that I should mention it, for I shall make a great account of it when I come to speak of the nature of this disease.

A young physician, Dr. E. Vidal, has mentioned to me a fact which he had himself observed, and which properly comes

in here. He knew a sea-captain, for a long time affected with this complaint—for many years in fact. Every time he went to Peru to take in a cargo of guano, his attacks ceased from the moment of his arrival at the Chincha Islands where he took in his guano; and his disease, of which he did not then experience the least symptom, from which he seemed radically delivered during the time of his voyage from America to France, returned as soon as he went on shore and breathed an atmosphere not charged with guano. This fact is explained to a certain extent, better by another influence. You know what guano is, and those who have seen it know also how penetrating the odor is which it gives off, an odor excessively ammonical. I shall tell you, in speaking of treatment, the part which ammonia sometimes plays in calming attacks of asthma.

The influences of temperature are not less singular in the production of this complaint.

The sufferer from catarrh dreads the cold, which easily influences him, and becomes the cause of new symptoms; he keeps himself habitually well clothed; in winter he seldom goes out, but keeps in the chimney corner. The asthmatic, on the contrary, seeks for plenty of fresh air, he has a horror of small apartments, of low ceilings, which seem to weigh upon his chest; he dreads woollen draperies. However rich he may be, you will find him usually occupying a chamber either without curtains, or supplied with very light ones; his bed has none; thick draperies and curtains overwhelm, oppress, suffocate him; in the very heart of winter, open windows are as necessary to him as in summer; in a word, he needs a great body of air. That this want is real, that it may be the effect of the imagination, a sort of mania, you will often find, as I shall show you.

Among the peculiar eccentricities which show us also the essentially nervous nature of asthma, there is one which has not escaped the attention of any observer, namely, that in the space of twenty-four hours the asthmatic has his attacks at certain hours, and not at others.

My poor mother whom I had the misfortune to lose twelve years since, and from whom I inherit the asthma with which I am affected, my poor mother had her attacks at eight o'clock in the morning. The rest of the day she came and went with an activity which never failed her, and her nights were good.

I know the master tailor of a regiment of carbiniers, then in garrison at Saumur, who was regularly seized at three o'clock in the afternoon. The attacks were so regular that, on account of this perfect uniformity of the hour at which they came on, I believed them due to a marsh miasm, a kind of masked intermittent. I gave him however the sulphate of quinine in vain.

Although there are thus some examples of diurnal asthma,

most commonly it is at night that the attacks come on. Generally, it is from ten to twelve o'clock at night. And the influence of the bed, of the decubitus in the horizontal position, is here of slight importance; whether the individual is a-bed or up, the attacks return at the same hour of the night; in some they occur a little later. Thus, in my own case, they come on about three o'clock in the morning. Invariably, I am awakened at that hour, and hear the hammer of my clock strike its three blows. At the same time these exceptions do not weaken the general rule.

I have told you that asthmatics seek for nothing so eagerly as fresh air; and, singular fact! nervous asthma is oftener observed in summer than in winter. The attacks occur much more often in the months included between May and November than from November to May. Another thing worthy of remark—asthma is a more common complaint in equatorial regions than in temperate or frigid zones, and yet every one knows how rare thoracic affections are in warm countries, where diseases of the liver and digestive organs predominate over all others. In these countries, catarrhal affections are observed without doubt, but as exceptions; at least so English physicians who have lived in India have taught us, where, Simms says, asthmatics are very numerous.

Thus asthma is a disease of warm countries, it is a summer disease, and when those who are affected with it take cold during the cold season, they recover much more rapidly from their catarrhs at that time than they do in summer, other things being equal.

S. L. A.

Ligature of the Extremities in Intermittent Fever. By Drs. J. DE BRAUW and H. J. BRÆRS.

ACCORDING to Drs. De Brauw and Brærs, the ligature of the extremities is a measure which has been already employed by ancient physicians to aid in the treatment of intermittent fever, but has unjustly nearly fallen into oblivion. Already Pinus (Hist. Nat. xxviii., 6) knew this antiperiodic, as Pittschaff (Hufeland's Journ., li., 3, pp. 47, 48) states, and in Van Swieten's *Commentaries to Boerhaave's Aphorisms*, the "levis brevisque compressio venarum in artubus," is strongly recommended as a means to relieve the burning heat of fever. Dr. V. Hildenbrand, however, declares the remedy, in his *Institutiones Practico-Medicæ*, to be unreliable, and in many respects unsafe, and recommends caution in the use of it. Jos. Frank (Prax. Med. Univ. Præcepta) speaks of it in a very superficial manner, like many other, particularly more recent authors. One of the most enthusiastic commenders of this method is George Kellie, (Duncan's

Medical Commentaries, vol. xix.,) who, during the siege of Willemstad by the French army, in 1793, cured many cases of intermittent fever (which had resisted the use of quinine) completely, by compression of the extremities. Upon his recommendation several physicians in England—for instance, Veitch and Wallich, (*Mediz. Nationalzeitung*, July, 1798,) and in the Netherlands, (*Agemene Vaderl. Lettervefningen*, 1808, 5,)—tried his method with signal success. Of the more recent communications on this subject, that of Prof. Chladni (*Hufeland's Journal*, xlii., p. 133,) is worth particular attention. This celebrated savant being attacked in 1813 by an obstinate intermittent fever, used the remedy with much advantage. He describes it as quite innocuous, and explains its curative influence by the supposition, that by the ligature of the extremities the return of blood to the heart, and to the centres in general, is hindered or partially suspended, and that the full development of one of the principal symptoms, the chill, being thus interfered with, an interruption and disturbance of the whole type of fever takes place.

This method belongs moreover to one of the oldest popular remedies used in Russia, England, and France. In *Cunstatt's Jahresbericht*, (Jaborg., 1848, p. 113,) the cure of a quartan by application of Junod's boot is mentioned, a fact which seems to be intimately connected with the subject in question. According to Jolly, (*Dict. de Méd. et de Chir.*, tome xi., part i., p. 363,) who gives a detailed account of the *ligatures circulaires des membres*, the ligature should be applied to the four extremities at the same time, but in such a manner that only the circulation in the superficial vessels is suspended. Martinet, Robinau, Récamier, and Husson, kept up the compression for not longer than twenty-five to fifty minutes, and commenced with it in the cold stage.

Jolly recommends taking off the ligatures one by one, at intervals of several minutes, as by the simultaneous removal of the same too much blood would be at once introduced into the circulation, which might be attended with evil consequences.

The most complete information on the subject of his investigation the author found in a dissertation of R. v. Bærle: *De valde multiplici febrium intermittantium medicatione speciatim de membrorum majorum circumstrictione tantaminibus in nosocomio academico explorata*, Utrecht, 1809. In this treatise the ligature of the extremities is thoroughly illustrated by the report of seven cases, and highly recommended. V. Bærle commenced the treatment with the administration of a gentle purgative; the patients were kept in bed, and subjected to a rigid diet during the paroxysm; shortly before the commencement of the cold stage, the thighs and upper arms were encircled by ligatures exercising a moderate pressure, which were removed in from six

to fifteen minutes, or later, according to the effect they produced; after Wallich's example he forbade warm drinks during the cold stage, but recommended cold drinks in the hot stage. From observation of this kind the author draws the following conclusions:—The ligature of the extremities is a safe and powerful means of assistance in the treatment of intermittent fever; it is not only an adjuvant to other antiperiodics, but also a febrifuge by itself. It cures the febris intermittens simplex and duplex, as well as the quotidiana. In regard to the quartana no experience has been made. The ligatures must be allowed to remain until the hot stage begins; a longer application does not lessen their effect. The method seems to owe its curative property to the disturbance of the usual course of the fever, (Chladni.) Sometimes the paroxysm is transferred under this treatment from the third day to the second, but generally so that the tertian type is not interrupted, or that a febris duplex is developed. The compression of the extremities is always followed by some increase of the heat and perspiration, the signs of an energetic reaction. After repeated use of this method the fever gradually subsides. Contra-indications to it never existed, but may be easily inferred from an examination of the *modus operandi* of the remedy.

Dr. De Brauw generally applied compression to two extremities only, but considers the ligature of all four far more efficacious in obstinate cases, and recommends the method as being capable in some cases to substitute the use of quinine.

In cases of relapse of intermittent fever, in which the patients complain of that characteristic pain in the lumbar region (fifth lumbar vertebra,) against which cups are used without effect, Broers recommends the application of the galvanic current to the mentioned spot as a highly serviceable, though occasionally inefficient means. After the second or third application of this remedy the cachectic appearance, as well as the depressed feelings of the patients, underwent a favorable change. Relapses of the fever, consequent upon a return of the patient into the malarious district, yielded quickly to this mode of treatment, even when quinine was administered without success.—[*Nederland. Tijdschr.*, 1858, and *Medizinische Neuigkeiten*, 1858, and *N. Amer. Medico-Chir. Review*.

On the Action of Certain Vegetable Diuretics. By WILLIAM A. HAMMOND, M.D., Assistant Surgeon, U. S. Army.

THE ensuing investigations consist mainly of repetitions of those performed some years since by Krahmer, and subsequently by Bird. They have reference to the appreciation of the influence of squill, juniper, digitalis, and colchicum, over the quantity of the urine, its specific gravity and the amount of its solid organ-

ic and inorganic constituents. They were all performed upon healthy adult males.

The quantity of urine was determined in cubic centimetres, and the weight of solids in grammes.

The method employed for the determination of the whole amount of solid matter was as follows:—

Ten cubic centimetres of the urine were evaporated to as complete dryness as possible *in vacuo* over sulphuric acid, and the residue accurately weighed. By simple proportion the amount of solids in the whole quantity of urine was easily ascertained.

Although it is impossible to get rid of all the water by this process, the quantity remaining is extremely small, and the results obtained are far more accurate than those yielded by evaporating to dryness in the water-bath as generally practised. No matter how carefully this latter method is conducted, the loss of urea, by decomposition, is always an important item, and involves far more serious errors than the imperfect desiccation by the former process.

For the determination of the amounts of organic and inorganic constituents separately, the solid residue obtained as above was mixed with ten or fifteen drops of moderately strong nitric acid, and gently heated until the mass was well dried. The heat was then gradually raised till all the carbon was consumed, and the mass in consequence became white. It was then cooled *in vacuo* over sulphuric acid and weighed. The inorganic matter was thus determined and the loss showed the proportion of organic substance.

Digitalis.—The subject of the experiments with this substance, was about twenty-five years of age and in good health. For the three days immediately preceding the commencement of the investigations, the average quantity of urine daily excreted by him was 1474.5 cubic centimetres, the specific gravity was 1024.30, and the average total amount of solid matter was 75.31 grammes, of which 30.17 grammes were inorganic, and 45.14 organic constituents. The digitalis was given in the form of the officinal tincture in doses of 20 minims three times in 24 hours, and was continued for three consecutive days. During this period the manner of living (food, drink, exercise, etc.) was as nearly as possible the same as during the preliminary investigations.

1st day. The urine passed on this day was of a pale straw-colour and feeble acid reaction; quantity 1950 cubic centimetres; specific gravity 1013.25; total solids 69.98 grammes, of which amount 31.27 were inorganic and 38.71 organic matter. The action of the digitalis was not manifested otherwise than by its effect upon the urine.

2nd day. The urine passed on this day was of similar physic-

al character to that above mentioned. The quantity was 1873.6 centimetres, the specific gravity 1014.32, and the total solids 63.74 grammes. The inorganic solids amounted to 30.15 grammes, and the organic to 33.49.

The pulse on this day was somewhat slower and fuller than on the previous day.

3rd day. The quantity of urine evacuated on this day was 1624.9 cubic centimetres, and of specific gravity 1020.04. The total amount of solid matter was 67.29 grammes, of which 33.19 were inorganic and 34.10 organic.

The colour, reaction, and odour of the urine were similar to those of the two previous days.

The characteristic effects of the digitalis upon the action of the heart were well marked during this day.

The effect of the digitalis in increasing the amount of urine is seen to have been greatest on the first day. On the second day it had fallen somewhat, and on the third was but 150 cubic centimetres greater than when no digitalis was taken. The solids, it is seen, were less than the normal standard from the commencement, were still further reduced on the second day, and on the third were slightly increased. This diminution is perceived to have been owing to the lessened amount of organic matter excreted. The inorganic substances were somewhat increased in amount over the ordinary proportion.

Juniper.—The experiments with this substance were conducted on a healthy man thirty-five years of age. The average condition of his urine for the three days immediately preceding the investigations was as follows: quantity 1237.5 cubic centimetres, specific gravity 1022.50; total solids 61.23 grammes, of which 23.12 were inorganic, and 38.11 organic matter. It was of ordinary colour and odour, and of strong acid reaction.

Sixteen ounces of the official infusion of the berries of the *Juniperus communis* were taken during the twenty-four hours, and the manner of living kept as nearly as possible to correspond with that of the preliminary experiments.

1st day. For this day the quantity of urine amounted to 1732 cubic centimetres, the specific gravity of which was 1016.38; the total solids were 62.75 grammes; of this amount 25.43 grammes were inorganic, and 37.32 organic constituents.

The urine was of a pale straw-colour and gave off the characteristic odour produced by juniper. The reaction was feebly acid.

2nd day. The quantity of urine passed on this day was 1885.2 cubic centimetres. The specific gravity was 1014.15, and the total solids 58.49 grammes, 22.17 of which were inorganic, and 36.22 organic matter. The physical characteristics were similar to those of the day before. The reaction was barely acid.

3rd day. On this day the quantity of urine was 1672.5 cubic centimetres, with a specific gravity of 1018.41. The total solids amounted to 63.27 grammes, of which 27.50 were inorganic, and 35.73 organic matter. The physical characteristics and reaction were the same as on the previous day.

From these experiments it is seen that whilst the quantity of urine was materially increased by the juniper, the amount of solid matter, as a whole, was but slightly affected, the loss in organic matter being about compensated for by the increase of the inorganic.

Squill.—The experiments with this substance were instituted upon myself, and were conducted upon the same general principles as the foregoing series. The average daily quantity of urine, for the three days preceding the investigations, was 1358 cubic centimetres. The specific gravity was 1023.51, and the total solids 69.35 grammes; of this amount 27.22 were inorganic, and 42.13 organic matter.

I took two grains of the dry bulb of the *Scilla maritima*, three times in the twenty-four hours. The other conditions remaining the same as in the preliminary examination of the urine.

1st day. The quantity of urine passed on this day was 1572 cubic centimetres, of 1020.34 specific gravity. The total solid matter was 6067 grammes, 31.07 of this amount being inorganic, and 29.60 organic constituents. The urine was of feeble acid reaction.

2nd day. Quantity of urine 1493.5 cubic centimetres, specific gravity 1020.90, total solids 58.22 grammes, inorganic matter 30.15, organic 28.07 grammes. The reaction, etc., were the same as on the preceding day.

3rd day. On this day the quantity of urine amounted to 1535 cubic centimetres, and was of 1019.37 specific gravity. The total amount of solid matter was 61.58 grammes, of which 30.58 were inorganic, and 31.00 organic constituents. The reaction, colour, etc., were unchanged.

From the above experiments it is perceived that the action of the squill was similar to that of the digitalis and juniper, i.e., causing an increase in the water of the urine and inorganic solids, but a reduction of the amount of organic matter. The loss of organic matter was considerably greater than with either of the other substances.

Colchicum.—The investigations into the action of this substance were performed upon a healthy man twenty-eight years of age. The urine for the three days immediately preceding the commencement of the experiments, was of the following daily average character; quantity 1230 cubic centimetres, specific gravity 1025.03; total solids 63.12 grammes, inorganic matter 29.83, and organic 33.29. The reaction was very strongly acid.

One and a half drachms of the officinal tincture of the seeds of the *Colchicum autumnale* were given three times in twenty-four hours, and continued for three days. During this period the food, exercise, etc., were as nearly as possible the same as during the preliminary series.

1st day. The quantity of urine passed on this day was 1595.7 cubic centimetres, with a specific gravity of 1024.37. The total solids amounted to 77.29 grammes, the inorganic matter of which was 36.50 grammes, and the organic 20.79 grammes. The reaction was strongly acid.

2nd day. Quantity of urine 1484.1 cubic centimetres, specific gravity 1024.31; total solids 75.22 grammes. The amount of inorganic matter was 35.01 grammes, and of organic 40.21. The reaction was very strongly acid.

3rd day. On this day the quantity of urine amounted to 1620 cubic centimetres, and was of 1022.6 specific gravity. The total amount of solid matter was 79.33 grammes, of which 34.20 were inorganic, and 45.13 organic constituents. Reaction strongly acid.

It is thus perceived that the action of the colchicum, as compared with that of the other substances experimented with, was very remarkable, it being the only one with which there was an increase in the amount of solid matter eliminated, both organic and inorganic.

From the foregoing experiments the following table embracing the averages of each series of investigations is constructed :

	QUANTITY OF URINE.	SPECIFIC GRAVITY.	TOTAL SOLIDS.	INORGANIC SOLIDS.	ORGANIC SOLIDS.
Normal standard.....	1474.5	1024.30	75.31	30.17	45.14
Digitalis.....	1822.8	1015.87	67.00	31.54	35.43
Normal standard.....	1237.5	1022.50	61.23	23.12	38.11
Juniper.	1763.2	1016.28	61.50	25.03	36.42
Normal standard.....	1358.0	1023.51	69.35	27.22	42.13
Squill.....	1533.5	1020.20	60.15	30.60	29.55
Normal standard.....	1280.0	1025.08	63.12	29.83	33.29
Colchicum.....	1556.6	1023.53	77.28	35.23	42.04

From the foregoing investigations, I think it is deducible that neither digitalis, juniper, nor squill, increases the total amount of solid matter eliminated by the kidneys, and that the organic matter is considerably reduced through their influence. Although they do not increase the amount of inorganic matter removed through the urine, yet as it is the organic matter which is generally considered as contaminating the blood in disease, it is evident they exert no effect whatever in depurating this fluid, but on the contrary are positively injurious.

The results obtained, in so far as the experiments with digitalis, squill, or juniper, are concerned, are similar to those obtained by Krahmer, but are materially different as regards the colchicum. For, although Krahmer found that under the influence of this medicine there was an increase in the amount of organic matter excreted, this was so small as to lead to the supposition that it may have been accidental, and besides there was a reduction in the quantity of inorganic substance removed. It is desirable, therefore, that we should have further observations with this article.—[*Proc. Biol. Dep. Acad. Nat. Scs. of Philad.*]

Epilepsy for Thirty-two years in a man aged Forty-four, with discoloration of the Skin from Nitrate of Silver; Operation of Castration. Under the care of Mr. HOLTHOUSE.

AMONG the causes of epilepsy mentioned by various writers, extreme sexual excesses are considered as not the least important. They would appear to have much influence on the frequency of the fits, as is shown in the narrative of the following case, the notes of which were taken by Mr. H. Ponsonby Adair, house-surgeon to the hospital. There are cases on record in which castration has been resorted to as a means of relief. In one reported by Mr. J. P. Frank, the *aura epileptica* began in the testicle, and it is asserted that a permanent cure followed castration.

This operation is much practised at the present day among the Eastern nations, for the sole purpose of depriving their slaves of manhood; and Mr. Curling informs us, in his work on the "Diseases of the Testis," that in Italy it was once frequently performed, on account of its effects on the vocal organs.

Eli B—, aged forty-four, widower, native of the United States, bookseller, was admitted into Luke ward, in the Westminster Hospital, on the 4th of January, under the care of Mr. Holthouse, in order to have the operation of castration performed for the cure of epilepsy.

The patient is one of fourteen children, of whom eleven are living and healthy; his father is alive, aged eighty-four, and his mother died at eighty. There is no insanity in his family, nor is any member of it afflicted with epilepsy. He was a healthy child till he was ten years of age, when he commenced to practice masturbation, and soon after had an epileptic fit, in which he bit his tongue. This was followed by severe pain in the head, and incapacity for exertion next day. The fits occurred every three or four weeks. They came on suddenly, without any premonitory symptoms. During the first two years he took "skull-cap tea," without effect; his diet was also regulated. He

still continued to practice self-abuse, and did not finally relinquish it till he was twenty-two, about the time when he began to take nitrate of silver. For two years he tried homœopathy, the fits increasing in severity. He was at school up to the age of fifteen, when he tried a sea-voyage, but without benefit. Having returned, he sailed for South America, where he remained for two years, the fits being as frequent as before. While at New York he contracted gonorrhœa, having been accustomed to frequent sexual intercourse from the age of sixteen, in addition to the habit of self-abuse. He remained in New York for a few months, trying various remedies, among them sulphate of zinc, but without relief. He went again to the South for a few months, and upon his return he placed himself under the care of Dr. Kissam, (his brother-in-law,) who prescribed nitrate of silver, in doses of one-eighth of a grain, three times daily, and in two months it was increased to half a grain. Very soon after he began to take this remedy, the severity and frequency of the fits began to decrease, and he was so convinced of its efficacy, that he continued its use for about eight months, against the advice of Dr. Kissam, who feared it might affect his skin, which, indeed, it did to some extent, giving it a blue tint. At the end of this time, the fits left him for a period of two years, having gradually decreased in frequency under the use of the nitrate of silver. From the time of his contracting gonorrhœa till his marriage, he abstained altogether from sexual intercourse and the habit of self-abuse, so that during the whole time he was taking the nitrate of silver he had no extraneous sexual excitement; yet during this period he says that he was constantly troubled with nocturnal erections, and frequent seminal emissions. Being now twenty-four years of age, he married, shortly after which he again became addicted to sexual excesses. He left his wife and his business for several months, and travelled; the fits, however, recurred every three or four weeks, and were very severe. On his return his wife died, and he remained a widower six years, abstaining altogether from sexual excesses, although frequently troubled with erections. During the six years he broke his arm, several fingers, and his leg twice, while in the fits. At the age of thirty he married a second time, the fits having increased in number and severity. He was often compelled to send his wife into the country for a day or two, in order to avoid sexual excitement. The fits now recurred daily. His wife died a year after marriage. After this he again abstained from sexual excesses. Dr. Horace Green, of New York, now cauterized his larynx daily with nitrate of silver, and at the end of three or four months he would be free from fits for nineteen days; when they did recur, they were so slight that he scarcely lost consciousness, and did not fall down. This plan of treat-

ment was pursued for two or three years, at the end of which time he became attached to another young woman, which revived all his old amatory feelings, and the fits began to increase in frequency, recurring at intervals of fourteen days, when they would continue daily for a week, and then cease for fourteen days more. Galvanism was now tried, with some slight beneficial effect. Next arsenic, in the form of Fowler's solution, which he continued until the fits recurred daily, and he became so prostrate that he was confined to his bed. For a long time he took iron to neutralize the effects of the arsenic, but for months he was compelled to walk on crutches. He came to England two years ago, to have tracheotomy performed by Dr. Marshall Hall, who had advised it when he saw the man in America. Dr. Hall died soon after the man's arrival, and he went to Paris, and was under the care of M. Nélaton. Afterwards he placed himself under the care of M. Trousseau, who gave him Belladonna, which affected his vision, but not his fits. Dr. de Lasiauve next treated him with camphor for four months, without effect. He returned to England, and was under Mr. Simon, at St. Thomas's Hospital, in order to have castration performed, in which he had great faith, for he attributed his fits chiefly to sexual excitement, which still troubled him much; but his wish was not acceded to. He took bromide of potassium without any benefit, and then the nitrate of silver for two or three months, in half-grain doses three times a day. The skin became darker than before, and the fits recurred daily. He next went to Germany, and was there sounded for a stone in the bladder on account of frequent micturition, which he has had since infancy. No calculus was present. He was an inmate of the hospitals of Vienna, Prague, and Dresden. He left the latter in October, 1858, and was admitted into the Westminster Hospital, under Dr. Radcliffe, on the 30th of the month, and remained in two months, during which time he took quinine and iron, and camphor, but without avail. Since his second wife's death he has entirely abstained from sexual intercourse, though he has been constantly troubled with nocturnal erections, and occasional seminal emissions, and these continued up to the time when he came under the care of Mr. Holthouse, to whom he applied to perform castration, which, after much deliberation, he consented to do; and it was performed upon both testicles on the 4th of January, 1859, under the influence of chloroform. Two or three hours afterwards, there was considerable hemorrhage, which was checked by the application of cold. He had one fit during the hemorrhage. His face has a bluish-slate tinge, which pervades the body, but the color is darkest on the face. His fits are of the rotary kind, preceded by a sudden scream, and lasting not more than a minute, and when over he is quite himself again. In the fit which he

had in bed after the operation, he did not scream, but merely struggled violently.

January 5th.—He had another fit this morning.

6th.—The fit recurred early this morning.

7th.—At four this morning another fit occurred. He says that after his second marriage the fits frequently followed immediately on the act of connection.

8th.—Has had no fit at all to-day.

9th.—Had a very slight attack this morning, scarcely more than a giddiness for a minute. Altogether, since the operation, the fits have been exceedingly mild.—[*Lancet*, and *North American Med. Chir. Review*.]

Fæces.

FÆCES consists partly of undigested, partly of indigestible substances; their odor depends on volatile fatty acids: butyric acid, and capric acid also called fæcin. Sulphuric acid is employed as a test for fæces in cases of strangulated hernia, &c., after having first mixed them with water; the fatty acids are thus volatilized, and are then recognized by their smell. Sulphuretted and phosphuretted hydrogen are formed in the intestinal canal, and are partially absorbed by the fæces. The color of normal fæces is yellowish brown, from caprophæin, which is a product of biliphæin. Biliphæin does not occur as such in them. Caprophæin immediately strikes a red color with nitric acid. If the flow of bile into the intestinal tube be obstructed, the fæces assume a pale color. Soluble salts are found only in very small quantity in the fæces; under the microscope, we observe portions of vegetable matter (spiral vessels), and from these the ashes of incinerated fæces derive their potash. The earthy phosphates are found in great quantity; in rachitis they are so abundant, that the ashes occupy almost as much space as the fæces did before incineration. Of iron there is scarcely a trace; the ashes are white.

The consistence of abnormal fæces may be natural, increased or diminished.

1. In fæces of natural consistence we do not find much that is abnormal. In affections of the bones, and especially in rachitis, the earthy phosphates are present, as has been observed, in excessive quantity. After the use of ferruginous remedies (which however, usually produce a thinner, porridge-like consistence), and after hemorrhoidal bleeding, we observe a darker, blackish-green color, derived from sulphuret of iron. The ashes then have a rusty brown color, whilst the ashes of vegetable coloring matters are white. Analysis does not show whether the iron is

derived from the chalybeate preparations which have been taken, or from blood. In thin fæces albumen may be sought for.

2. *Increased consistence* is observed after the ingestion of carbonate of lime (in spring-water, or as chalk, &c.) in abstinence from drink, in chlorotic patients, &c.

3. *Diminished consistence*.—Before examination, the portions which are not quite fluid should be dissolved or suspended in water. We may distinguish.

(a) *Watery Discharges*.—These contain soluble salts, which do not ordinarily occur in the fæces, and usually some biliphæin; their reaction is sometimes neutral, sometimes acid; in children this is owing to the presence of lactic acid.

(b) *Serous Discharges*.—The fluid floating above the solid portions contains albumen, although the solid parts do not contain blood (in which case these portions would be of a greenish or brownish-black color). They have an alkaline reaction derived from carbonate of soda, sometimes also from ammonia, as in typhus, and are generally poor in caprophæin. They occur in chronic diarrhœa, dysentery, typhus, and cholera.

(c) *Bloody Discharges*.—They are either of a bright red color, from the lowest part of the intestinal canal, and exhibit blood-corpuscles under the microscope; or are darker colored in proportion as the effusion has taken place higher up in the tube; if they are derived from the stomach, they are black as pitch. Iron may be demonstrated in the ashes and albumen in the fluid portions.

(d) *Bilious Discharges* are sometimes pap-like, sometimes watery, sometimes serous; they usually contain biliphæin instead of caprophæin. It is detected by means of Heller's test. Great importance is often ascribed to them, as they are supposed to be connected with an affection of the liver. When diarrhœa sets in rapidly, the first motions almost always contain biliphæin; this is, therefore, formed after the exhibition of purgatives, in the commencement of cholera, &c. Where biliphæin is long persistent (cholorrhœa) we may infer the existence of an affection of the liver. In dysentery the excretion of bile seems somewhat increased.

The green stools which occur during the use of mineral waters often proceed from sulphuret of iron. After calomel, they proceed from sulphuret of mercury; but we should remember in both cases that biliphæin passes off in the beginning, as during the administration of other purgatives.

(e) and (f) *Mucous and Purulent Discharges* are not easily distinguished. The microscope exhibits no diagnostic characters. In purulent stools the fæcal serum contains albumen. Mucus is found in the mass, as transparent lumps capable of being drawn out into threads; it is also often voided in this form

without any fæcal mass. Pus is more equably intermixed; where ammonia is not present, and has not already affected the pus, the ordinary test for that secretion may be applied to these fæcal masses.

All diarrhoeal discharges may become *ammoniacal*; it is a bad sign: we find a strongly alkaline reaction, and with it invariably crystals of ammoniaco-magnesian phosphate. This condition frequently attends purulent diarrhoea in typhus and puerperal fever. In dysentery the fæces may become ammoniacal without giving rise to an unfavorable prognosis, as the development of ammonia proceeds from the decomposition of intermingled urea derived from the blood and serum.

Biliary Calculi are in general distinguished from conglomerated fæces by floating in water. They may consist of,

1. *Cholesterine*, which occurs in masses of all possible sizes, sometimes exceeding that of a pigeon's egg; such calculi are ordinarily white or slightly colored with biliphæin. Ignited on platina foil, they first melt, and then burn with a yellow flame, forming much soot, and developing a smell of burning fat. They dissolve in boiling alcohol, from which the cholesterine precipitates on cooling in the form of white scales. It is by this process cholesterine is usually obtained.

2. *Cholesterine and Biliphæin*.—This is the most usual form of biliary calculi; they are of a brownish-yellow or dark orange color, and participate in the characters of Nos. 1 and 3.

3. *Biliphæin*.—These calculi are blackish-brown, do not fuse on platina foil, but burn with a faintly yellow flame. Extracted with solution of potash they give a dark orange-yellow solution, to which Heller's test is to be applied.

4. *Inspissated Bile*.—These are very common in the old; are usually small, black or green, very hard, and do not fuse when heated on platina foil. They are to be extracted with solution of potash, to which Heller's test for biliphæin and Pettinkofer's test for bilin are to be subsequently applied.

5. *Carbon*.—(Demonstrated by Berzelius); these are rare, do not fuse, and are insoluble in all re-agents.—[Heller, by Dahl, and *Medical News*.

Bradycrote Treatment of Yellow Fever by Gelseminum Sempervirens. By Drs. WHITE and FORD, Charleston, S. C.

IN view of the results obtained from a reduction of the pulse, in the treatment of the fever as observed under the veratrum, and in order to contrast with this drug another remedy possessing similar powers, at the suggestion of Dr. White, we also used in the present epidemic the tincture of gelseminum sempervirens,

which was prepared after the following formula: *R.* Rad, gelsem. semp., $\text{\text{z}}$ iv., alcohol (95 per cent.) aq. com., aa $\text{\text{z}}$ viii. *M.* And digest 14 days, then filter. The initial doses of this tincture were, for adults, from 20 to 30 drops—and for children, from 5 to 20 drops, every hour for the first four hours, and as with the veratrum the secondary doses were half as large.

Certain cases which had been seen late, or were characterized by notable irritability of the stomach, as also some which showed no special malignity were treated by this agent with marked advantage; upon whose employment Dr. White decided in consequence of the statements of Dr. Cleveland, of Cincinnati, and of Dr. Mayes, of South Carolina, in this journal, concerning its influence upon the pulse and freedom from irritant properties, &c. From notes taken upon cases thus treated, we have deduced the following numbers:

Total number treated with gelseminum sempervirens, 24; all of which recovered. Of these, 15 were males and 9 females. Adults, 12, and children, 12; whites, 22; and blacks, 2; natives of Charleston, 10; South Carolina, 5; Ireland, 7; Germany, 2.

Mean frequency of Pulse.	ADULT MALES. Beats per Min.	ADULT FEMALES. Beats per Min.	CHILDREN. Beats per Min.
When first given - - -	112.4	101.3	122.2
Twelve hours after - - -	55.4	54.6	70.9

Of the whole number treated, 2 vomited black vomit, 5 passed black vomit downwards. In 3 cases hemorrhage occurred from tongue, gums or nasal passages.

One woman was in the sixth month of her pregnancy, and did not abort.

Avera. duration of treatment.	ADULT MALES. Days.	ADULT FEMALES Days.	CHILDREN. Days.
For - - - - -	7.2	9.3	8.5

No marked prostration was caused by this remedy. The pulse being, however, much less quickly reduced than by the veratrum. In few cases was the heart's action fully lowered in less than 12 hours, and it was well controlled throughout the rest of the disease in the majority of cases. The concurrent treatment was the same as with the veratrum. Mercurialization was complete in 10 cases; incomplete in 14 cases. In a few instances, a marked redness of the tongue was observed, a condition that was not distinctly noticed during the administration of the veratrum. The gelseminum appeared to produce a general calming influence even during the early period of its administration, but was not found to possess any marked narcotic properties. It seemed also, to promote the action of the kidneys, and during its use only, in several cases, an erythema of the skin was noticed. This drug appeared to influence the volume of the pulse before

it affected its frequency, and in most cases for the rest of the disease to control both conditions in an equal manner—emesis was not observed to ensue upon the administration of this medicine; the gastric irritability peculiar to the disease being moreover to all appearance favorably influenced.

The total number of cases of yellow fever treated with a slow pulse by the *veratrum viride* and *gelseminum sempervirens*, was conjointly 141, of which 15 died and 124 recovered.

Total number of cases treated by ordinary methods were 6, of which 3 recovered and 3 died. These vomited black vomit and died. One was a pregnant woman in her seventh month, who died without abortion.

In conclusion, we beg leave to remark, that the confidence with which we were inspired by the use of these drugs in the commencement of the epidemic has continued unabated: that we still continue to use them, and intend to do so again, should our city be unfortunately re-visited by this obdurate and calamitous disease.

With apologies for the length and statistical nature of this communication, we remain respectfully yours.—[*N. York Jour. of Materia Medica.*]

Matters Discharged by Vomiting.

ACCORDING to the chemical nature of their contents we may distinguish the following varieties:—

1. *Normal Contents of the Stomach.*—These, in addition to the ingesta, consists of a mucous, transparent fluid, having a strongly acid re-action, which is a mixture of mucus and gastric juice. In the latter we find all the salts of the blood and a peculiar acid, the acid of the stomach. This possesses the energy formerly attributed to pepsin; pepsin is only a product of decomposition, developed by the action of dilute hydrochloric acid on mucus. The acid of the stomach is soluble in alcohol and in water; if we evaporate the alcohol, a viscid mass of syrupy consistence remains behind. Free hydrochloric acid is not found in the stomach, except when the chloride of sodium of the gastric juice is decomposed by acids. Lactic acid and fatty acid are derived solely from the food.

2. *Watery vomitus* is the normal contents of the stomach plus water, has an acid re-action, contains no albumen, and must be carefully distinguished from the following:—

3. *Serous vomitus.*—In this the gastric juice has nearly disappeared; it has an alkaline reaction, and may be almost considered as a very watery serum of the blood; it contains small quantities of albumen, alkaline carbonate, and albuminate of soda. It occurs in cases of very frequently repeated vomiting, where

the effort gives rise to hyperemia and exosmosis: consequently in pregnant women, almost constantly in perforating ulcer, which has not yet produced hemorrhage, in carcinoma, &c., and in cholera.

4. *Uremic vomitus* occurs in connection with other uremic phenomena. It has an alkaline reaction in consequence of the presence of carbonate of ammonia, which is detected as in albuminous urine; it contains in addition albumen, urea, and sometimes uric acid and uroxanthin.

5. *Bilious vomitus*.—Chiefly in hyperemia of the liver, especially when metallic poisons become deposited in that organ, which takes place very rapidly, as in poisoning by copper and arsenic. Biliphæin is usually present in the green or blue, rarely in the yellow, modification; in poisoning with copper, the color is derived from it. Bile is also frequently found mixed with the varieties of vomitus. Biliphæin is demonstrated by means of Heller's test; bilin is decomposed so rapidly in the stomach, that it can be rarely detected.

6. *Bloody vomitus*.—We may find a fresh red color, or it may have already become of a blackish brown; in the first case, we shall be able to discover blood corpuscles; in the second, these will not be apparent; in both cases, we shall have albumen. To distinguish the colored substance from berries which may have been eaten, we may burn it on a piece of platina foil; fruits give a white ash, blood a rusty brown. The ash may be dissolved in hydrochloric acid, neutralized with ammonia, and tested for iron.

7. *Fæcal vomitus* is characterized by a yellow color and fæcal smell, the latter being increased on the addition of concentrated sulphuric acid.

8. *Purulent vomitus* is distinguished by means of the potash test, and by testing for albumen.—*Heller, by Dahl, and Med. News.*

On the Hautle, or Animal Bread of the Mexicans. By M. GUERIN-MENEVILLE.

IN the *Bulletin de la Societe Imperiale Zoologique d'Acclimation*, M. Guerin-Meneville has published a very interesting paper on a sort of bread which the Mexicans call Hautle, and which is made of the eggs of three species of hemipterous insects belonging to the group of water-bugs.

According to M. Craveri, by whom some of the Mexican bread, and of the insects yielding it, were brought to Europe, these insects and their eggs are very common in the fresh waters of the lagunes of Mexico. The natives cultivate in the lagune of Chalco, a sort of *carex* called *toule*, on which the insects readily

deposit their eggs. Numerous bundles of these plants are made, which are taken to a lagoon, the *Tescuco*, where they float in great numbers on the water. The insects soon come and deposit their eggs on the plants, and in about a month the bundles are removed from the water, dried, and then beaten over a large cloth to separate the myriads of eggs with which the insects had covered them. These eggs are then cleaned and sifted, put in sacks like flour, and sold to the people for making a sort of cake or biscuit, called *hautle*, which forms a tolerably good food, but has a fleshy taste, and is slightly acid. The bundles of *carex* are replaced in the lake and afford a fresh supply of eggs, which process may be repeated for an indefinite number of times.

Moreover, says M. Craveri, the Mexicans collect quantities of these insects from the surface of the water by means of hooped nets, and these are dried and sold as food for birds. In Mexico, these dried insects are sold in the streets and markets, the dealers crying "*Moschitos, Moschitos*," just as in Europe they cry "*Food for your singing birds*".

It appears that these insects have been used from an early period, for Thomas Gage, a religionist, who sailed to Mexico in 1625, says, in speaking of articles sold in the markets, that they had cakes made of a sort of scum collected from the lakes of Mexico, and that this was also sold in other towns.

Brantz Mayer, in his work on Mexico (*Mexico as it Was, and as it Is*, 1844), says, "On the lake of Tescuco, I saw men occupied in collecting the eggs of flies from the surface of plants and cloths arranged in long rows as places of resort for the insects. These eggs, called *Agayacath*, formed a favorite food of the Indians long before the conquest, and when made into cakes resemble the roe of fish, having a similar taste and appearance. After the use of frogs in France, and birds' nests in China, I think these eggs may be considered a delicacy, and I found that they were not rejected from the tables of the fashionable inhabitants of the capital.

The more recent observation of Messrs. Saussure, Salle, Valet D'Aoust, &c., have confirmed the facts already stated, at least in the most essential particulars.

The insects which principally produce this animal farina of Mexico, are two species of the genus *Corixa* of Geoffroy, hemipterous insects of the family of water-bugs. One of these species has been described by M. Guérin-Meneville as new, and has been named by him *Carixa fermorata*. The other, identified in 1831 by Thomas Says, as one of those sold in the market at Mexico, bears the name of *Corixa mercenaria*.

The eggs of these two species are attached in innumerable quantities to the triangular leaves of the *carex* forming the bundles which are deposited in the water. They are of an oval form

with a protuberance at one end and a pedicle at the other extremity, by means of which they are fixed to a small round disc, which the mother cements to the leaf.

Among these eggs, which are grouped closely together, and sometimes fixed one over another, there are found others, which are larger, of a long and cylindrical form, and which are fixed to the same leaves. These belong to another larger insect, a species of *Notonecta*, which M. Guérin-Meneville has named *Notonecta unifasciata*.—[*Jl. de Pharm.*, and *London Phar. Jour.*

A Case of Spontaneous Hydrophobia. By Dr. HENRICH.

F. K., thirty years of age, suffered on the twenty-ninth of May, 1857, of cephalalgia, which radiated from the forehead to the occiput, and of all the symptoms of a cold in the head. On the morning of the thirteenth he complained of chills, and distressing horripilations. Dr. Henrich examined the patient attentively, without finding in the throat or elsewhere a single sign of disease. In the evening he was called in great haste to the patient, whom he found sitting in the bed, the face bathed in perspiration, pale, and expressive of terror; the eyes injected, brilliant, haggard; the voice hoarse, anxious, and broken. The patient complained of pain and constriction in the throat and chest, of intense thirst with impossibility to drink, and of dryness of the mouth. The respiratory movements were accelerated, superficial, and irregular; they became normal in the interval of the spasms, which followed each other rapidly; but when the throat became constricted, the patient seemed to suffocate, and carried the hand to the neck as if to remove an obstacle to respiration. The saliva flowed in great quantity from his mouth. Pulse ninety, and feeble. Pharynx a little reddened, and covered like the mouth with viscid mucus.

After earnest entreaties, Dr. Henrich finally succeeded in trying to overcome his violent horror of liquids; after having for a long time struggled against a convulsive contraction of the muscles of the forearm, he could finally bring a glass of water to his mouth, but hardly had the first few drops of the liquid touched his lips, when he was seized with a violent attack of suffocation. He threw his glass away with a gesture of despair, and taking refuge in the remotest part of the bed, cried out to take the water away; that he could not swallow; that he was suffocating.

In this condition he remained during the night. The impression of light or of a current of air exercised, however, no perceptible influence upon the spasms, and the vesicles of Morochetti were not found on the margin of the tongue. In spite of venesection, a blister on the chest, etc., all the symptoms were aggra-

vated the next day; chloroform exasperated them; and they became less violent only for a few moments, after the patient had lost about a pound of blood through the wound made by the venesection, which had opened again; but soon they returned with greater intensity; tetanic convulsions and opisthotonos supervened, and the patient expired half an hour later. He had preserved the full power of his intellectual functions until tetanus came on.

On autopsy, a very slight swelling of the base of the tongue was discovered; the pharynx was in a healthy condition; some pulmonary hypostasis, and two hemorrhagic suffusions in the mucous membrane of the stomach were found. All the other organs, the spinal marrow included, presented no alteration. The blood was black, liquid, and diffuent.

Dr. Henrich assured himself, by the most careful inquiries, that the patient had never been bitten by a dog, either mad or healthy, and that he did not believe himself at all attacked by hydrophobia. For three weeks previous, however, he was in low spirits, and without being otherwise sick, had a presentiment of his approaching death, as he said. He indulged, however, in excessive coitus, (he was married and kept two mistresses), and was troubled with grief and sorrow. To these two causes combined, the appearance of the terrible malady may be attributable.—(*Henke's Zeitschrift für Staatsarzneikunde*, 1858, p. 361).

This case, which belongs to the third class of spontaneous hydrophobia of M. Chomel, (*Dict. de Méd.*, tome xv. 1837), is, among all the published cases, one of the most characteristic. Cases of similar kind have been reported by MM. Ely, Burgreave, (*Gaz. des Hôpitaux*, 1854), Lessmann, (*Preuss. Vereinszeitung*, 1854), Bulley, (*Assoc. Med. Journ.*, 1854, Nov. 11), and Putegnat, (*Journ. de Méd. de Bruxelles*, June, 1853).—(*Gazette Hebdomad.*, 1858, 40).—[*North American Med. Chir. Review*.

Successful Case of Amussat's Operation for Artificial Anus.

A CASE now under Mr. Hutchinson's care as an out-patient of the Metropolitan Free Hospital, affords an interesting illustration of the occasional value of Amussat's operation. The bowels had been obstinately constipated for three weeks and eleven days; in spite of the use of free enemata, neither feces nor flatus had been got away. The obstruction was caused by the pressure of a large malignant tumour which completely filled the upper part of the pelvis. The abdomen was greatly distended, and the pain and vomiting were almost incessant. The patient being evidently about to sink, Mr. Hutchinson determined to open the colon in the left loin. This was done with-

out wound of the peritoneum, and a large utensil full of fluid feces escaped at the time. An artificial anus was established, through which ever since the bowels have been freely relieved. More than a month has now elapsed since the operation. The malignant tumour continues to grow rapidly, and will before long cause the patient's death. It is worth mention, that the inconvenience caused by the anus in the loin has been very trivial, a poultice over the part being found quite sufficient to prevent the incontinent escape of gas or fecal matters. If proof of the need which existed for another mode of relief, is the fact that neither flatus nor feces have passed by the rectum since the operation. The same case is of much interest as an instance of a return of cancer in the pelvis after ovariectomy. Probably not fewer than between three and four hundred ovariectomy operations have now been performed, and as far as we are aware no other instance of the return of cancer afterwards has yet been recorded. The patient made a good recovery after the extirpation of the ovarian cyst, and regained her health and strength. Within three months, however, there were evidences of a solid pelvic tumour, which afterwards grew rapidly.—[*Med. T. & Gaz.*

Some Experimental Researches on the Effects of Cold on the Human Body. By MM. THOLOZAN and BROWN-SEQUARD.

A SERIES of researches permits the authors to draw up the following propositions:—1. If our extremities are exposed to the action of cold water, they can in a very short time lose a considerable portion of their temperature, (according to our experiments, from ten to eighteen degrees). 2. After an extremity has lost much of its temperature, (from ten to eighteen degrees), it does not regain it before the end of forty-five minutes or an hour in an atmosphere varying from twelve to eighteen degrees. 3. Contrary to the opinion of Edwards, the lowering of the temperature of a small part of the human body has no sensible influence upon the general temperature. 4. The lowering of the temperature of one hand can produce considerable falling of the temperature of the other, without the general temperature of the body being sensibly diminished.

Dr. Brown-Séquard has ascertained that the latter phenomenon becomes more marked if the immersed hand is the seat of more intense pain, and if the temperature of the air in which the other hand is kept is less elevated; it is also proportional to the contraction of the vessels of the hand not immersed, and it is this contraction exclusively which produces the falling of the temperature. This phenomenon is an example of reflex action upon the blood-vessels, their muscles contracting under the in-

fluence of an irritation applied to the sensitive nerves of another extremity; it is further remarkable, that this reflex action takes place only between homologous parts, and that the immersion of the hand, for instance, into cold water, exercises no appreciable influence upon the temperature of the feet.—[*Journal de la Physiologie*, and *North American Med. Chir. Review*.]

The Metallic Seton.

As wire is replacing silk and other organic materials for sutures, so it is likely to be used in cases where a seton is used for the purpose of setting up inflammation in serous sacs. Dr. Simpson has used the wire seton with success in hydrocele, and his practice has been followed in London by Mr. Spencer Wells. The first case in which he tried it was one of hydrocele of the round ligament in an out-patient at the Samaritan Hospital. The cyst was of the size of a small orange. It had existed several years, and had been mistaken for hernia. Mr. Wells tapped it the first day the woman applied, and evacuated more than an ounce of clear serum. It filled again in a few days, and he then passed an iron wire through it by means of a common needle, and fastened it loosely in a loop. The fluid drained off, adhesive inflammation was set up, and the wire removed on the third day. The tumour remained quite solid for a few days afterwards, but has gradually disappeared, and the cure appears to be complete. Two other cases, one of a cyst in the neck connected with the thyroid gland, and the other a mammary cyst, have been treated in the same way, and are going on satisfactorily. This mode of treatment is simpler and safer than the injection of iodine, and will probably prove equally or more effectual.—[*Med. Times and Gazette*.]

On Rheumatism of the Diaphragm. By Dr. CHENEVIER.

AFTER reporting several cases of this disease, the author gives the following description of it:—The disease commences with a sudden pain at the points of attachment of the diaphragm, which produces a feeling of constriction at the base of the thorax, but is not augmented on pressure. Deep inspirations are impossible, and respiration is carried on only by the superior ribs. Percussion is normal, and auscultation does not reveal any change in the respiratory murmur, which is only somewhat weaker at the base of the thorax; there is no cough; sometimes, however, a painful hiccough. The abdominal organs offer no symptom of disease. The attack lasts from one to eight hours, and disappears then without leaving any trace. The prognosis is favorable. Rheumatism of the diaphragm is easily distinguished from

inflammatory diseases of the lungs by the absence of the symptoms of the latter. It could only be mistaken for a neuralgic affection of neighboring organs, as, for instance, intercostal neuralgia; but it is sufficiently distinguished from it by the pain being felt particularly in the three characteristic points, while in the neuralgia just mentioned it is confined to one side. From angina pectoris it is distinguished by the peculiarity that the pain proceeds in this malady from the sternum and radiates on one side to the arm. In nervous asthma, which also commences with sudden difficulty of breathing, the peculiar feeling of constriction as well as the confinement of the respiratory movements to the superior ribs, is not noticed; the two latter symptoms are pathognomonic of rheumatism of the diaphragm.

The treatment of the disease consists in the application of cups, mustard poultices, anodyne embrocations, and chloroform; if it is obstinate, the endermic application of morphia will be useful.—[*Gazette des Hôpitaux*, and *North Amer. Med. Chir. Rev.*

EDITORIAL AND MISCELLANEOUS.

FOR THE MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF GEORGIA.

At the last annual meeting of the Medical Society of the State of Georgia, held at Madison, it was determined by a vote of the Society, "that all the Medical Journals in the State be requested to publish the Constitution, &c., in their columns." This request we cheerfully acceded to at the time, and we now, in accordance with our agreement, present the several articles of the Constitution, at a time when they may be most useful to the members of the Society. The Roll of members would be very properly here recorded, but as this may require careful revision, on account of deaths, removals, and resignations of members, we defer its publication for the present.

The Medical Society of the State of Georgia had its origin in the manner we find recorded in a pamphlet containing the Proceedings of the State Medical Convention:—"In pursuance of a call from the Medical College of the State of Georgia, [Augusta,] and the Georgia Medical Society of Savannah, addressed to the Practitioners of Medicine throughout the State, they assembled in Convention, in the city of Macon, on Tuesday, the 20th of March, 1849."

This Convention was temporarily organized by calling Dr. Thomas Hoxey, of Columbus, to the Chair, and appointing Dr. S. W. Burney, of Monroe Co., Secretary. When, on motion of Dr. R. D. Arnold, of Savannah, the members presented their names, it was found that thirty-one

Counties were represented—viz: Baker, Baldwin, Bibb, Burke, Chatham, Clark, Cobb, Crawford, Dooley, Fayette, Floyd, Gwinnett, Henry, Houston, Jasper, Jones, Lee, Madison, Merriwether, Monroe, Morgan, Muscogee, Oglethorpe, Pike, Richmond, Stewart, Sumter, Troup, Twiggs, Upson and Washington.

“On motion of Dr. J. M. Green, the Chairman appointed a Committee consisting of one from each county represented, to nominate officers for the permanent organization of the Convention.

The Committee retired, and upon returning, reported through its Chairman the following, viz:

Lewis D. Ford, M. D., of Augusta, President; R. D. Arnold, M. D., of Savannah, 1st Vice-President; T. R. Lamar, M. D., of Macon, 2nd Vice-President; James M. Green, M. D. and C. T. Quintard, M. D., of Macon, Secretaries.

Dr. Arnold moved the appointment of a Committee to draft a Constitution and By-Laws for the permanent organization of a State Medical Society, which being carried, the President of the Convention accordingly designated the following:

Dr. R. D. Arnold, of Chatham; Dr. J. M. Green, of Bibb; Dr. Thomas Hoxey, of Muscogee; Dr. Charles West, of Houston; Dr. H. J. Ogleby, of Morgan; Dr. R. Q. Dickenson, of Baker, and Dr. Gordon, of Gwinnett.

At the second session of the Convention, the Committee appointed to draft a Constitution and By-Laws announced, through their Chairman, that they were prepared to report. The Report of the Committee was received, the Articles discussed and acted on separately, and finally unanimously adopted.

Dr. Charles Thompson, of Macon, then presented the following:

Resolved, That the Convention do now resolve itself into “*The Medical Society of the State of Georgia*,” and that the officers of the Convention continue to act as officers of the Society until an election can be had.

This being adopted, the members prepared ballots—upon counting of which, it appeared that the following gentlemen were elected:

Lewis D. Ford, M. D., of Augusta, President; R. D. Arnold, M. D., of Savannah, 1st Vice-President; Thomas R. Lamar, M. D., of Macon, 2nd Vice-President; James M. Green, M. D., of Macon, Corresponding Secretary; Charles T. Quintard, M. D., of Macon, Recording Secretary; S. W. Burney, M. D., of Monroe county, Treasurer.

Having thus presented a brief abstract of the early history of the Medical Society of the State of Georgia, as we have been able to condense it from the minutes of the preliminary Convention of 1849, we herewith furnish our readers, and the members of the Society, with the

Constitution and By-Laws which have governed its deliberations in its various meetings, from the year 1849, to the present time.

*Constitution of the Medical Society of the State of Georgia, adopted
March 20th, 1849.*

ARTICLE I.—*Title of the Society.*

The name and style of the Society shall be "*The Medical Society of the State of Georgia.*"

ARTICLE II.—*Objects of the Society.*

The objects of this Society shall be the advancement of Medical knowledge—the elevation of professional character—the protection of the interests of its members—the extension of the bounds of Medical Science, and the promotion of all measures adapted to relieve suffering humanity and to protect the lives and improve the health of the community.

ARTICLE III.—*Members of the Society.* -

SEC. 1. The Society shall consist of every person now present as a member of the State Medical Convention, who is a graduate of a respectable Medical College, or who may be authorized to practise by the legislative act of 1839, re-constituting the Medical Board of the State, and who shall conform to the regulations of the Society.

SEC. 2. Any Member of the Profession, thus qualified, can hereafter, on written application to the Society, through the Corresponding Secretary, be admitted to it by a vote of two-thirds of the members present.

ARTICLE IV.—*Of the Officers.*

SEC. 1. The Officers of the Society shall be a President, two Vice-Presidents, a Corresponding and a Recording Secretary, and a Treasurer.

SEC. 2. Each officer shall be elected annually, by ballot, on a general ticket, and shall serve for one year, or until another be elected to succeed him.

ARTICLE V.—*Duties of Officers.*

SEC. 1. The President shall preside at the meetings, preserve order, and perform such other duties as custom and parliamentary usage may require. He shall not be eligible two terms in succession.

SEC. 2. The Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence of, or at the request of the President, one of them shall officiate in his place.

SEC. 3. The Corresponding Secretary shall conduct the correspondence and perform such other duties as usually appertain to that office.

SEC. 4. The Recording Secretary shall keep correct minutes of the proceedings, and when approved, shall fairly transcribe the same in a book to be kept for that purpose. He shall have charge of all papers belonging to the Society, other than those appertaining to the Treasurer and Corresponding Secretary, and give due notice of the annual meetings.

SEC. 5. The Treasurer shall receive all monies belonging to the Society, and disburse them as directed, preserving vouchers for the same. He shall annually present a statement of the finances of the Society, which shall be referred to a committee to be audited.

ARTICLE VI.—*Of Auxiliary Societies.*

SEC. 1. The members of the Profession in any county, or in any two or more adjacent counties, where there is not a sufficient number in one county, in this State, who desire so to do, may form themselves into an Auxiliary Society: *Provided*, that public notice of the proposed meeting be given, and that all the regular members of the profession in said county or counties be invited to join therein; and said Society may adopt rules for their government, provided the same do not contravene those of the State Society—may elect officers, and do all such acts as may be necessary to carry out the objects of their association.

SEC. 2. No one shall be admitted a member of an Auxiliary Society, unless he is either a graduate in Medicine, of some respectable Medical School, or has a license to practise from the Medical Board of Georgia, or is recognised as a practitioner by the act reviving that body, passed in 1839; and who, moreover, is in good moral and professional standing in the place where he resides, and is a regular practitioner.

SEC. 3. Any physician who shall procure a patent for a remedy, or instrument of surgery, or who uses in his practice any secret remedy or nostrum, or who shall hereafter give a certificate in favor of such instrument or remedy, shall be disqualified from becoming a member of an Auxiliary Society, and consequently of the State Society.

SEC. 4. As soon as an Auxiliary Society is organized, the Secretary thereof shall transmit to the Corresponding Secretary of the State Society, a copy of their rules and regulations, with the names of the officers and members.

SEC. 5. Every Auxiliary Society shall enforce the observance, by its members, of the Code of Ethics adopted by the State Society; and they shall be authorised to censure or expel any member convicted of violating its provisions.

SEC. 6. The Auxiliary Societies shall report annually to the State Society a list of their members and officers, any new rules they may adopt, and such other matters as they may deem interesting.

SEC. 7. The Auxiliary Societies shall hold, at least, two meetings in every year.

ARTICLE VII.—*Meetings of the Society.*

SEC. 1. The Society shall hold an Annual Meeting on the second Wednesday in the month of April of each year.

SEC. 2. The place of meeting shall be determined, for each succeeding year, by a vote of the Society.

ARTICLE VIII.—*Of the Funds.*

Means for defraying the expenses of the annual meetings, and current expenses of the Society, may be raised by an annual assessment on its members, of not more than two dollars each.

ARTICLE IX.—*Code of Ethics.*

This Society adopts, as a part of its regulations, the Code of Ethics of the American Medical Association.

ARTICLE X.—*Alterations.*

No alteration or amendment of this Constitution shall be made, unless it receives the vote of two-thirds of the members present.

BY-LAWS.—*Order of Business.*

1st. The President, or, in his absence, one of the Vice-Presidents, shall call to order; in case of the absence of all these officers, a Chairman *pro tem.* shall be appointed for that purpose.

2nd. Calling the roll of members.

3rd. Reading of the minutes.

4th. Election of Officers, and Delegates to the American Medical Association.

5th. Any business which requires early consideration may be introduced.

6th. Reports from Auxiliary Societies.

7th. The correspondence shall be read by the Corresponding Secretary.

8th. Written communications may be discussed.

9th. Oral communications may be made and discussed.

10th. Resolutions introducing new business.

11th. Selection of a place for the next meeting.

12th. Miscellaneous business.

There can be little doubt, that much of the misunderstanding and difficulties between Physicians arise from the fact that the established ethics of our profession, on many points, are not generally known. They cannot be too often repeated. They are founded in principles of propriety and right. They are the true test and standard by which to direct our own conduct, and to judge the conduct of our fellows; and the man who does not come up fully, squarely and openly, to the requirements of that code, in his dealings, both with patients and physicians, it is neither harsh nor uncharitable to pronounce his conduct as unprofessional. How important, then, is it that these principles be kept ever before the Profession.

In future successive numbers of this Journal, we will take pleasure in presenting to our readers, and to the members of the Society, the *Code of Ethics* of the American Medical Association, which has been adopted by the Medical Society of the State of Georgia, as their rule of conduct in matters pertaining both to professional intercourse among themselves, and to their relation to the community at large.

Respectfully,

HENRY F. CAMPBELL.

ROBERT CAMPBELL.

Transactions of the American Medical Association, vol. xi., 1858. Prof. F. GURNEY SMITH, Chairman Committee on Publication. Philadelphia: Collins, printer. 1858.

The present volume of this important work—the embodiment of the labors of the Association during the past year—fully equals in size and in value, any previous volume of the Transactions. Between its covers, the Association presents to the Medical profession of the world, ten hun.

dred and twenty-seven pages, embracing a series of reports which discuss, with more or less ability, a number and a variety of some of the most important and interesting subjects, which can engage the attention of scientific men in all countries.

Besides the minutes of the eleventh meeting, the reports of various business committees, the plan of organization, code of ethics, and list of officers and permanent members, the volume contains a number of papers, which give to it a scientific interest, unsurpassed by that of any previous volume, and some of which are well calculated to advance the position of American Medicine wherever they may be read.

1st. The annual address of the President, Prof. Paul F. Eve, which has already been presented to our readers, is a paper of great interest, and highly creditable to its distinguished author. In this address, the entire work of the Association has been reviewed, and its usefulness, in the advancement of American Medicine, ably vindicated. This is just such a paper as should appear at the end of the first decade of the Association, to record the results which its labors had accomplished. pp. 10.

2nd. Report on the Medical Topography and Epidemic Diseases of Kentucky, by W. L. Sutton, M.D., of Georgetown, Ky.—embracing 88 pages.

3rd. Report on the Topography and Epidemic Diseases of New Jersey, and the Treatment thereof, by Leyden A. Smith, M.D.,—contained in 10 pages.

4th. Report of the Committee on the Epidemic Diseases of Ohio, by George Mendenhall, M.D.

Each of these reports is marked by much ability, and will be found useful as statistical records for future reference.

5th. Report of the Committee on Medical Literature, by A. B. Palmer, M.D.

In this paper, Dr. Palmer gives a comprehensive, though compendious review of most of the American publications and American reprints of foreign works. His criticisms appears to be just and judicious, and the entire report is characterized by great elegance of diction and fervor of sentiment; it is a useful, though by no means, a complete bibliography of American medical literature for the few past years, and does credit to the reporter. It occupies a space of about 60 pages in the volume.

6th. Report of the Special Committee on Medical Education, by James R. Wood, M.D., of New York—11 pages.

“Among the leading objects,” says the reporter “of the American Medical Association, since its organization, has been the elevation of the standard of Medical education. Every member of this body, fully impressed with the greatness and dignity of his calling, has deplored the

inferior qualifications of vast numbers of those who annually enter the ranks of the profession, and has naturally sought to remedy the evil."

Thus, deeply impressed with the importance of his subject, Dr. Wood considers fairly and impartially, we think, the various elements which enter into the process of Medical education in this country, and discusses modestly, and with great moderation, the objectionable features in our system, under the five following heads: 1st, Primary Medical Schools; 2ndly, The number of Professorships in Medical Colleges; 3rdly, The length and number of terms during the year; 4thly, The requisite qualifications for graduation; and, 5thly, Such other subjects as are to give uniformity to our Medical systems.

In conclusion, Dr. Wood very properly refers the responsibility of all proposed changes in our system of Medical education, to the entire corps of Medical Colleges from every part of our country, by calling a convention of delegates from the various Medical Schools, in which every interest may be fully and fairly represented.

"In order to give our Medical Colleges," thus concludes the report, "an opportunity to consider the recommendations here advanced, and that this body may have the advantage of their wisdom and their mature views, before any definite action is taken upon them, your committee submits to the Association the following resolutions:

"*Resolved*, That the several Medical Colleges of the United States be requested to send delegates to a Convention, to be held at —, on the — day of —, for the purpose of devising a uniform system of Medical education.

"*Resolved*, That the present Report of the Special Committee on Medical Education be referred to such Convention for its consideration.

"*Resolved*, That said Convention of Delegates, from the several Colleges of the United States, be requested to submit to the meeting of this Association, in May, 1859, the result of their deliberations."

By reference to the minutes of the last meeting of the Association, we find that the blanks, left in Dr. Wood's first resolution, were filled by the appointment of a definite day and place of meeting.

Dr. Frank H. Hamilton, of New York, from the Committee on Delegates from Medical Colleges, reported the following:

"*Resolved*, That we recommend to all the Medical Colleges, entitled to a representation in this body, that they appoint Delegates especially instructed to represent them, in a meeting to be held at *Louisville, on Monday, the day immediately preceding the convention of the American Medical Association for the year 1859, at ten o'clock in the morning, at such place as the Committee of Arrangements shall designate.*"

The above is a very important meeting. There should be a full representation of the Schools, in order that the determinations of the Con-

vention may be the result of the mature deliberation of those most interested in the subject of Medical education. Inconvenient and unsatisfactory recommendations might, otherwise, be presented, with which many Colleges would find it impossible to comply. We hope each School will have its delegate present, to assist in deliberations so nearly affecting the interests of the entire sisterhood.

7th. Report on Spontaneous Umbilical Hæmorrhage of the Newly-born, by J. Foster Jenkins, M.D., of Yonkers, N. Y., pp. 47.

This is a most valuable report on a disease of acknowledged obscurity, both as to its causes and best method of treatment. Dr. Jenkins' paper is by far the best and most thorough examination of the subject we have ever met. It would make a very useful monograph for practitioners.

8th. Report on the Influence of Marriages of Consanguinity upon Offspring, by S. M. Bemiss, M.D., of Louisville, Ky.

Dr. Bemiss enters at once into the very midst of his subject, by bringing it, in all its important bearings before the reader, in his very first paragraph. "Is the offspring of marriages of consanguinity equal physically and mentally to the offspring of parents not connected by ties of blood—both classes being supposed to be similarly circumstanced in respect to all other causes affecting the integrity of their issue?"

This report occupies over one hundred pages of the present volume, not over fifteen of which are devoted to the discussion of the subject; all the rest, statistics, collected from the various States of the Union. The author seems more inclined to let the "facts," as presented in his valuable tables, "speak for him," than to enter into a protracted disquisition. Such statistics will hereafter be found very valuable in the further examination of this very important, though delicate subject. Dr. Bemiss deserves the thanks of the profession for this very able report, and the faithfulness shown by him, in collecting, arranging, and properly presenting the facts, is worthy of our highest commendation. His tabulations are made from over eight hundred and seventy observations of marriages of consanguinity, in various degrees of relationship.

9th. Report on the Functions of the Cerebellum, by E. Andrews, M.D., of Chicago, Ill.

In this report, the cerebellum is examined transcendently with a view to arrive at its function through its anatomy. We may infer, that the author at some future time will consider the results of experiment, and of the effects of disease as illustrating the functions of this often discussed, and as yet, still mysterious portion of the encephalon. The text is illustrated by wood-cuts, presenting in a gradually descending scale, the encephalons of the vertebrate division from that of man to that of the turtle. 16 pages.

In addition to the Reports which we have thus hastily referred to, there are the following which shall receive attention in our next number:—1. Report on the Treatment best adapted to each Variety of Cataract, by Mark Stephenson, M.D., of New York—pp. 22. 2. Report on the Medical Jurisprudence of Insanity, by C. B. Coventry, M.D., of Utica, N. Y.—pp. 50. 3. Report on the Law of Registration of Births, Marriages and Deaths, by Edward Jarvis, M.D., of Dorchester, Mass.—pp. 20. 4. Report on the Nervous System in Febrile Diseases and the Classification of Fevers by the Nervous System, by Henry F. Campbell, A.M., M.D., of Augusta, Ga.—pp. 170. 5. Report on Moral Insanity in its Relations to Medical Jurisprudence, by D. Meredith Reese, M.D., LL.D., of New York—26 pages. 6. Report on Stomatis Materna, by D. L. McGugin, A.M., M.D., of Keokuk, Iowa—pp. 30. 7. Report on the True Position and Value of Operative Surgery as a Therapeutic Agent, by J. B. Flint, M.D., of Louisville, Ky.—pp. 18. 8. A Method for Preserving Membranous Pathological Specimens, by R. D. Arnold, M.D., of Savannah, Ga. 9. Letter from E. D. Fenner, M.D., to President of Association. 10 and 11, the two Prize Essays:

First, The Clinical Study of the Heart Sounds in Health and Disease, by Austin Flint, M.D., of Buffalo, N. Y.—pp. 52. Second, Vision, and some of its Anomalies, as revealed by the Ophthalmoscope, by Montrose A. Pallen, M.D., of St. Louis, Mo.—pp. 65.

We regret that time and space are not sufficient for us to notice the above in our present number.

The present volume of the Transactions fully equals in style and typographical execution that of any of its predecessors; great praise is due to the indefatigable Committee of Publication, for the correctness and promptness with which they have produced and distributed so large a work in so short a time. Their work was much retarded, waiting for proof-sheets sent to distant reporters. When such has been the cause of delay, it is certainly surprising that it had not been more protracted.

BOOKS AND PAMPHLETS.—On account of the large space already occupied by our Original and Editorial Departments in the present number, we have been obliged to defer the notices of several books, pamphlets and new journals, until our next issue.

SCRAPS OF PRACTICE.

Headache and its Remedies.—How much, within a few years, has medical opinion changed in regard to the causes of headache, and *pari passu*, in relation to the remedies suitable for its relief. Time was, when the term "headache" conveyed more or less indefinitely the idea of some affection

of the brain, or its membranes, of an inflammatory or congestive character, and neither opiates, nor quinine, nor stimulants were, for a moment, considered admissible. Even at the present day, there are many in some regions of our country, who regard both quinine and opium as contra-indicated in these cases. Such is not our experience. Headache is promptly relieved, in most individuals, by small doses of the sulphate of morphine—say, one quarter of a grain. There are others—an unfortunate class—whose idiosyncrasies forbid the use of any opiate whatever; these, of course, must forego this remedy. Quinine, in a single dose of 5 to 10 grains, will often be found to ward off an attack of headache, if taken at its beginning, and sometimes, to dispel it entirely, even when fully established. We have never known quinine to increase headache, or when given in very large doses, ever to produce it—though this is the current impression, long observation has convinced us that it is a mistaken one. We know several martyrs to this disagreeable affection, who habitually take a few grains of quinine every morning with their breakfast coffee, and continue the practice for months at a time, with the best results. The effect of quinine, we admit, is to modify the sensations about the head; but seldom or never does this modification assume the form of pain. In the vast majority of cases the quinine will relieve it. When the headache is intermittent, the effect of course is even more marked. Quinine is, in our opinion, always a safe remedy in headache; if we even apprehended inflammation of the brain or its membranes, we would give quinine *the more freely* as a most reliable means for its prevention.

Sick Headache is a term which, unfortunately, too many understand, from an experimental knowledge. In this form, there seems to be an intimate relation between the nerves of the stomach (pneumogastric) and those of the head (trifacial, etc.). The cause may begin, it appears to us, either at the head as from exposure to cold, or it, as most frequently, may begin in the stomach, as from improper diet or the spontaneous vitiation of the secretions, generally giving rise to a superabundance of acid there: at whichever point the *cause* may operate, the *effect* is the same; both the head and the stomach become affected, the one with pain in the frontal occipital and temporal nerves, the other, with nausea of the most distressing kind—truly, “the whole head is sick, the whole heart faint.” Where the cause is operating from the nerves of the head as from exposure to cold, we have found moderate, though decided doses of some opiate with perhaps a foot-bath, to be the best remedy. When, however, the cause begins to operate in the stomach, impressing the sentient nerves of the head with the painful reflex sensation through the pneumogastric, we find it best, first, to correct that condition of the se-

cretions, whatever it may be. Now, to do this, something more appears to be necessary than simply to *correct acidity*. Some *stimulant* is required; we have recommended small doses of brandy with bicarbonate of soda; champagne will sometimes relieve both the headache and the nausea: coffee very often does. The following, however, is one of the most reliable remedies for headache, arising from this condition of the stomach, which we have ever used; we commend it to all who are troubled, whether as medical attendants or sufferers, with this most distressing of all the forms of headache:

R. Of Bicarbonate of Soda.....	3ij.
“ Chloric Æther,.....	ʒss.
“ Camphor Water.....	ʒiiss.

Mix. Dose, one tablespoonful, every two or three hours, with a little water.

The above are some of the principal remedies for headache, though the means for its relief in particular cases must, of course, vary with the special cause and condition of the system from which it arises.—H. F. C.

Diuretics.—New medicines are not, by any means, always the most reliable. This remark applies very particularly to Diuretics. Every day we find new diuretics suggested, and their efficacy lauded in the journals: we are naturally induced to try them, and often to the neglect—even, sometimes to the entire forgetfulness of the older, better established and more reliable ones, which we only have recourse to, when the fashionable article has disappointed our expectations. In several recent cases of anasarca, this was our own mortifying experience. After trying some of the latest and most lauded diuretics, both simple and compound, we met the remark, in Todd's Lectures on the Urinary Organs, that Bitartrate of Potash (Cream of Tartar) is, after all, the most reliable diuretic. All our old experience with the remedy, in former times, arose up before us, and we tried it with more satisfactory success than any of the others. The mode of administration is one teaspoonful three times a-day, either as a powder in molasses, or in the form of a sweetened acidulated drink. About once a week, in obstinate cases, we add 20 grs. of pulverized Jalap to the morning dose, to produce gentle purgation from the bowels.

Moral.—Try that which is new, if it *promises* well, but by no means, neglect that which has *proved* itself good, though it may be ever so old.

H. F. C.

Tartrate of Iron and Potash in Phagedenic Ulcer.—M. Ricord, of Paris, recommends this salt very highly in certain forms of syphilis. We have used it frequently with truly surprising results. We now re-

call to mind a case in which a very large ulcer threatened to destroy the glans penis: the young man was brought very low by exhausting hemorrhages, and the ulcer was rapidly progressing; in consultation with his attending physician, we advised from 5 to 10 grains tartrate of iron and potash, three times a day, with a strong solution of the same kept constantly applied to the affected part, on lint. The bleeding was soon arrested, and the deep ulcer filled up with wonderful rapidity. We have used the remedy many times since, and we are always pleased with its effects in similar cases.—H. F. C.

On the Inhalation of Cinchonia and its Salts. Read before the Biological Department of the Academy of Natural Sciences, December, 1858, By S. W. MITCHELL, M. D., of Philadelphia.

HOWEVER it may be regarded in other regions, to the Southern Practitioner, the following proposition for the administration of the preparations of the great anti-periodic, by inhalation, will appear as a very happy one, and its successful accomplishment, as a most important desideratum. How often are we called to patients in the initial stage of a "congestive chill," when the introduction of Quinine into his system, by any means whatever, appears to be his only chance of life, and yet, to our horror, neither the stomach nor the rectum, will tolerate it; and if they did, the action from these surfaces is too slow to be available. As the author truly remarks, "the passage to the blood, through the lungs, seems to be always an open track;" can we dare to hope, that the proposition here contained may some day, be so far perfected in its application as that the effect of Quinine may be as instantly produced upon the system, by inhalation, as we find Chloroform, and the various Æthers affecting the system. When that day arrives, we can truly say that no case of malarial fever, however complicated with nausea and diarrhoea, will resist the curative efforts of our art. We wish Dr. Mitchell every success in these very important investigations.—[EDTS. S. M. & S. JOUR.

There can be very little doubt that at some future time we shall possess the means of giving to patients many potent remedies in the form of inhalation, rather than in the usual way. This is at least among the hopes of the therapist of the present day. Absorption of medicinal substances by the intestinal mucous surface is but too often uncertain, while the passage to the blood, through the lungs, seems to be always an open track, when the agent inhaled is in a state of vapor. How desirable it would be to possess the means of inhaling quinine in the congestive fevers of our malarious districts, we can very well conceive. Guided by these ideas, I have sought industriously for some means of attaining this result, and although I have failed, as I shall here show, in evolving any very marked practical benefit from these researches, I have

met with certain facts of such interest that I desire to put them on record as indicating a novel direction for medical thought and action.

At one time, the analogy in chemical composition, between certain of the newly formed ethers and quinia itself, seemed to point out these as fit subjects for therapeutic use and trial. The difficulty of procuring them, obliged me, however, to relinquish effort in this direction, and I turned from them to examine anew the alkaloids derived from cinchona bark. While thus engaged, one of my friends, now Dr. Bill, of the army, pointed out to me in Fresenius's Chemistry, his account of cinchonina, which he describes as volatile at high temperatures.

Struck with this, I searched carefully for any account of its inhalation, but as yet have been unable to find in the books on Cinchona any description of inhalation, as a mode of using the alkaloid in question. The last complete work on quinia, by M. Briquet, enumerates many methods of employing the alkaloids and bark, but neither among the means in use, or out of use, is this one alluded to. Occasionally, in disease of the lungs or throat, inhalation of pulverized cinchona bark has been resorted to, and M. Briquet relates,—“*Traité Thérapeutique du Quinquina et de ses préparations*,” p. 118,—that those who work in the storehouses of cinchona bark are sometimes thus cured of malarious fevers. This could only occur through accidental ingestion, and inhalation of the floating particles of bark.

Cinchonia and its salts are the only alkaloids which appear to be volatile by heat. After many experiments, I have finally resorted to the following very simple method of inhaling them:—About forty grains of pure cinchonia, being mixed up with sand, and placed in a capsule, and heated by a spirit-lamp. The sand is useful in diffusing the heat, and preventing too rapid a destruction of the alkaloid. A heat of about 300 degrees melts the particles of cinchonia into a brown fluid, and from this, if the evaporation be carefully managed, the volatilized alkaloid escapes in the form of a gray vapor.

When a microscope glass is held over the capsule, and the heat is too elevated, the cinchonia decomposes, and a dark red gummy-matter, with the odor of burned benzoin, adheres to the glass. A rather lower temperature drives off the cinchonia in a gray vapor, which may be made to re-deposit the pure alkaloid upon the interior of a funnel held over it, or upon a microscope slide. The alkaloid thus obtained is in branching needles.

On a number of occasions, I inhaled the vapors of cinchonia, often breathing them for ten or twenty minutes, without much inconvenience, when care was taken to regulate the supply of heat. The brown or reddish volatile substance which is given off when the heat used is too great, so irritates the throat as to cause nausea, and oblige the patient to cease inhaling.

When carefully inhaled, a part of the alkaloid is deposited on the throat and in the mouth, where its sub-bitter taste is soon perceived. To guard against error, which might arise from swallowing these portions of the alkaloid, I refrained from swallowing whilst inhaling, and frequently rinsed the throat with water.

Upon four occasions, I noted the symptoms caused by the cinchonia

thus employed, taking care to allow the excitement of the system produced by the inhalation to pass away before I counted the pulse. In three instances the pulse *fell*, losing from six to ten beats per minute. In the fourth, the pulse remained a few beats above the normal number. The person on whom these experiments were made is liable to still greater depression of cardiac energy, when under the influence of quinia. At first, it was difficult to separate the ordinary signs of cinchonism from the feelings of cerebral confusion, caused by breathing too rapidly. These sensations, however, were evanescent. At the end of a quarter of an hour, or even less, the head was clear, and within half an hour afterwards the patient felt a quickly increasing headache, with giddiness, and sometimes a feeling as though the brain was swelling into monstrous bulk. These sensations passed away within four or five hours, unless the inhalation was renewed.

Still uncertain as to whether or not the alkaloid entered the blood, I caused a healthy adult, æt. twenty-nine years, to inhale the fumes from forty grains of the heated cinchonia four times in one day. Symptoms of cinchonism were felt only after the first inhalation, which was made at ten A.M.; at twelve M., the second inhalation took place, and at the same time four ounces of clear urine, sp. gr. 1023, were passed. The other inhalations occurred in the afternoon and evening, but none other of the urine passed was saved, until 7 A.M. next day.

The first specimen was examined by Bouchardat's test, the iodated iodide of potassium. This reagent gave a faint but decisive brown precipitate of iodide of cinchonia, when employed in the usual way; when, however, I placed in a test tube a portion of the test solution, and slowly poured upon it the lighter wine, a profuse deposit of the iodide announced the presence of cinchonia in the urine. In the usual mode of making this test—although the precipitate is perceptible enough—it almost immediately redissolves in the urine, which appears to possess a remarkable power of dissolving the iodides of cinchonia and quinia, since when these precipitates are thrown down from an aqueous solution of a salt of either alkaloid, they are found to be very insoluble. The second specimen of urine contained only traces of cinchonia, and twenty-four hours after the last inhalation no evidence of the presence of the alkaloid in the urine could in any way be obtained.

It will be readily seen from what I have said, that I do not anticipate any remarkably valuable practical results from the new mode of administering cinchonia in vapor. The want of the therapeutic power in this alkaloid, when compared with quinia—dose for dose—the difficulty of regulating the heat so as to volatilize, and yet not decompose it, as well as the unpleasantness of the process of inhalation, combine to deprive these experiments of any great practical utility. In a single case of tertian intermittent fever, I employed the inhalation of cinchonia vapor. The patient had no new attack for one month, although no other ulterior measures were employed. The case was a very irregular and uncertain one, and I therefore attach but little faith to this single therapeutic test. I should add that my patient complained a good deal of the effect of the alkaloid upon his glottis and larynx. For a time it altered the tones of his voice very considerably.

In two cases of chronic bronchitis, of long standing, I also used the fumes of cinchonia; one of these dated his first improvement from the use of these inhalations, in which he persisted every other day, for more than two weeks; no other treatment was used until he had been much aided by the means above described. He learned after a time to employ the cinchonia without my aid. The other patient submitted to one inhalation, but declined any further proceedings of a similar character, declaring that the remedy was worse than the disease, only shorter. When we are successful in volatilizing the alkaloid without decomposition, the process of inhalation is not very disagreeable; but when the heat is too high, and the cinchonia becomes altered, it is extremely difficult to continue to breathe it.

The salts of cinchonia are also volatile by heat, but they offer no advantages which do not equally belong to pure cinchonia. The sulphate is quite inadmissible for inhalation use, since sulphuretted gases are given off in small amounts when the heat is too elevated, and decomposition takes place.

The Treatment of Asthma.—We are sure that every physician will be deeply interested in whatever tends to advance our knowledge of that troublesome affection, asthma, and especially in respect to the remedial measures most likely to secure relief to those who are afflicted with it.

“In connection with this subject,” says the Boston Medical and Surgical Journal, “we take occasion to call attention to the instructive lectures of Trousseau, now being translated for the journal by Dr. Abbot, of this city.

We lately had the opportunity afforded us of reading a short treatise, translated from the Italian, upon the use of *compressed air* in the treatment of asthma. This agent has, we believe, been tried in New York city—possibly elsewhere in the United States—but we are not aware with what measure of success. To carry out the treatment, requires an apartment of cast iron, with the apparatus suitable to compress several volumes of atmospheric air into the room prepared for it. The *theory* seems excellent—we should be glad to know how extensively, and with what results this plan of *air-treatment* has been tried in this country. Any facts will be of advantage. We may add that the friend who lent us the little volume referred to, has a strong personal interest in knowing how much reliance can be placed upon this, or upon any treatment. Will those who happen to have heard of, or to have seen any experiments of this nature, with compressed air, favor us with an account of them?”

Ozonometer.—Dr. Lankester exhibited to the Chemical Section of the British Association for the Advancement of Science, at its late meeting in Leeds, an instrument for measuring the constant intensity of ozone. This instrument consisted of two small rollers included in a box, which were moved by means of ordinary clock-work. Over the roller a strip of paper, prepared with iodide of potassium and starch is allowed to revolve, the paper becoming exposed to the air for an inch of its surface

in the lid of the box. Twenty-four inches of paper pass over the rollers in the course of twenty-four hours, and thus registers, by its colour, the intensity of the action of ozone in the atmosphere. By this instrument, the intensity of the ozone for every hour in the twenty-four could be registered, and *minima and maxima*, with an average, ascertained. Dr. Lankester pointed out the importance of ascertaining the presence of ozone, on account of its undoubted relation to health. He drew attention to a series of tables which had been drawn up from the registrations of the anemometer made at London, Blackheath, and Felixstow, on the coast of Suffolk. From these it was seen that the relation of these three places was 0, 22, and 55. The instrument acted also as a clock, and the time could be accurately marked upon the ozonized paper.

Mr. Marshall made some remarks on his own observations during the last twelve months, and stated that he had not been able to discover, though assisted in the investigation by medical gentlemen, that there was any obvious connection between ozone and the state of health.

[*British Medical Journal*.

Sir Benjamin Brodie.—An unfounded report in one of the foreign periodicals soon gained currency that this distinguished member of our profession had been made a member of the House of Peers. This report has, however, served the purpose of awakening the medical men of London to the conviction that they are entitled to a representative in the Upper House, and they will, no doubt, take action upon the subject, and refer it to Lord Derby, who will give the question an impartial hearing. Without this advancement, Sir Benjamin Brodie now has a higher position than has ever before been held by a British surgeon, having been recently elected President of the Royal Society, and President of the Medical Council. We hope that he may attain this higher honor, to which his high scientific and literary attainments most certainly entitle him.—[*North-American Med. Chir. Review*.

Prizes at the Académie de Médecine, for 1858.—The Academy prize of one thousand francs, on the application of the microscope; the Capuron prize, on the death of the infant during parturition; the Civrieux prize, on the difference between neuralgia and neuritis; and the Barbier prize, for the cure of diseases generally thought incurable, have not been adjudged, on account of deficiency of memoirs, or insufficiency of merit.

M. Bauchet obtained the Portal prize, on the pathology, treatment, and diagnosis of ovarian cysts. The Itard prize, for the best work of two years standing, on practical medicine or applied therapeutics, has been adjudged to M. Duchenne. The Argenteuil prize of twelve thousand francs, on the greatest improvement in the treatment of stricture of the urethra or other diseases of the urinary organs, was not awarded to any one author, but was divided in sums varying from four thousand to one thousand francs among six competitors.—[*Ib*.

New Appointments at the Faculty of Medicine of Paris.—The Chair of Anatomy, rendered vacant by the retirement of M. Denonvilliers, has been filled by the appointment of M. Jarjavay. M. Gosselin succeeds M. Cloquet as Professor of Surgical Pathology.—[*Ib*.