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## ORIGINAL AND ECLECTIC.

### ARTICLE IV.

*Observations on Malarial Fever.* By JOSEPH JONES, A.M., M.D.,  
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[Continued from page 743 of November No. 1858.]

CASE XXXVIII.—Irishman: age 28; height 5 feet 7 inches, weight 140 lbs.; dark brown hair, brown eyes, dark complexion—has been in America eight years, and in Savannah nine months. Engineer on steam-tug running up and down the Savannah river. One month ago was discharged from the steam-tug, and commenced “day labor” along the wharves, and at the saw-mill. Habits intemperate. Has been sick one week. Says that three days ago he took a large dose of castor oil, which operated ten times. On the following day took three blue pills, and yesterday took another dose of castor oil, which has been operating up to the present time.

August 24th, 1857, 1 o'clock P. M. Has just entered the hospital. Skin cool; tongue coated with yellow fur; pulse 120; complains of great weakness.

R. Sulphate of quinia, grs. xv.; infusion of Virginia snake-root, f 3 xvi. Mix. f 3 ij. every two hours. Diet, gruel.

August 25th, 12 o'clock M. Complains of great pain in his back; surface of trunk and extremities cool; tongue dry at tip and centre, and coated with yellow fur; no tenderness upon pressure of epigastrium; bowels loose.

R. Stop sulph. of quinia and infusion of Virginia snake-root.

R. Calomel grs. xij.; James's powder (pulvis antimonii compositus) grs. xxij. Mix, and divide into six powders. Administer one powder every three hours. If extremities continue cool, apply mustards.

August 26th, 12 o'clock M. During the afternoon of yesterday was very feeble, and at one time was almost pulseless. The nurse administered brandy. This induced reaction. Now, skin of trunk and extremities cool and moist; complexion pale, sallow; lips and gums very pale; tongue coated with yellow fur, and dry at tip; pulse small and weak—so feeble that it is with difficulty that it can be felt at all. Pulse 120; respiration 22. Temperature of hand  $95^{\circ} 5$  F.

R. Burnt brandy and infusion of Virginia snake-root. Apply shifting sinapisms to extremities. Diet, arrow-root and brandy.

8 o'clock P. M. Pulse a little stronger, but still very weak, 112; surface of trunk and extremities warmer; tongue cleaning off towards the tip—the clean portion is very red, dry and glazed. Has no pain, and rests quietly—appears to be very weak.

R. Continue brandy and infusion of Virginia snake-root.

August 27th, 12 o'clock M. Pulse 120, larger in volume, but still very feeble and with difficulty counted; respiration 24; skin a little warmer. Temperature of atmosphere,  $87.5^{\circ}$  F.; temp. of hand, 98; temp. under tongue, 98.5. There is a great want of co-ordination between the actions of the circulatory and respiratory systems. Says that he is very weak—his appearance is that of complete exhaustion. Superior portion of the tongue coated with dry, yellow fur—a lozenge-shaped space of the surface of the tongue extending for one inch, from the tip to the centre, is clean and of a brilliant red color. Teeth coated with sordes; hands and tongue tremulous—says that he feels very weak. Has no pain anywhere, and lies quiet.

R. Stop the calomel and James's powder. R. Sulph. of quinia, grs. ij. every two hours up to grs. xvi. Continue brandy and infusion of snake-root.

Urine, orange-colored, several shades higher than in health, but much less highly colored than usual in severe cases of malarial fever. Reaction slightly acid; sp. gr. 1009—contained, as usual in uncomplicated cases of malarial fever, no albumen and no grape sugar. Amount of urine collected during the last 24 hours, grains 16,144. The nurse states that this is the whole amount that has been passed.

ANALYSIS LXI.	Urine excreted in 24 hrs. grains 16144 contained grains,	1000 parts of Urine contained,
Water, .....	15745.336	975.306
Solid Matters, .....	398.664	24.674
Urea, .....	170.610	10.499
Uric Acid, .....	A trace, scarcely visible.	A trace.
Extractive and Coloring Matters, .....	203.683	12.560
Fixed Saline Constituents, .....	24.161	1.496

7 o'clock P. M. Much worse. Pulse 140, feeble; respiration 40, labored, panting. Extremities feel cold. Temperature of hand, 90°. Restless; groans and sighs frequently; inclined to stupor; intellect sluggish. When aroused, appears to be sensible, but articulates with great difficulty. The heart appears merely to flutter—the sounds are so rapid and feeble that they are counted with difficulty. The circulation in the capillaries is sluggish and feeble. The temperature, the index of the chemical changes of the elements of the solids and fluids, is below the normal standard and does not correspond with the frequency of the circulation and respiration. No pain upon pressure of epigastrium. Asks for water continually, and complains of much thirst. The nurse has just raised him up to administer brandy: he groans, and tosses about the bed and makes several ineffectual efforts to rise. In a few moments he is quiet, and apparently asleep.

*This patient died thirty minutes after this observation.*

(10). AUTOPSY TWELVE HOURS AFTER DEATH.

*Exterior.*—Body muscular, with well developed limbs and prominent chest; trunk and limbs round and not emaciated; adipose matter not wasted; color of muscles, when the integument was removed, red and normal. Color of the skin of the superior parts of the corpse, pale, bloodless. Color of the skin of the inferior parts of the corpse, of a dark purple. This dark purple color gradually diminished towards the superior parts of the body, and appeared to have been due to the gradual settling of the blood in the capillaries of the most dependent parts, towards the close of life, when the general and capillary circulations were feeble. Lips and gums very pale, almost white; teeth loaded with sordes.

*Head.*—Dura-mater unusually thick and firm, and adherent in several places to the arachnoid membrane. The thickening of the dura-mater and the adhesions were of long standing, and were not connected with this attack of malarial fever. Blood-vessels of the dura-mater filled with blood.

Arachnoid membrane opalescent, pearl-colored, and in many places adherent to the pia-mater. These adhesions, like those between the dura-mater and arachnoid membrane were apparently of long-standing. Between the arachnoid membrane and pia mater, bloody serum was effused, thus imparting to these membranes (especially the inferior portions from the gravitation of the blood) a red appearance.

Blood-vessels of pia-mater were filled with blood. The blood-vessels of those portions of the pia-mater which extended into the ventricles of the brain, were also engorged with blood. The ventricles of the brain contained a small quantity of clear serum.



Structure of cerebrum appeared to be softer than normal. This softening may have been the result of partial decomposition. Blood-vessels in the substance of the brain, distinct, and more engorged with blood than usual.

Structure of cerebellum, medulla oblongata, and superior portion of spinal cord, appeared to be normal. Blood-vessels of spinal cord appeared to be more congested with blood than usual.

CHEST.—*Heart*, normal in structure; contained several clots of blood, which, from their ragged appearance, light yellow color, and freedom from colored blood-corpuscles, must have been formed before death. Long, fibrous coagula were found in the aorta and vena cava.

*Lungs*.—Old adhesions in several places. Numerous small tubercles were scattered throughout the tissues of the lungs: the tubercles did not appear to have suppurated. During his sickness, this patient showed no signs, either in appearance or in action, of the existence of these tubercles.

Superior portions of the lungs (leaving out of view the tubercles) were normal in color and density. The inferior portions were engorged with blood, and the most dependent portions were almost black from the great engorgement of the blood-vessels and capillaries, and when cut, resembled in appearance and density portions of liver. The accumulation of blood in the lower portions of the lungs was due to the action of gravity, during the feeble state of the circulation previous to death. The chemical changes of the elements of the blood and tissues had been greatly diminished, previously to death; the physical forces resulting from these chemical changes, which propelled the circulatory apparatus and worked all the machinery, were correspondingly diminished, and the blood gradually obeyed the physical law of gravity, which, although constantly acting during health, was counterbalanced by the physical forces, developed by the chemical changes of the elements of the organism.

ABDOMEN — *Liver*, normal in size, and of a slate color externally, and of a dark bronze color internally. Substance firm. When pressed, the dark yellow, greenish bile flowed out in small quantities from the cut ends of the hepatic ducts. Blood-vessels of the liver appeared to contain more than the normal quantity of blood. Blood of liver, dark purplish brown, and did not change to the arterial hue when exposed to the action of the oxygen of the atmosphere.

*The liver contained animal starch, but no hepatic sugar.*

Under the microscope, the cells of the liver appeared normal, with the exception that many of them contained more oil globules than usual.

The gall-bladder was filled with bile, which was of a dark

brownish green, when seen in mass, and of a gamboge color, when viewed in thin layers. The surface of the gall-bladder was of this gamboge color, from the endosmosis of the bile, probably after death.

*Spleen*, enlarged; color, dark slate, two shades darker than the liver. Tissues of spleen softened, partially disorganized. When the organ was pressed gently between the fingers, it was evident that the tissues gave way.

Mud of spleen, of a dark purplish-brown color. This dark color was not altered, notwithstanding that it was exposed to the action of the atmosphere for 24 hours. When first removed, the mud of the spleen coagulated slightly—the coagulum, however, possessed no consistency, and was readily dissolved. When the mud of the spleen (pulp and extravasated blood) was examined under the microscope, it was found to consist of colored and colorless blood-corpuscles, and numerous granules of a black color. These black granules were frequently conglomerated together, forming dark flakes, like the coffee-ground sediment of the black vomit of yellow fever. Many of the colored corpuscles appeared to be swollen. The colorless corpuscles appeared to be more numerous than normal.

**ALIMENTARY CANAL.**—*Stomach*, contained no fluid or gas; blood vessels upon the exterior filled with blood; mucous membrane of stomach of a dark purplish color. The color of the mucous membrane was not uniform, it was much deeper in some spots than in others, thus presenting a mottled appearance.

The compound muciperous follicles (Brunner's glands) of the stomach and duodenum, were prominent and enlarged.

Blood-vessels of the superior and inferior portions of the intestinal canal appeared to be more engorged with blood than those of the middle portions. The mucous membrane of the small intestines was covered by a layer of mucus and fecal matter, colored yellow by the bile.

The solitary glands in the inferior portion of the ileum, and especially in the region of the ileo-cæcal valve, were enlarged and distinct.

The glands of Peyer were distinct, but not enlarged or inflamed.

The serous membrane of the intestines bore the marks of an old inflammation. The serous membrane was thickened, and organized bands of coagulable lymph in many places bound the large and small intestines together, and to the walls of the abdominal cavity. This inflammation had nothing whatever to do with the present attack.

*Kidneys.*—Normal in size and structure—blood had settled in the vessels and capillaries of the inferior dependent portions. *Color of superior portions of kidneys normal; color of inferior dependent portions almost as dark as the slate-colored liver.*

The blood-vessels and capillaries of the cellular tissue of the posterior dependent walls of the abdominal cavity were engorged with blood, whilst those of the upper anterior and lateral walls were almost devoid of blood. This was due to the action of gravity upon the enfeebled circulation. The facts which we have presented, show that the capillary circulation had been greatly enfeebled in every organ and tissue, previous to death, and the blood necessarily accumulated in the most dependent blood-vessels and capillaries. This view is farther confirmed by the fact, that the vena-cava contained but little blood.

The bladder contained 5000 grains of light colored urine.

Reaction acid. Sp. Gr. 1008.7. After standing 48 hours no deposit was thrown down. This was also true of the former specimen of urine.

ANALYSIS LXII.	Grs. 5000 of Urine, contained grains,	1000 parts of Urine contained,
Water,.....	4863.140	972.628
Solid Matters,.....	136.860	27.372
Urea,.....	38.945	7.789
Uric Acid,.....	0.240	0.048
Extractive and Coloring Matters,	88.005	17.601
Fixed Saline Constituents,.....	9.120	1.824

#### CONCLUSIONS.

(1). The slate colored liver—the dark greenish brown bile—the absence of grape sugar, and the presence of animal starch in the liver—the slate-colored, enlarged, engorged, softened spleen—demonstrated that this was a case of malarial fever.

(2). The rapid but feeble action of the heart—the rapid but feeble pulse—the depressed temperature of the trunk and extremities—the dry red tongue—the complete exhaustion of the muscular and nervous force—the acid light-colored urine—the feeble general and capillary circulation, gradually overcome by the action of gravity—the gradual settling of the blood previous to death in the blood-vessels of the most dependent parts of all the organs and tissues—the alterations of the blood corpuscles of the liver and spleen—the alterations in the color and constitution of the bile—the destruction of the special ferment in the blood which converted the animal starch into grape sugar—demonstrated that the malarial poison, had not only interfered with the action of the cerebro-spinal system, but had also affected the sympathetic system, and produced profound alterations in the structure of the nutritive fluids and correspondingly interfered with the chemical changes, the developement of the forces, and the formation of the secretions and excretions.

(3). The rapid exhaustion of the forces were, without doubt, due, in a great measure, to the severe purgation to which this patient had been subjected, previous to his entrance into the



hospital, and to his previous intemperate habits, and to the presence of tubercles in the lungs. The administration of large doses of purgative medicines (castor oil and blue pills) without any sulphate of quinia, and without any stimulants, converted an ordinary case of malarial fever into a congestive malarial fever. The term *congestive*, as applied to this case, means nothing more than a state of exhaustion, inability to resist the action of the malarial poison, inability to react.

(4). The plan of treatment in this case was correct in principle, but radically deficient in energy. Stimulants were administered, but not in sufficient quantities. Sinapisms were used, but not often enough, nor large enough, nor long enough. Sulphate of quinia was administered, but too infrequently and in too small doses, to be efficient, and much valuable time was wasted. This case demanded prompt and vigorous action. Large doses of the sulphate of quinia and the most diffusible and powerful stimulants should have been promptly and frequently administered, and the extremities should have been repeatedly covered with sinapisms. We hope to demonstrate, by future cases, that the patient would have stood a much better chance of recovery under this mode of treatment.

CASE XXXIX.—German, aged 27; height 5 feet 9 inches; weight 160 lbs.; brown hair, blue eyes, florid complexion; thick-set, stout and muscular; thick short neck; person filthy; habits intemperate. Last winter and spring he was in the hospital with a large ulcer upon the leg. Has been working for three weeks in a malarious locality, near Lover's lane, on Thunderboldt road. Has been much exposed to the hot sun and cold night air.

August 21st, 1 o'clock P. M., 1857. Entered the hospital yesterday afternoon, at 4 o'clock P. M. The nurse states that during the night he appeared to be out of his head, and would frequently start out of bed with a loud shout. Complained bitterly of his head. Had two convulsions during the night, one at 12 o'clock M., and the other at 2 o'clock P. M.

Now, 1 o'clock P. M., this patient appears to be suffering intense agony in his head and has a hot fever. Both hands are clasped around his head and he tosses violently about in his bed. Every breath is accompanied with a deep groan, and an exclamation about the pain in his head. He is unable to give a coherent answer.

Applied immediately four cut-cups to his head, (two to back of neck and two to temples); also a large mustard plaster, over his epigastrium, and one to each leg. Abstracted  $f\frac{3}{4}$  xvij. of blood in the standing posture, until he fell back upon the bed, completely exhausted. The loss of blood was attended with

almost immediate relief of the pain in his head. The burning heat of the head and skin was almost immediately diminished, and the dry and parched skin was soon covered with perspiration. The pulse and respiration were diminished in frequency. Respiration 39; Pulse 92. Temperature of atmosphere 80° F.; temp. of hand, 89; temp. under tongue, 97. The temperature under the tongue is 3°, and the temperature of the extremities is 9°, below the normal standard. The temperature was not ascertained by the thermometer before the abstraction of the blood, owing to the great suffering and restlessness of the patient, but judging by the sense of touch, it is evident that the temperature has diminished rapidly since the abstraction of blood. The wild and restless glances of his eye, and the violent tossing of his body, have ceased; the pain in his head has almost entirely disappeared, his intellect is calm, and he converses rationally.

Tongue thickly coated with yellow and black fur, tip and edges clean and of a scarlet color. Previous to the bleeding, the tongue was dry, rough, and when the fur was absent, glazed—now it is more moist, but still much dryer than normal.

He states that the fever came on three days ago, with a chill, and pain in the head; and that it has continued unabated, up to the present time. Says he took blue pills and oil yesterday morning, before entering the hospital, which operated freely. His testicles are much swollen and the scrotum is very red and inflamed, and the cuticle is abraded in several places. Complains of great thirst.

R. Citrate of potassa, ʒi.; Bicarb of potassa, ʒi.; water, fʒxviiij. Drink ad libitum.

August 22d, 12 o'clock M. Head is well. Has not complained of his head since the abstraction of blood. Superior portion of tongue, coated with thick, dry, yellow fur, inclining to black in the centre. Tip of tongue clear, bright red, dry and glazed. Complains of an unquenchable thirst. Lies quietly. Respiration 52, hurried, labored, thoracic, striking the attention of the most casual observer. Pulse 112. Skin of trunk feels hot to the hand. Temperature of atmosphere, 81° F; temp. of hand, 99.; temp. under tongue, 104. Epigastrium very tender upon pressure.

R. Blister, 6 inches by 6 inches, over epigastric region. R. Calomel, grs. v.; Rhubarb, grs. viij. Mix. Gruel and Flaxseed tea.

August 23d, 12 o'clock M. Says that his head is much better and that he feels perfectly well. Blister has drawn; serum from the blistered surface of a golden color. Medicine operated four times; evacuations small. The tongue presents the same appearance. Tenderness of epigastrium greatly diminished. Pulse 72. Respiration 34, thoracic, labored. Skin cool. Temperature



of atmosphere 78°F.; temp. of hand, 89; temp. under tongue, 96 to 96.5. The temperature under the tongue appeared to be variable, rising and falling between 96 and 96.5. There is a great want of co-ordination between the circulation, respiration, and the chemical changes.

R. Calomel, grs. xij.; James's powder (pulvis antimonii compositus), grs. xxij. Mix and divide into six powders, and administer one powder every three hours in a tablespoonful of snake-root tea. Sponge skin with salt dissolved in dilute alcohol. Diet, gruel and gum water.

August 24th, 9½ o'clock A. M. The nurse states that he has been restless during the night and apparently out of his head. Several times he sprang out of the bed with a loud shout. At one time he insisted that he was perfectly well, and affirmed that he was going down to the hotel to get a cup of coffee, some boiled eggs, and a good drink of brandy.

Now, his respiration is spasmodic, 40 to the minute. Pulse cannot be felt. Have administered brandy, but he is unable to swallow or to articulate.

*He died 15 minutes after this observation.* His death struggles were severe and distressing. Deep and violent inspirations and expirations; mouth filled with froth, which was scattered in every direction with the violent expirations.

#### (11). AUTOPSY FOUR HOURS AFTER DEATH.

*Exterior.*—Stout and muscular; limbs full. There had been no wasting of the tissues; skin sallow.

*Head.*—When the skull-cap was removed, f 3 ij. of blood flowed from the interior of the cranium.

Blood-vessels of dura-mater filled with blood.

Arachnoid membrane opalescent, pearl colored. Blood-vessels filled with blood. There was a small quantity of yellow serum effused between the arachnoid membrane and pia-mater.

Blood-vessels of pia-mater, engorged with blood.

Substance of the brain was softer than usual. Upon the cut surface were seen the cut extremities of numerous blood-vessels, filled with blood. The lateral ventricles of the brain were nearly filled with yellow serum. Blood-vessels of pia-mater of ventricles engorged with blood. Blood-vessels at the base of the brain and superior portion of the medulla-oblongata, greatly distended with blood. The blood-vessels at the base of the brain appeared to be more distended with blood, than those of the superior portions of the brain.

*Chest.*—Lungs normal.

*Heart.*—Normal in size. The exterior of the right auricle and ventricle showed incipient fatty degeneration. Weight of heart, grs. 5025, equals ozs. 11½. The auricles of the heart and the sinuses of the brain, contained small clots.

ABDOMEN.—*Liver*—exterior, slate-colored; cut surface dark bronze color. When the liver was pressed, dark-colored blood, and green biliary matter oozed out from the cut surface. Blood-vessels of liver filled with blood. When the hepatic veins were cut across, several fluid ounces of blood gushed out. The blood of the liver did not assume the arterial hue when exposed to the oxygen of the atmosphere. Structure of the liver firm and apparently not altered in consistency.

Under the microscope, the cells of the liver appeared to be normal. There was a deficiency of oil globules and of the peculiar granules, so common in the secreting cells of the liver. Subjected to the action of acetic acid, nothing peculiar was observed in the liver-cells.

The liver was carefully tested for hepatic sugar—the action of the appropriate chemical re-agents, demonstrated that it was entirely absent. When a drop of a solution of grape-sugar was added to the filtered decoction of the liver and tested with the same chemical re-agents, the presence of the grape-sugar was promptly and decidedly indicated. This experiment shows that the failure of the re-agents to manifest the presence of grape-sugar in the liver was absolutely and unequivocally due to its absence.

Animal starch on the other hand was detected in all parts of the liver. When the liver was boiled, or subjected for several hours to the action of a strong solution of caustic potassa, it was completely dissolved, and the solution assumed a deep purple color, when seen in mass, and a bright pink color, in thin layers.

*Gall Bladder*, was partially filled with bile, of a blackish green color, when seen in mass, and of a gamboge yellow, in thin layers. Weight of liver, lbs. 5, equal grains 35000.

*Pancreas*, somewhat enlarged and indurated. This affection of the pancreas was not connected with this attack. Weight of pancreas, ozs.  $3\frac{1}{2}$ , equals grs. 1525.

*Spleen*, of a dark slate color, enlarged and disorganized. To the touch, the spleen felt like a sack, filled with a viscid fluid. The capsule was torn upon the least exertion of force. Whilst gently lifting the spleen, in order to sever its attachments, and lift it out of the abdominal cavity, the capsule was torn off for the space of several inches, and my fingers, which grasped the organ, plunged through the disorganized trabeculæ and pulp. When the spleen was laid upon the table and pressed, the mud within was forced into other portions, and the indentation remained, thus showing that the cells of the spleen communicated freely with each other.

The spleen was filled with a substance resembling purplish black mud. This splenic mud was very thick, and dried rapid-

ly when spread upon glass slides. Under the microscope, this was found to consist principally of colored blood-corpuscles. Many of the colored blood-corpuscles presented an altered appearance. In some cases the color appeared darker than normal. Many of the corpuscles were swollen, whilst others were corrugated. That the colored corpuscles had undergone some change, was conclusively demonstrated by the fact, that the color of this splenic mud did not alter during 36 hours exposure to the oxygen of the atmosphere. The splenic mud also contained numerous granules. The number of colorless corpuscles were apparently diminished. This diminution was in all probability relative and not absolute; they appeared to be diminished relatively to the immense number of colored blood-corpuscles. Weight of spleen, ozs.  $13\frac{1}{2}$ , equals grs. 5895.

*Kidneys*, pale, but normal in structure; much fat in the pelvis and infundibula of the kidneys. Weight of kidneys, ozs. 11, equals grs. 4812.

ALIMENTARY CANAL.—*Stomach*—Mucous membrane corrugated and of a purplish color, varying in intensity in different spots.

The stomach contained  $f\ 3\ viij.$  of a dark greenish-black fluid, which resembled, upon a general view, the black vomit of yellow fever. Under the microscope this fluid was found to contain, numerous mucous corpuscles, epithelial cells, of the mucous membrane and gastric glands, peptic cells and dark granules. These various bodies were of a greenish and yellow color, under the microscope. The action of nitric acid demonstrated that the color was due to the presence of bile. The color of a mass of this fluid from the stomach, was like that of the bile from the gall-bladder, of a dark blackish-green color, whilst the thin layers, like those of the bile, were of a yellow color. I was unable to distinguish any colored corpuscles, notwithstanding the close resemblance to black vomit. The granules did not resemble altered blood-corpuscles.

*Small Intestines*.—Mucous membrane covered with mucous corpuscles and epithelium, colored yellow by the bile; color of mucous membrane darker than usual. Blood-vessels of the inferior portions of the small intestines, especially in the region of the ileo-cæcal valve, engorged with blood.

Neither the glands of Peyer, nor the solitary glands, were enlarged.

Blood-vessels of colon filled with blood.

Exterior surface of rectum, diversified by numerous ecchymosed spots, of a bright arterial hue.

The blood poured out into the abdominal cavity from the cut vessels, coagulated and formed a firm clot.



## CONCLUSIONS.

(1). This case corresponded to that type of malarial fever, which is called by many practitioners *congestive* fever.

(2). After the abstraction of blood, there was no correspondence between the circulation, respiration and chemical changes. Before the abstraction of blood, there was a rapid pulse—rapid, full, thoracic respiration and dry, hot skin and dry, red tongue, accompanied by violent pain in the head. After the abstraction of blood and the application of mustards, there was a slight reduction of the frequency of the respiration and circulation, and a great reduction of the temperature of the trunk and extremities—the temperature of the extremities was reduced  $9^{\circ}$  below that of health—the pain in the head vanished—the tongue became a little more moist, but none the less red. To a casual observer, the disease would appear in a great measure to have been conquered by the abstraction of blood: the symptoms, however, were only moderated. The congested blood-vessels of the brain were relieved, and the pain arising from the chemical changes and the rapid circulation of the altered blood, through the blood-vessels of this delicate organ, was correspondingly diminished. The temperature of the trunk rose  $5^{\circ}$  above the normal standard, on the next day, whilst that of the extremities just reached the normal standard. This increase was attended by a far greater acceleration of the respiration and circulation, than was necessary, in health, to produce this increased chemical change.

We have before shown that, if the functions of the organs and apparatus be properly performed, a full, rapid and vigorous circulation and respiration must be attended by the rapid absorption and distribution of oxygen, and corresponding rapid chemical changes.

In this case, we had the rapid circulation and respiration, but a want of corresponding chemical change, and hence conclude, that the malarial poison has acted, either by inducing directly such changes in the blood, as to prevent its absorption of oxygen, or to prevent the rapid action of the oxygen absorbed, or by interfering with the metamorphoses of the solids and fluids of the organs and tissues and nutritive fluids, or by a direct action upon the nervous centres of the sympathetic system, which preside over the chemical changes in the lungs and all the organs and tissues, independent of all previous changes of the blood, or primarily by direct action upon the nervous centres of the cerebro-spinal system, and secondarily, by reflex action upon the sympathetic system.\*

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\* This last mode of action, would be the true excito-secretory action, so ably discussed by our friend and colleague, Dr. Henry F. Campbell, Professor of Anatomy in the Medical College of Georgia. See "Essay on the Influence of Denti-

We conceive that either one of these modes of action would be sufficient to have produced the subsequent phenomena. It is probable that the malarial poison acted simultaneously in all the modes stated, but chiefly by direct alteration of the elements of the blood.

(3). The treatment of this case was radically defective. The blood-letting was proper as a means of relieving the brain, but not as a remedy applied alone, to combat the action of the malarial poison. The blood-letting relieved the brain, but the poison went on acting, altering the chemical relations of the elements of the blood and liver and spleen, more rapidly than ever. Here we have the cerebro-spinal difficulty apparently relieved, whilst the war is raging in the domain over which the sympathetic system is said especially to preside. There was a calm, but it was the calm of conquest—the calm of exhausted nature. The mighty foe carried forward the work of destruction without noise or confusion, because all opposition was levelled, all resistance was subdued. This state of things demanded prompt and vigorous action on the part of the physician. Those remedies should have been administered which would have aroused the capillary circulation—aroused the sympathetic and cerebro-spinal system of nerves, and accelerated the absorption, and distribution and action of oxygen and the chemical changes of the nutritive fluids and organs and tissues, which are the sources of all the forces which work the machinery, and without which we can have the manifestation of no vital phenomena. Brandy, sulphate of quinia, in large doses, and carbonate of ammonia should have been promptly and freely administered, and sinapisms applied.

We hope to show that, although the plan of treatment pursued in this case, when placed in this strong light, is radically defective, still it is one which has been, and is now, extensively employed, and recommended by men of influence in the profession.

CASE XL.—Irish laborer; height 5 feet 10 inches, weight 150 lbs.; black hair, black eyes, dark complexion, resembles an Arab in appearance; person dirty and filthy.

Sept. 2d, 1857, 12 o'clock A. M. Has been sick, on the bay, for 10 days, with an abscess in the palm of his hand. Previous

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tion in Producing Disease," by H. F. Campbell, M. D. (Southern Medical and Surgical Journal, new series, vol. vi., No. 6, June, 1850, p. 321.)

"An Inquiry into the Nature of Typhoid Fevers, based upon a Consideration of their History and Pathology," by H. F. Campbell, M. D. (Transactions of the American Medical Association, for 1853.)

See his "Prize Essay, on the Excito-Secretory System of Nerves," Also, his "Classification of Febrile Diseases by the Nervous System." (American Transactions, vol. xi. 1858.)

to this, had been working on the river bank. When first brought (this morning) into the hospital, he appeared to be stupid and urinated in his bed. After the administration of a hot bath, and the lancing of his hand, he was aroused, and now appears to be entirely restored to the exercise of his intellect. Seems to be very weak and complains of no pain, or trouble anywhere, except in the palm of his hand. Skin not warmer than usual; tongue dry, red and glazed, and harsh and rough to the touch. Pulse 82.

R. Infusion of Virginia Snake-root. Diet, gruel.

7 o'clock, P. M. Much better. Converses freely, and complains of nothing.

R. Sulph. of quinia, grs. v., every three hours, up to grs. xv. Continue infusion of Virginia snake-root tea.

Sept. 3d, 12 o'clock, M. Says that he is much better and converses freely. Supposing that the affection of the hand, and probably, neglect, and intemperance, were his only troubles, the state of his pulse and respiration and tongue were not ascertained, and he was passed by with the simple direction to continue the infusion of Virginia snake-root tea.

3½ o'clock, P. M. I was summoned hastily, and found this patient insensible, with his mouth open, and groaning loudly with every breath. His groans sounded very much like the barking of a dog. Countenance distressed, anxious and expressive of great agony; tendons twitching violently; teeth coated with sordes; tongue dry, red and glazed, and harsh to the feeling. Respiration 40, thoracic, panting. Pulse 104. Temperature of hand 103°F. Skin hot, dry and rough. When the attempt is made to arouse him, by violent shaking and loud talking, he mutters incoherently. Great tenderness upon pressure of epigastrium; cries out, whenever this region is pressed.

R. Blister over epigastric region, 6 inches by 6 inches.

R. Two cut-cups to back of neck, and one to each temple. Sinapisms to extremities. Brandy, infusion of Virginia snake-root, and sulphate of quinia.

8 o'clock, P. M. The remedial agents have made no impression. Continues in the same condition, except that he is weaker and his groans are not so loud. Respiration 44, thoracic. Pulse 124. Temperature of Atmosphere, 79°5F.; temp. of hand, 103. Skin dry and harsh.

R. Calomel, grs. xij. Apply blister to calves of legs. R. Continue stimulants.

Sept. 4th, 12 o'clock, M. *The patient has just died.*

The Blister drew, and the serum is of a bright golden color. Several hours before death the whole surface of his body assumed a golden yellow color. Urine discharged during the last 24 hours, copious and only a shade darker than normal.



## (12). AUTOPSY THREE HOURS AFTER DEATH.

*Head.*—When the skull-cap was removed, the dura-mater, presented the usual appearance. Serous effusion had taken place between the dura-mater and membranes and surface of the brain. f 3 iij. of bloody serum flowed from the base of the brain.

The arachnoid membrane was but slightly opalescent—in most places it was perfectly transparen. There had been an effusion of golden colored serum between the arachnoid and pia-mater.

The blood-vessels of the pia-mater were filled with blood.

Blood-vessels at the base of the brain and upon medulla oblongata and spinal chord, more engorged with blood, than those upon the superior portions of the brain. This was without doubt, due solely to the effect of gravity.

The substance of the brain possessed the usual consistency, and appeared to the naked eye, to be normal in structure.

*CHEST.*—*Lungs* normal; trachea filled with froth.

*Heart*, normal. Weight of heart, grs. 5687, equals 13 ozs. The right auricle contained a large golden colored clot, which filled almost the entire cavity. The left auricle contained several small yellow clots.

The right ventricle contained several small clots of blood, which resembled, in all respects, coagulated blood. The main trunk of the pulmonary arteries, contained a long, flattened, riband-like, yellow clot, which extended, not only through the large trunk, but divided and sent off branches to each branch of the pulmonary artery; and these again sub-divided and sent branches off to the minor branches of the arteries. When the main clot in the pulmonary artery was gently pulled, the branches were drawn out 12 inches in length, and at their extremities were not much larger than a fine silk thread. The clot was almost entirely free from red corpuscles, of a yellow color, and firm and elastic, and in appearance resembled an organized product. A similar riband-like, yellow, elastic clot, extended through the whole length of the aorta. The blood in the vena-cava was coagulated, but the coagulum was like that of ordinary blood, and much less firm than the clots of the right auricle, pulmonary arteries and aorta.

*ABDOMEN.*—*Liver*, exterior, slate-colored; cut surface of a dark-reddish bronzed color. The consistency of the structures did not appear to have been altered. Blood-vessels filled with blood. Hepatic vessels contained dark bile. Blood of liver of a purplish and brownish-red color, and did not change to the arterial hue, when exposed to the oxygen of the atmosphere.

The liver-cells, under the microscope, presented the normal appearance.

The liver contained much animal starch, but no hepatic sugar.

The liver was set aside for 24 hours, and again tested for glycogenic hepatic matter (animal starch) and hepatic sugar, with the same result—*an abundance of animal starch, and no grape sugar*. The liver contained much blood, and yet, the glycogenic matter remained unchanged, thus showing that the special ferment which converts this substance into hepatic sugar had been destroyed. Weight of liver, grs. 35875, equals lbs. 5, ozs. 2.

*Spleen*—Slate colored, softened, disorganized; could not be removed without rupture of its substance. The capsule and trabeculæ appeared to be completely altered in structure—so much altered in structure that the slightest touch was sufficient to rupture them. After careful washing under a stream of water, the trabeculæ presented a red color. The cells of the spleen appeared to be all connected with each other.

The pulp of the spleen was of a dark-reddish and purplish-brown color, and consisted principally of red corpuscles. This mud of the spleen did not change its color during 48 hours' exposure to the oxygen of the atmosphere.

The pulp of the spleen and the fibrous tissue of the trabeculæ and blood-vessels of the spleen contained animal starch. Weight of spleen, 12687, equals lb. 1, ozs. 13.

*Kidneys*, normal. Weight of kidneys, grs. 5026, equals ozs. 11½.

ALIMENTARY CANAL.—*Stomach*, distended with gas. Mucous membrane discolored by yellow bile, and diversified with punctated spots of a brilliant red color.

*Small Intestines* contained bile and feces, which were extraordinarily offensive. The calomel and oil, administered previous to death had commenced to operate. When the feces and epithelial cells, colored yellow by bile, were scraped off, the mucous membrane presented the normal appearance.

The glands of Peyer were remarkably large and distinct—several of them were three inches in length; their surfaces were pale, and exhibited no marks of inflammation.

#### CONCLUSIONS.

(1). This case illustrates the fearful power of the malarial poison, and the necessity of a careful examination of every case of disease occurring during the summer and fall months in a malarious district. This patient, at first, appeared to be suffering only from a local inflammation, and complained of no previous sickness and no pain, except the abscess in the palm of the hand. His companions, who brought him to the hospital, stated that they believed this to have been the only source of pain and sickness.

(2). This case illustrates the importance of always attending strictly to the indications and relations of the pulse, respiration

and temperature, and the condition of the skin and tongue. Throughout this case, the tongue was red, dry and glazed, and there was a want of co-ordination between the pulse, respiration and temperature.

(3). The red, glazed tongue, and spasmodic, panting respiration, and rapid pulse, and the dull intellect, signified exhaustion, and not inflammation, and was treated as such, but not with sufficient energy. If 60 grains of sulphate of quinia, instead of 15, had been administered to this patient during the forty-eight hours after his entrance into the hospital, it is probable that life might have been preserved. We did not deem it necessary to adopt this course of treatment, because we were misled by the statements of himself and his friends, with reference to the history of the disease. In all cases of fever, occurring in a malarious district, the action of the physician should be based upon the relations of the pulse, respiration and temperature, and the state of the tongue, skin, and the character of the urine, and secondarily, upon the previous history of the case.

CASE XLI.—American seaman, from U. S. cutter, age 24, height, 5 feet 10 inches; weight, 150 lbs.; brown hair, brown eyes. This is his first summer in Savannah. Has been employed as a sailor on the United States revenue cutter, which has been cruising during the summer, up and down the Savannah river.

Ten days ago, the cutter was struck by lightning and was placed in the dry dock, at the ship yard, on the river, east of the city. This ship yard is located on the Savannah river, about five hundred yards from the eastern boundary of the city in a malarious district which was formerly under the rice (wet) culture; now the surrounding low-lands are protected from overflows by dams, and are under dry culture. The banks of the river at this locality, are coated with mud composed in large measure of animal and vegetable matters; the banks and bottom of the canal, in which the ships are floated at high water, also contain large quantities of similar mud. The crew of the cutter slept on board one night after she was placed in dry-dock. The crew consisted of ten healthy seamen, and out of this number six were taken sick in the course of ten days. Whilst the cutter continued in the stream the men were healthy, but as soon as they were exposed to the exhalations of the mud, and low-grounds, they were taken sick.

September 24th, 1857. Has just entered the hospital, and says that he had a slight chill yesterday, followed by fever. Tongue coated with brownish-yellow dry fur. Pulse, rapid; intellect dull. Says that his bowels have not been moved for several days.



R. Calomel, grs. xv.; castor oil in four hours.

Sept. 25th. Medicine acted freely. Has fever. Tongue still coated with fur, but a little more moist. The fur shows a disposition to come off in patches. Pulse accelerated—intellect continues dull.

R. Sulph. of quinia, grs. v., every three hours, up to grs. xv. Soda powders.

Sept. 26th. Has been passing his feces in bed, and lies in a comatose condition.

R. Cut-cups to back of head. R. Sinapisms to extremities; blisters to back of neck and epigastric region. R. Infusion of snake-root, and sulphate of quinia. R. Calomel grs. xxiv.; opium, grs. ij. Mix. Divide into 12 pills, and administer one every two hours.

Sept. 27th. Continues comatose. Pulse 106, small and feeble. The blisters drew finely. *The blisters and sinapisms failed to arouse this patient, and he died this afternoon at 1 o'clock P. M.*

### (13.) AUTOPSY 20 HOURS AFTER DEATH.

*Exterior*—Full; limbs round; subject apparently not at all emaciated; skin of the superior (uppermost) portions of the body presented the usual appearance, whilst the skin of the inferior (dependent) parts presented a mottled, purplish appearance. This was due to the settling of the blood under the action of gravity.

*Head*.—Dura-mater presented the usual appearance.

Arachnoid membrane not opalescent, but presented the usual transparency. Bloody serum was effused between the arachnoid membrane and pia-mater.

Blood-vessels of pia-mater, congested with blood.

Ventricles of brain, almost completely filled with reddish serum. Blood-vessels of the superior portions of the brain more congested with blood, than those of the inferior portions.

Substance of the brain presented the usual appearance and consistency, considering the length of time since death.

*Chest*—Heart and lungs normal.

*ABDOMEN*.—*Liver*.—Color of the exterior appeared to be normal, (perhaps a shade darker than usual), with the exception of two slate-colored spots. The largest of these slate-colored spots was four inches in diameter, and situated upon the anterior surface of the right lobe, whilst the smallest was situated upon the posterior surface of the left lobe. When an incision was made into the surface of the liver, through these spots, the structures presented a bronze color for the depth of a quarter of an inch. In all other parts of the liver, the cut surface presented a color only a shade deeper than normal.

*Spleen*, enlarged, softened, and of a dark slate color.

When the mud of the spleen was exposed to the atmosphere, a part retained the dark-purplish and reddish-brown color, whilst another smaller portion changed to an arterial hue. The difference between these two portions of the splenic mud were clearly seen when a section of the organ was exposed for several hours to the action of the atmosphere. The other portion of the mud of the spleen did not change its color. It is probable that this phenomenon was due to the fact, that the blood had been but recently effused into the spleen. The portions first effused, had lost the power of changing to the arterial hue, whilst those last effused had not lost this power.

Kidneys, normal.

*Alimentary Canal.*—The mucous membrane of the alimentary canal, from the oesophagus to the anus, presented the normal color, and showed no signs whatever of congestion or inflammation.

#### CONCLUSIONS.

(1). This case illustrates the rapid and powerful action of the malarial poison.

(2). The brain and its membranes appeared to be normal, with the exception of the small serous effusion which was entirely inadequate to account for the cerebral disturbance during life—the liver, with the exception of the small spots, appeared to be normal in structure—the affection of the spleen was recent—and the alimentary canal, from the mouth to the anus bore no marks of inflammation, and yet this strong, hearty young man, fell a victim to the malarial poison.

The malarial poison appeared to act in this case, directly upon the nervous centres of the cerebro-spinal and sympathetic nervous systems.

(3). The treatment of this case was radically defective—it was wanting in energy. *The effects of the disease were those of exhaustion, and not of inflammation and excitement. The chemical changes of the elements were interfered with, and the correlation of the forces, as a necessary consequence, was disturbed. The manifest indication was to stimulate the exhausted nervous system, and excite those chemical changes, by which the forces are generated, which work the animal machinery.*

The blisters and sinapisms, and cut-cups, and small doses of sulphate of quinia, were right, as far as they went. The last doses of calomel were decidedly wrong, and worse than useless; they simply worked in conjunction with the malarial poison. Large doses of brandy, carbonate of ammonia and sulphate of quinia, should have been administered promptly and energetically, in conjunction with the blisters and sinapisms. The following case, which resembled this one in all respects, will illustrate, in a forcible manner, these conclusions.

CASE XLII.—Seaman, from the United States revenue cutter, and a shipmate of the previous case, (XLI).; and the remarks which were made with reference to the history of that case, apply also to the present one. Age 26; light hair, blue eyes, florid complexion; height, 5 feet 11 inches; weight, 160 lbs. This is his first summer in these regions.

September 25th, 1857. Has been sick two days, says that he was suffering with a thick eruption of prickly-heat. This disappeared suddenly and then the fever appeared. Has fever now.

R. Calomel, grs. xv.; castor oil in four hours.

Sept. 26th. Medicine acted freely; heat of skin much less; tongue heavily coated with yellow fur, tip and edges very red; intellect dull; appears to articulate with difficulty.

R. Sulph. of quinia, grs. v. every three hours, up to grs. xv. Infusion of virginia snake-root.

Sept. 27th. Intellect still dull; tongue presented the same coated appearance. Pulse 83.

R. Calomel, grs. x.; sulph. of quinia, grs. v. Mix and administer immediately.

Sept. 28th, 10 o'clock, A. M. Was delirious during the night, and it was necessary to use much force to keep him in bed. Appears to be much worse this morning, and continues delirious; tongue, heavily coated and very red at tip and edges. Pulse 86. No pain upon pressure of epigastrium.

R. Blister to epigastrium and back of neck. R. Calomel, grs. xxiv.; opium, grs. ij. Mix. Divide into 12 powders and administer one every two hours.

7 o'clock, P. M. Appears to be very weak and stupid. When aroused by shaking, whines and mutters incoherently. Pulse 82; respiration 20; skin dry; tongue presented the same appearance. *It is evident that unless the calomel be abandoned, and a more vigorous method of treatment adopted, this patient will die just as the previous case.*

R. Two cut-cups to each temple; sinapisms to extremities. R. Brandy, f 3 viij; infusion of Virginia snake-root, f 3 viij; sulphate of quinia, grs. xv. Mix and administer a tablespoonful every half hour. R. Sulph. of quinia, grs. v., every three hours, up to grs. xx.

Sept. 29th, 11 o'clock A. M. The stimulants and sulphate of quinia, have been productive of much good. Tongue, although very red, and dryer and rougher than normal, is moister and softer than it was yesterday. During the night, slept soundly, and this morning his skin relaxed and was bathed in a copious perspiration. Intellect clearer. Pulse 78; respiration 15. Temperature of atmosphere, 80°F.; temp of hand, 99. Has taken during the last eighteen hours, forty grains of sulphate of quinia.



R. Give 20 more grains of sulphate of quinia during the next 20 hours, and continue the brandy and infusion of Virginia snake-root, tsblespoonful every honr. Diet, beef soup, and tea.

7 o'clock P. M. Continues to improve and says that he is much better. The blisters have drawn and discharged golden colored serum. Intellect more active, but still much duller than usual. Tongue red, dry and harsh, feels like sand paper—superior portion coated with yellow fur; face much flushed; reaction of saliva decidedly acid; urine high colored. Pulse, 80; respiration, 16. Temperature of atmosphere, 78.5° F.; temp. of hand, 100.33.

R. Mustard to extremities. Stop sulphate of quinia. Continue brandy and infusion Virginia snake-root. Diet, milk-punch, and brandy and arrow-root.

Sept. 30th. Says, that he is much better. Pulse 79; respiration 16. Temperature of atmosphere, 70° F.; temp. of hand, 97.5; temp. under tongue, 100. Tongue still very red, but more moist. Skin dry; reaction of saliva acid.

Urine, of a bright red color, and decided acid reaction—sp. gr. 1022. Uric acid in 1000 parts, 0.538.

R. Continue stimulants and nutritious diet,

Oct. 1st, 11 o'clock A. M. Rested well during the night, and continues to improve. Complains of great weakness. Tongue much softer. Pulse 70; respiration 14. Temperature of atmosphere, 71° F.; temp. of hand, 98; temp. under tongue, 99.5. Urine only a shade higher colored than normal, reaction acid—sp. gr. 1010. Uric acid in 1000 parts, 0.0099.

R. Continue brandy and infusion of snake-root tea. Administer 15 grs. of the sulphate of quinia during the next 15 hours.

Oct. 2nd, 11 o'clock A. M. Surface of blister red and raw; tongue cleaning off; papillæ enlarged and distinct; bowels torpid. Pulse 60; respiration 13, slow and full. It is probable that the frequency of the respiration is diminished by the blistered surface. Temperature of atmosphere, 76° F.; temp. of hand, 97.75; temp. under tongue, 99.5.

R. Continue stimulants and nutritious diet, milk punch and mutton soup.

Urine, of a bright red color, sp. gr. 1020—turbid after standing several hours. Amount passed during the last 24 hours, grs. 13260.

Oct. 3rd, 11 o'clock A. M. Pulse 62; respiration 14. Temperature of atmosphere, 76° F.; temp. of hand, 98; temp. under tongue, 99.25. Reaction of saliva acid; urine of a deep orange color—heavy, light-yellow deposit after standing a few hours. The acid has greatly diminished—re-action alkaline after standing a few hours. Amount passed during the last 24 hours, grs.

15330; sp. gr. 1022. Uric acid in grs. 15330 of urine, grs. 10.5. Uric acid in 1000 parts of urine, 0.684. Bowels have not been moved for four days.

R. Calomel, grs. viij.; sulph. of quinia, grs. v. Castor oil in four hours. Continue stimulants and infusion of snake-root.

Oct. 4th. Dressed and walking about the ward. Tongue, moist and soft, and only a little redder at the tip than usual. Pulse 60; respiration 12. Blister raw, and slow in healing. Urine orange colored, re-action slightly acid, when first voided, but rapidly changes to the alkaline, and lets fall a heavy deposit after standing a few hours.

R. Quassia and soda. Full diet.

Oct. 5th. Urine, orange colored; sp. gr. 1024. Heavy deposit—reaction of saliva very slightly acid.

Oct. 8th. Entirely restored to health. Pulse 48; respiration 14. Temperature of atmosphere, 73° F.; temp. of hand, 97; temp. under tongue, 99.5.

#### CONCLUSIONS.

(1). Although the pulse of this patient, at first sight, did not appear to have been much accelerated, when compared with the action of the pulse in other cases of malarial fever, still it was, we think, greatly accelerated. The pulse was unusually slow in health, only 48 to the minute. The respiration was also very slow in health, 14 to the minute. The temperature of the surface was not greatly elevated.

(2). Aside from the cerebral symptoms, there was nothing to alarm the practitioner, except the state of the tongue. The prominent symptoms, as in the previous fatal case, from the same vessel, were connected with the brain.

(3). Active purgation and alterative doses of calomel, so far from benefiting, were, as was conclusively demonstrated, by careful examinations and analyses of all his symptoms, working in conjunction with the malarial poison, and rapidly bringing on a fatal termination. Stimulants, blisters, sinapisms, and large doses of sulphate of quinia, administered without any regard to the state of the tongue and brain, so far from increasing the cerebral disturbance, diminished it rapidly. Under the vigorous use of these active remedies, the dry, red tongue became moist, soft and pale—the pulse was diminished in frequency, and became fuller—the dry skin became moist, and the delirium entirely disappeared.

*These facts demonstrate conclusively that the action of the malarial poison is one of depression and not of inflammation.*

CASE XLIII.—American seaman, from United States revenue cutter, companion of the two former cases, (xli. and xlii.) Ta-

ken sick at the same time. Age 23; brown hair, dark eyes, florid complexion; height 5 feet 7 inches; weight 155 lbs.; large chest, and stout muscular limbs.

September 25th, 1857. Was taken sick two days ago. His attack commenced with a prolonged chilly feeling, followed, in the course of six hours, with fever. Has fever now.

R. Calomel, grs. x.; Sulphate of quinia, grs. v.

Sept. 26th. Medicine operated freely. Complains of pain in his head. Tongue coated with fur; pain upon pressure of epigastrium. Pulse 88.

R. Apply mustard over epigastric region; infusion of red pepper.

Sept. 27th. Much better; febrile excitement much less. Complains of slight pains in his bones and bowels.

R. Sulph. of quinia, grs. v. every three hours, up to grs. xv.; infusion of Virginia snake-root.

Sept. 28th. Has no fever. Give 15 more grains of sulph. of quinia.

Sept. 29th, 11 o'clock A.M. Much better.

7 o'clock P.M. Within the last two hours has taken a change for the worse. Intellect wandering. Complains of great pain in his head. Pulse 92, feeble; respiration 32. Reaction of saliva intensely acid. The secretions of the mucous membrane of the mouth are almost entirely dried up, and it is with difficulty that sufficient saliva is obtained to moisten the litmus paper. Tongue, where the fur is absent, very red—it is dry, harsh, and rough to the touch. Pain upon pressure of the epigastrium. Head and trunk hot, and extremities cool.

R. Sinapisms to extremities and epigastric region; cut-cups to temples and back of head.

R. Sulphate of quinia, grs. viij. every three hours, up to grs. xl. Administer brandy and infusion of Virg. snake-root, freely. Diet, brandy and arrow-root.

Sept. 30th, 11 o'clock A.M. The mustards and stimulants have aroused the intellect, and rendered the dry, parched tongue moist, and diminished the frequency of the pulse and respiration. Pulse 68, rather feeble; respiration 22. Temperature of atmosphere, 80° F.; temp. of hand, 95.5; temp. under tongue, 97. Skin slightly moist and cool to the touch; face much flushed; surface of head cool, although from its congested, florid, red appearance, we would judge it to be hot. The temperature of the trunk and extremities is below the normal standard, notwithstanding that the pulse and respiration are much more rapid than in health. During the night he was delirious, and it was difficult to keep him in bed.

The blood from the cut-cups appeared to be normal under the microscope, and showed no signs of inflammation.



R. Continue stimulants and sulph. of quinia. Diet, milk-punch, brandy and arrow-root.

Oct. 1st, 11 o'clock A. M. Continues to improve under the action of the stimulants and sulphate of quinia. Tongue moist and softer. Pulse 66, rather feeble; respiration 20. Temperature of atmosphere, 71.5° F.; temp. of hand, 95; temp. under tongue, 97.15. Complains of weakness. Rested well during the night, and has had no pain in his head since the application of the cut-cups. Urine orange colored—sp. gr. 1013.

R. Continue stimulants and nutritious diet.

Oct. 2nd, 12 o'clock M. Tongue moist and clean, redder than normal. Pulse 62, regular, full and soft; respiration 20. Temperature of atmosphere, 76.5° F.; temp. of hand, 98; temp. under tongue, 99. Reaction of saliva, decidedly acid. Urine, orange colored and clear, reaction decidedly acid—sp. gr. 1014. Amount excreted during the last 24 hours, grs. 21,210.

R. Continue. Full diet.

Oct. 3rd. Face not so much flushed. Tongue clean, moist, soft, and approaching the usual color. Respiration 19. Temperature of atmosphere, 76.5° F.; temp. of hand, 96.5; temp. under tongue, 98.8. Reaction of saliva decidedly acid.

Color of urine, reddish orange; after standing several hours, let fall a light yellow deposit—sp. gr. 1017.

R. Continue stimulants and infusion of Virg. snake-root tea.

Oct. 4th, 12 o'clock M. Up, and walking about the ward. Urine, orange colored—the change from the acid to the alkaline reaction took place in the course of a few hours, and a heavy deposit was thrown down. Amount of urine passed during the last 24 hours, grs. 15,270—sp. gr. 1018. Pulse 54, slow and full; respiration 14.

R. Quassia and soda.

Oct. 5th, 11 o'clock A. M. Tongue, pulse, respiration and skin normal. Color of urine, light orange—sp. gr. 1020—reaction of saliva acid.

Oct. 9th. Entirely restored to health. Pulse 43; respiration 15. Temperature of atmosphere, 72° F.; temp. of hand, 96.5; temp. under tongue, 99.75.

CASE XLIV.—Irish seaman, from United States revenue cutter—age 19: height 5 feet 7 $\frac{1}{4}$  inches; weight 145 lbs.; light brown hair, grey eyes, fair complexion.

October 4th. Was taken sick four days ago—his attack was two days later than that of his companions (cases xl., xli., xlii., and xliii.). Has had no chill, but has suffered with pain and dizziness in the head; face flushed. Pulse 100; respiration 20. Tongue coated with yellow fur, tip and edges red; papillæ enlarged. No tenderness of epigastrium. Skin hot.

R. Calomel, grs. xij.; sulph. of quinia, grs. vi. Mix, and administer immediately, and follow with castor oil in four hours. As soon as the medicine has commenced to act, give sulph. of quinia, grs. v. every three hours, up to grs. xx.

Oct. 5th. Much better. Head relieved. Skin in a profuse perspiration. Reaction of sweat and saliva decidedly acid. Pulse 104. Skin hot, but moist and relaxed. Respiration 24, full, thoracic. No tenderness upon pressure of epigastrium. Tongue redder and dryer than normal. Medicine operated four times. Has taken xxx. grs. of the sulphate of quinia.

R. As soon as fever remits, give brandy and infusion of Virginia snake-root.

Oct. 6th. Continues to improve. Pulse 96. Skin warm, but moist. Continue stimulants.

The febrile excitement subsided and there was no return, and this patient was discharged a few days afterwards.

CASES XLV. and XLVI.—Two stout, athletic young seamen, from the United States revenue cutter, who contracted their sickness simultaneously with the four seamen mentioned in cases xli., xlii., xliii. and xlv.

One suffered with a slight attack of intermittent fever, and remained in the hospital only a few days.

The other suffered also with intermittent fever, but of a severer type.

In this case, the chill was well marked, by a hot trunk and cold extremities, and great disturbance of the sympathetic and cerebro-spinal nervous systems, and in the succeeding stage of febrile excitement, the pulse was full and strong, the respiration accelerated and the animal temperature correspondingly elevated, and in the intermission there was a marked subsidence of the febrile excitement.

At first sight, the severe chill—the full, bounding pulse—the thoracic respiration, and the hot and parched skin, would excite the belief that the patient was in danger. Such an opinion would have been erroneous, for these phenomena signified powers of resistance.

This case yielded far more readily to the action of the sulph. of quinia than the former cases from the cutter.

*Conclusions drawn from an examination, analysis and comparison of these six cases of malarial fever, occurring in the crew of the United States revenue cutter.*

(1). Whilst the revenue cutter was cruising about the mouth of the Savannah river, the crew remained healthy; but as soon as they were exposed to the exhalations of the low grounds and marshes, they were attacked by malarial fever. This fact de-

monstrates that a special cause resided in a special locality, capable of producing a special disease.

(2). There was a remarkable uniformity in the symptoms of four out of the six young men from the cutter who were attacked with fever.

In these cases, the malarial poison appeared to act either directly or secondarily, powerfully upon the nervous centres of the sympathetic and cerebro-spinal systems.

*The action of the malarial poison was depressing, rather than inflammatory. Whatever diminished the forces, acted in conjunction with the malarial poison. Whatever stimulated the nervous system, excited the action of the heart, excited the capillary circulation, excited and increased the chemical changes of the nutritive fluids and organs and tissues, acted directly antagonistic to the action and effects of the malarial poison.*

(3). A rapid pulse, rapid respiration and low temperature, and wandering intellect, are always dangerous symptoms, which signify a perversion of the functions, an interference with the normal chemical actions, which generate the forces, and an unconditional surrender to the fatal poison.

(4). A rapid, full pulse, accelerated respiration, and a corresponding development of heat, are favorable symptoms, and signify an effort on the part of nature to get rid of the poison. *The fever is not the disease—it is an effect of the action of the malarial poison upon the living organism, and signifies a power of resistance.*

(5). The differences in the symptoms of these cases show that, men living on the same small vessel, and exposed in an equal manner, will not suffer alike. The effects of the poison will depend, in great measure, upon the nature of their vital and physical endowments.

(To be continued.)

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#### ARTICLE V.

*Surgical and Medico-legal History of a Case of Comminuted Fracture of the Fore-arm, just above the Wrist-joint, resulting in Anchylosis and Deformity.* By W. S. LIGHTFOOT, M. D., of Macon, Ga.

[REMARKS.—We regard the following report a very interesting and important one to Practitioners. It has become, of late years, a great evil to our Profession that, on the slightest pretexts, its members may be mulcted in large amounts, in surgical cases, under the charge of mal-practice. It has heretofore



been more sorely felt by the Profession in the northern than in southern cities, and the record of unjust and sometimes almost ruinous verdicts, gained against Practitioners, found occasionally in the journals of that region, is well calculated to attract the attention of the Profession, and to make them feel called upon to fix the principles upon which all such cases are to be hereafter equitably decided. Although the valuable reports of Prof. F. H. Hamilton, of Buffalo, to the American Medical Association,\* "on Deformities after Fractures," must ever be resorted to, as a tower of defence, in such cases, still the history of others will serve to make testimony yet more abundant, and settle more firmly the principles which should prevail in these adjudications.—EDTS. S. M. & S. JOUR.]

February 12th, 1855. John J. Kah, a German by birth—a hireling on the South-western Railroad—whilst pushing a car ahead of him, another car came up behind him, unobserved, and struck his left elbow while flexed, driving his hand against the front car, fracturing the fore-arm, just above the wrist-joint. Called to see him about one hour after accident. Found the fracture as above stated: in addition to which I also found the end of the bones which were broken off, together with the bones of the carpus, so much crushed as to induce me, when examining the parts, to remark that they felt like a bag of little stones. Surrounding soft parts much damaged. After examination of fracture, I remarked to Kah, that the French surgeons would in all probability amputate the limb; but I would try to save the hand and arm. He said, in his agony, if I could not straighten the arm, not to touch it. I told him to do the hallooing, and I would do the work. Adjusted the parts as well as I could. Applied the small compresses, long splints and roller bandages. Then directed the bandage to be kept wet with cold water; and should there be much swelling and pain, to loosen the bandage a little.

Left patient in charge of a prudent and experienced nurse. On the thirteenth day thereafter, I saw him again at the request of Capt. W. P. Anderson, the nurse. Found the dressing in a filthy condition; the fracture in proper condition. Cleansed the parts; applied fresh dressings—having the arm well supported during the removal, and re-application of the dressings. Some

\* See Transactions, vol. x., 1857.

time after my second visit, and whilst the arm was in sling, he had a row with his wife, and also a fight with his brother-in-law. Saw Kah no more until the fifteenth of June thereafter, when called to see his son, whom I visited several times. Heard no complaint from the arm during my visits.

May 1856. Kah commenced suit against me for malpractice, claiming damage to the amount of *ten thousand dollars*.

WHITTLE and TRACY, for Plaintiff.

POE and GRIER, for Defence.

JOHN K. KAH,	}	<i>Case for Malpractice.</i>
<i>vs.</i>		
WILLIAM S. LIGHTFOOT.		

Came off at November term, 1858, in Bibb Superior Court.

#### EVIDENCE BY PLAINTIFF.

Interrogatories of Susan Arnold and Margaret Johnson read.

*William P. Anderson, testified from the stand.*—Saw Kah on the day of the fracture, about the first of February, 1855. Doct. Lightfoot was sent for, and came immediately. Kah was suffering great pain. He asked him if he could set it? He said he thought he could. Kah said, I would rather it had been my head, if it can't be made straight. Kah asked if it would hurt much. Dr. L. said, you do the halloing, and we will do the work. Dr. L. had some bags, or cushions, stuffed with meal-bran, as he said, to keep the bones apart. Dr. L. said, while he was setting the arm that it felt like a bag of little rocks. Dr. L. told Kah if it swelled to loosen the bandage. Dr. L. asked witness to see Kah every day and attend to it. Nothing was to be done except to keep the bandage wet with cold water. On the 14th day, Kah complained so much, he looked at the arm—it was mattering, smelt bad—bags pressed into the flesh. Dr. L. was sent for, and came promptly. When he came, he said oh dear! it ought to have been attended to sooner. Thought he meant that he, the doctor, ought to have attended to it. Dr. L. had been the physician of Kah before—know that he once went to see little boy with a nail in his foot—don't know how often he saw boy. Kah was a cabinet maker—worked at Railroad depot. Dr. L. said nothing about the case being a pauper case. Dr. L. did not see him again for fourteen days, so far as witness knows. Skin not broken at first.

*Cross.*—Dr. L. had once before seen witness in a case of surgery. Witness is a good nurse. Witness wanted to send for Dr. L. before he came the second time and Kah refused. He did his best to get him to send for Dr. L., but he would not let it be done. The arm did not mortify—the flesh-wound healed—the arm looked straight when it was first set. Can't say whether it was straight or not at the second visit; but the bags looked in the same condition as when set; and thinks the arm was in same position. When Kah said, doctor, if you can't set it straight, don't touch it—he meant the then condition; that is, if he could not set it right. After the second visit, witness did not see him often. Kah told witness he got his arm hurt, while pushing a car; another came up and struck his elbow, driving it up. Did not observe the arm to be crooked until he commenced using it. It grew *crooked* and *crooked* as he used it. Kah was walking about the house. Don't know whether or not he could have walked to the doctor's office.

*Susan Arnold, Sworn.*—Answers, I know the parties. I was at the setting of arm. Kah asked the doctor if he thought both bones broken. The doctor replied that he did not think them both broken. Kah said, if you can't make my arm straight don't touch it; for I would rather have my head cut off, than have my arm crooked. The doctor replied, never mind, you do the hallooing, and we will do the work; then called William P. Anderson and William Dillard, to assist him in holding Kah's arm. The doctor directed Kah to apply cold water to his arm, if it pained him before he came again. I did not live in the house with Kah's family. I lived about three-quarters of a mile from Kah's. It was about two weeks from the time his arm was broken and first bandaged, before I saw it again opened, which was done by the doctor. Dr. L. had been Kah's physician two or three years. I had known of Kah's paying him one or more bills; and he had been in the habit when sent for to see a case in the family, of continuing to come as long as he thought it necessary. I thought it much neglected from seeing the matter run through the bandages.

*Cross.*—I live about three-quarters of a mile from Kah. Was present when the doctor came to see Kah the first time—did not hear the doctor say that Kah's arm felt like a bag of



stones—did not hear him say that Kah would be likely to have a stiff-joint—cannot say whether the arm was correctly set, as I am no doctor—did not hear the doctor direct Kah to loosen the bandage in case the arm became painful and swelled; but I did hear him give directions not to have it moved, and if it pained him to have it wet with cold water. Never heard him say that Dr. L. did not do his duty by him.

*Margaret Johnson, Sworn.*—Says, I was present when Dr. Lightfoot first bandaged Kah's arm. He asked the doctor if he could set his arm straight, if not, not to touch it, for he would rather have his head cut off than have it crooked. The doctor said, never mind, you do the hallooing and we will do the work. He directed him to keep the bandage wet with cold water, and not remove it until he came back. The doctor's instructions were fully carried out during his absence. It was fourteen days before the doctor came back to see Kah, and was then sent for. When the doctor took off the bandage, he said it ought to have been attended to sooner. The cords or leaders on his wrist were entirely rotten or eaten off, and as green as grass, as his arm had been bandaged so close, by having it laid in a little bag filled with corn meal, and another one laid over it and kept confined. The doctor said, the little bags were to keep the bones apart and prevent their growing together. I lived in the house with Kah's family during the time. Saw his arm every day after the doctor came the second time—saw it every time it was dressed, and assisted. Kah conducted himself properly while his arm was hurt; was not drunk during the time. I was present all the time. Mr. W. O. Hurt was not at Kah's during the time, to my knowledge. Kah had no difficulty with his wife whilst his arm was hurt. I know the doctor did not come the second time until fourteen or fifteen days, and did not come then, until sent for. Found the arm in a dreadful condition.

*Cross.*—I lived with Kah's family. Was present when Dr. L. set his arm. Did not hear the doctor tell Kah that his arm felt like a bag of small stones. Was present all the while, and did not hear the doctor tell Kah that in all probability he would have a stiff wrist. I cannot say whether the arm was set or not. I am no doctor. The doctor did not direct Kah to have the bandage loosed if the arm should swell and become painful;

but told him to let it remain as it was until he returned, except to keep it wet with cold water. Kah and his wife did not have a difficulty while the arm was bandaged. Kah did not drink any ardent spirits while his arm was hurt. William P. Anderson did frequently see Kah in the absence of the doctor. Anderson did advise Kah to send for the doctor before he came the second time.

*William Dillard, Sworn.*—Maj. Anderson was present when Dr. Lightfoot set the arm. He set it straight; it was greatly crushed, felt like a bag of rocks; heard the bones as the arm was moved. The little bags used were stuffed with bran, and were about the size of witnesses finger.

*Dr. Hammond, Sworn.*—He examined the arm; thinks it now has half the use of sound arm. Can't say whether the arm could have been made better, if properly attended to. Injuries of the wrist are the most difficult to heal without deformity. Any motion, for thirty to sixty days, will alter the condition. Heard Anderson sworn. Thinks the arm was set and dressed right; can't say it could have been better; thinks he would see a case of the sort once in five or six days, unless he could leave him in the hands of such a nurse as Maj. Anderson. This is my practice. If the bandage had been removed sooner, perhaps there would have been less sloughing.

*Cross.*—The condition of the arm, shows that great violence was done to it. The joint was greatly damaged; in injuries of wrist deformity is the rule, and not the exception. In injuries of the kind, the exudation of pus or matter, is the result of an effort of nature to restore the injured part. No fault of the doctor, up to the fourteenth day, according to Maj. Anderson's evidence to produce the deformity. Thinks it doubtful, whether it could have been cured better. The rule is, not touch the bandage, so long as there is no pain.

*Dr. Thompson, (Reformer) Sworn.*—Heard Anderson's testimony, and saw Kah's arm. The arm might have been made better. Doubts whether it is as good as half a hand to a cabinet maker. Thinks Dr. L. ought to have seen Kah the second day, and ought to have seen him every day. My impression is, that the arm would not have been so bad, if he had been seen and attended to properly by Dr. L. The general rule is, that the

joint is stiff. Kah's is both stiff and crooked. More care the better.

*Cross.*—Stiffness and deformity are the rule in injuries done the wrist. A visit, if the arm is straight and not painful, is useless to the patient.

*Dr. Fitzgerald, Sworn.*—Looked at the arm; should have seen the case in two or three days; should have been unwilling to have taken the case, unless he could have seen the patient three or four times in the first two weeks. In pauper cases, he makes appointments for patients to come to his office to see him. In fractures near the wrist-joint or in it, deformity most always is the result. Where so many bones meet, great deformity is the result. Thinks the deformity very great in Kah's arm; don't know that it was the result of the injury; but thinks the arm might have been better cured.

*Cross.*—In cases of this kind, it is bad surgery to disturb the dressings while the arm is straight and not much swollen. It is an exception to rule when there is no deformity. If I had a good nurse, one in whom I had confidence, I would not visit the patient so often. If, at the end of fourteen days, I had found the limb straight and not swollen, I should have considered the patient uninjured. External inflammation and exuding of pus, does not injure the limb it rather aids the cure. If the limb becomes offensive, more or less unnecessary pain would have ensued.

*Rebuttal.*—Don't see any occasion for so great deformity, but don't know, as he did not see the injury.

*Dr. H. K. Green, Sworn.*—Two years ago, may-be not so long, Kah called on witness to ask advice. Surgeons differ as to when they should visit the patient after the injury, as described. Witness would have seen patient next day—would have seen him once a week. Custom of surgeons here not known, if nothing is said about time when patient is to be visited. Thinks it usual to have an understanding with him. Impossible to tell whether the limb could have been cured better. If patient should not do his duty, no skill on the part of the surgeon could benefit him. Can't account for such deformity. When the bones are shattered, it defies the best surgery to prevent deformity. A case such as witness Anderson describes this to have



been, is a most unpromising one. Such case could not be expected to be better cured.

*Dr. Cox, (Reformer) Sworn.*—If patient had been injured as described, it would have required close care. Would have seen patient every day—proper care and dilligence required it. Thinks it would have been improper to have let fourteen days elapse without seeing patient. Thinks the case not so good as he would have expected. When he has a case, he either tells patient not to expect him, or he visits him when necessary.

*Cross.*—In injuries of this kind, if the bones are properly coaptated, no great deformity necessarily results. Practice is, let the dressings alone, so long as the limb is straight. The worse the injury, the longer it requires for the bones to unite. In injuries of the wrist like this, deformity is apt to ensue. Book\* is recognised by a respectable body of surgeons as being one of authority. Thinks the system of surgery wrong. It is not the science of life.

#### DEFENDANT INTRODUCED.

*Mrs. McDarnold, who being Sworn.*—Knows Mrs. S. Arnold and Mrs. M. Johnson, who testified in this case. Knows their general character; has known them for twenty years; would not believe them on their oath in a court of justice. Has seen Margaret Johnson drunk. Has seen her in the unlawful embraces of a negro. Known Susan Arnold to keep a house of *ill-fame*. This was in 1833 or 34. Kah's wife is said to be daughter of Susan Arnold. Witness is a relative of President Jefferson.

*Doctor Mettauer, Sworn.*—Saw the hand and arm; heard Anderson's testimony. The treatment of the arm by Dr. L. was perfectly correct under the circumstances as sworn to by witness Anderson. It would not have been necessary to see the patient for two or three weeks. If the nurse had asked the patient to send for the doctor and he had refused, the result would be his own fault. If any thing had gone on wrong, the pain would have been so great, that he would not have been able to bear it. In pushing a car, the hand would have been lower than the elbow, consequently, the tendons must be injured. If so, no surgery could have made it better. If the injury had been such

\* Transactions of the American Medical Association.

as described, he is greatly surprised at so good a cure. The muscles must have been cut or injured.

*Cross.*—Surprised at the good cure, after knowing the nature of the injury. The bandage should not have been removed for two or three weeks. Nature was doing her work. Sloughing was a necessary consequence, no injury arose to patient from it. Would not have gone to see him in two weeks.

*Rebuttal.*—No neglect could have produced such a result. It must have arisen from the injury of the muscles and tendons. No sloughing or mattering of the arm could have altered the result at all. Book shown is good authority. Every case in it does not meet my approbation.

*Dr. Harrison, Sworn.*—Has examined the arm—heard Anderson's testimony. From the nature of the injury, deformity must have issued. The result is owing to the cutting and other injuries to muscles and tendons. When such wounds are dressed, it is wrong to disturb them while the parts are straight. Sloughing is of no moment. If I had left the patient in such a nurse's hands as Capt. Anderson, I would not have seen the patient in two or three weeks.

*Cross.*—Has written several pieces in the paper signed "Bandage". From nature of the injury, it would have been impossible to have avoided deformity as it exists. It must have arisen from the injuries to the tendons and muscles. On the 14th day, the arm was dressed, and could be cleansed and dressed without injury. No neglect of the doctor could have caused such deformity.

*Wm. O. Hurt, Sworn.*—Knows plaintiff; he was not a good cabinet workman—making nothing but a dollar per day—nothing but a cobbler. Saw him some time after the injury on Bridge-row chasing his wife. They were not in conflict, but they were in an affray—his arm in a sling.

*Cross.*—Kah was not worth more than \$1 a day. It was about the third week after the injury, that I saw him chasing his wife.

*Ludwick, Sworn.*—Had a fight with Kah, whilst his arm was in the sling. He knocked me with his well arm.

*Capt. Anderson, recalled.*—Kah removed to Bridge-row 14th March—injury, 12th February. Only saw Kah occasionally

after he went to Bridge-row. Did not see the fight with Ludwick. Knows Magaret Johnson and Susan Arnold.

*Dr. Thompson, recalled.*—Thinks Kah was good for his contracts at the time of injury. He had money in his hands belonging to Kah.

#### ANSWERS TO INTERROGATORIES.

*Dr. J. A. Eve, of Augusta, Ga.*—Says the arm ought not to have been dressed again, until the dressings had become deranged or uncomfortable to the patient, without reference to the number of days. The loss of the arm, I think, would not be a probable result. Ankylosis inevitable, and more or less deformity almost certain. The responsibility should be thrown on the patient under such circumstances. Under the very best management, most probably, there would be more or less deformity.

\* *Dr. L. A. Dugas, Augusta, Ga.*—He says, I am a practising physician and surgeon. The dressing of fractures, should be re-adjusted whenever it becomes deranged or painful. There is therefore no specified period for the removal of dressings. Such a fracture would not usually cause the loss of the limb, but would most probably result in more or less deformity. I do not think that the attending physician should be held responsible for the misconduct of the patient. Injuries of the wrist-joint, complicated with fractures, are very often attended with deformity, under the best possible management.

*Dr. H. F. Campbell, Augusta, Ga.*—He is a practising physician and surgeon. When a fractured limb has been dressed, I do not contemplate the removal of the bandages so long as they remain properly adjusted and comfortable to the patient. Should inflammation and swelling ensue, it becomes necessary to remove the dressings. The removal of the bandage is considered rather as an unpleasant necessity which may arise, than as a part of the ordinary attention to be rendered in the treatment of a fracture.

The phrase, "setting a bone" implies *permanently* maintaining the adjustment till reunion has taken place, provided, pain, inflammation or derangement of dressing does not render surgical interference actually necessary. The dressings are only removed, when such removal is unavoidable. There is no fixed



time at which the dressings should be removed. In extensive fractures, however, we delay disturbance of the limb as long as possible, in order to allow full time for union to be effected. Union progresses very slowly in comminuted fractures, and the *first* dressing, after the setting, should be delayed as long as possible. From four to five weeks, if the swelling of the limb or the derangement of the dressings does not render their removal necessary. A fracture of the kind described, need not necessarily cause amputation, but deformity and impaired use are very common results in such cases. The responsibility should be upon the patient in such a case. Should the patient neglect to inform the physician even, of any *accident* which may have befallen the limb, so as to give him the opportunity of remedying it, the physician, in my opinion, is free from responsibility for any unfortunate result; much more so, if the patient should engage in fights or in any other exercise of the limb, which is calculated to destroy the benefit of the treatment.

*Dr. Robert Campbell, of Augusta, Ga.*—If the arm remained in proper position, as it was placed, and was doing well, it should not be disturbed at all, unless there was a flesh wound which might require washing and dressing. There is generally no necessity for disturbing a fractured limb after it has been regularly set with splints and done up. If care has been taken by the patient or his attendants (i. e., his nurse or friends about him,) to prevent the apparatus from displacement, unless sometimes in case of swelling; for when a limb is *set*, it is presumed that the splints are capable of keeping it in the position in which it is placed, if not interfered with. It would be necessary to examine the apparatus to see that it had not been deranged, before the union between the ends of the bone had become consolidated or changed into bone. This consolidation takes place sooner in some bones, and in some *portions* of bones than in others, and to allow this variation, I would say, that from the 10th to the 15th day, a set fracture might safely remain unexamined. I do not think that union takes place as rapidly at the ends as in the centre of the shaft of the long bones. If the limb was in the condition described in the interrogatory, I would hope to avoid amputation, probably, unless there was "compound fracture," that is, a flesh wound communicating with the

fracture, and injuring the muscles, nerves, &c.; but I consider stiffness of the joint almost inevitable with so extensive an injury to the bones of which that joint is composed; and I believe that the more complicated a fracture, (i. e., the greater the number of pieces the bones are divided into) the greater are the chances of deformity. The patient might have kept the arm in the sling unnecessarily long. I do not think it safe to use a limb after fracture, for five or six weeks; and even then, I believe, there would be danger in subjecting it to any violent use. If the patient should imprudently subject his limbs prematurely (or before that time) to such dangers as those over which his physician could have no control, (as fights, &c.,) I think the responsibility for the result should most unquestionably rest with him, the patient. I believe that injuries involving the wrist-joint, are very apt to result in deformity and stiffness, principally on account of the great number of bones which enter into the construction of that joint.

*Dr. Paul F. Eve, of Nashville, Tenn.*—Says that he is a practising surgeon, and most conversant with surgery, and has been engaged in teaching it the quarter of a century. Bones commenced to unite about the ninth day, and if the patient suffers none, even if the fracture has not been reduced, all the surgeon has to do at first, is to prevent the development of unfavorable symptoms. It is best, however, to set the limb at once, which when done, a second visit may be deferred for from eight to twelve days; provided the surgeon is to be apprized if the patient suffers, or the apparatus applied becomes deranged. The definite answer to the second interrogatory, is, that a fracture ought to be seen under all ordinary circumstances about the ninth day. If he had put up a limb, injured as this one was, and had given his views to the patient as to the probable result—namely, amputation—he would not return to see it at all, without being sent for; for he (the patient) would have received his (deponent's,) opinion, and he had a right to act upon it according to his own judgment. It was the patient's duty to let the surgeon know when his services, if at all, were required. When the patient is in limited circumstances, or able to be up and about, as the services rendered are gratuitous, he certainly ought to come to the doctor's office to have his fracture re-examined or the apparatus re-

adjusted. It certainly is his place to let it be known, should he suffer pain or observe anything wrong about the fractured parts. The limb properly set, may never again be disturbed during the whole course of treatment. Indeed, this is the best practice in fractures.

The prognosis in such cases is very unfavorable. An injury of the character described, generally requires amputation; it could not be cured without deformity and loss of motion. A perfect fore-arm and hand in an ordinary fracture, at or near the wrist-joint, is an exception, and not the rule. Deformity is the result. He is surprised that the limb was saved, and the patient did not die of mortification or lock-jaw.

After being charged by his Honor, Judge Henry G. Lamar, the jury retired and returned a verdict *for defendant*.

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*On the Theory of Inflammation.* By JAMES HINTON, M.R.C.S.

INFLAMMATION, being the most frequent form of disturbance in the animal body, has received from pathologists the largest amount of study. By observation and experiment its phenomena have been traced from first to last. Yet the word conveys to us still but an indefinite meaning; the relation which the changes implied by it bear to each other has not been distinctly grasped. The senses have contributed their part, but the mental element is defective. We still wait for that true knowledge which consists in the recognition of order and mutual dependence; and our efforts must continue until we are able to place before our intellectual sense the observed phenomena in a rational and necessary sequence.

Nor is there in such an attempt anything unreasonable. The links of necessary causation must exist, and a right knowledge of them must be simpler and more conformable to reason than hypothesis constructed in ignorance. We seek the relation in which certain observed processes stand to each other, the rational bond between them. In a word, we require a dynamic view of inflammation. Some progress in this direction has indeed been made in the proposition now so generally held, that inflammation is "an altered nutrition." Unquestionably this is so far good. It recognises in inflammation a *process*, and excludes therefore the idea, which is so apt to suggest itself to us in relation to all that is not understood, of a specific entity. But this expression can hardly be said to advance us far on the road to a positive knowledge. If we may, on the one hand, affirm it to



be true, must we not, on the other, admit it to be a truism? What is the amount of information it conveys to us which we did not previously possess? It tells us that inflammation is a diseased or perverted state of life, but are we not apt to think that it tells us much more? Does not that unknown term "nutrition" stand in our thoughts for some definite addition to our knowledge? Does it present itself to us so clearly as it should do that if the meaning of nutrition be so large, and we know so little of its nature, it is but a form of words to say that inflammation is an altered state of it?

All writers on inflammation have recognised in it processes of two opposite characters and tendencies. Mr. Paget classifies them into those that are productive, and those that are destructive, and the distinction is broadly obvious. Into the ordinary conception of nutrition itself indeed both these processes enter; it is regarded as including two opposite actions of series of changes—growth and decay. But this oppositeness of action is ever more marked in inflammation than in health. In an inflamed part we may see a structure decomposing, not in invisible molecules, or by mere interstitial removal of its elements, by dying in large masses, while all around it the evidences of *vital* action, of the impetus towards growth, are seen in more than ordinary energy. Is there any intimate relation between these opposite actions; may inflammation consist in either alone; or, if both be essential, what is their connexion?

That an increase of both processes, the decay and the vital action, is necessary to constitute inflammation, appears when we consider the distinctive characters of that affection. It differs from mere increased decay, as primary gangrene or atrophy, on the one hand; and from mere increase of vital action—hypertrophy, repair, or development—upon the other. Its peculiar characters involve at once an abnormal increase of destruction and of growth.

If, then, both these changes be essential to inflammation, can there be traced between them any other connexion than that of co-existence? Are they related as cause and effects? What is the starting-point of the morbid process?

I answer: they are related as cause and effect; the increased decomposition is the starting-point; the increased vital action is secondary and dependent.

The first proof of this position is found in the nature of the causes by which inflammation is induced. All of these, it has often been remarked, are such as clearly tend to lower the vital power or to produce actual destruction of the parts on which they act. In every case in which the origin of inflammation is distinctly traced, the starting-point is found to be in fact an anti-vital change.

And this practical evidence is reinforced by the most cogent theoretical considerations. Can we represent to our thoughts any clear idea of a primary abnormal increase of the *vital* or formative action that should be inseparable, as inflammation is, from a concurrent increase of decay? And this increased decay, not such as attends and is subservient to increased growth, but of so disproportionate an amount as almost always to result in a lessened vitality of the affected part. Is it not a contradiction that an approximation to death should be the result of an increased life? It is not inquired now how such a primary increase of the formative action should arise, and especially in such circumstances of debility and depression as most favour inflammation, because that subject will be considered hereafter in tracing the relation between inflammation and adventitious growths; but there is a direct bearing on the question in the fact that inflammation arises in tumours then first when decay begins in them. It is incompatible with the increased formative action which produces them; it is a constant attendant on their disintegration.

Connecting thus the two series of changes, destructive and formative, as cause and effect, both may be understood. For the increased formative action some cause is demanded, some additional and local acting force to which it may be ascribed. This demand is fulfilled by the increased decomposition, which is a known source of force, and which is itself sufficiently accounted for by the tendency of all organized substances to undergo decay. The abnormal decomposition is referable to known and sufficient causes, and itself supplies a cause for the abnormally increased activity of the formative process. For not only is decomposition of the tissues (a change belonging to the class of chemical actions) a recognised source of *force* as such, and thus capable of acting as a stimulus upon the vital activity of adjacent tissues, but it is shown by well-known facts to be immediately concerned in the production of the formative action. Such facts are the liquefaction of certain portions of the embryo as conditions for the development of other portions; the decomposition of the food which forms the first stage of digestion; and especially the immediate dependence of the nutrition of any organ upon its functional activity.

Inflammation indeed stands thus but as an exaggerated instance of this normal relation of decomposition and growth: it is strictly correlated to the ordinary processes of life; and abnormal or excessive functional or decomposing change, producing a similar excess of the reparative action. It may seem strange indeed how so natural an interpretation of the facts should have escaped the sagacity of those observers who have especially noticed the intimate connexion between functional activity and inflam-

mation, and who have remarked that excessive function of an organ leads to or becomes inflammatory action by such continuous gradation that the line cannot be drawn between them.

Inflammation is excessive function, with or without qualitative perversions: *common* in the absence of such perversions, *specific* when they exist. The term "function" is here used to signify that disintegrating change of which the functional activity is an indication. In attributing inflammation to an excess in this respect, nothing is assumed but a known tendency, the chemical affinities, which may always be presumed to act when not prevented by opposing force, or absence of the requisite conditions; and which are therefore necessarily brought into play by all that diminishes the perfection of the vital state. From the operation of these forces all the main phenomena of inflammation may be traced in a consequent series, and no recourse is necessary, as upon the hypothesis of a directly increased vital action, to mysterious, or at least to unknown, powers.

The twofold nature of the processes concerned in inflammation has been one chief source of the difficulty that has invested the subject; these processes not being seen in their true relation, nor recognised as corresponding, in respect to that relation, to the healthy life. Two opposite views have been manifested by different writers, each with great support from observation, yet each failing to supply a theory of the affection that could be accepted as complete, or as applicable to all cases. On the one hand is the theory of "increased action;" on the other, that of "debility," or diminished vital force. Each reposing on one portion of the phenomena, with an insufficient recognition of the other, and embarrassed, therefore, instead of aided, by half of the facts with which it had to deal; each capable of a most plausible demonstration, yet leaving in the mind a painful consciousness that the problem was not solved, nor the true nature of the disease revealed. The old theory of increased action\* demanded as its complement the modern one of debility or diminished action; but the latter, though more philosophical, equally fails to express the whole truth, and had it existed first, would not less certainly have been supplemented and supplanted by the one whose place it has usurped. If inflammation be in all cases merely diminished action, "depression of the vital force," what is the distinction between sthenic and asthenic inflammations? why should stimuli be in some cases useful, in others injurious? Would not the term, diseases of debility," become then a mere pleonasm, while yet we cannot but feel that it does ex-

\* For a most ingenious argument in favour of this view, see a paper by Dr. Cappie, on the Nature of Inflammation: *Edinburgh Medical and Surgical Journal*, No. 81, p. 55.



press an actual and most important distinction between classes of disease which may be both alike inflammatory? And are not greater heat, more rapid circulation, a more vivid sensitiveness, among the indications of a higher life by which the warm-blooded animals are elevated above the cold-blooded? Shall we, to make a theory consistent, permit contradictory interpretations of identical phenomena?

Let me not be misunderstood. I do not deny that inflammation is, in one sense, always a disease of debility; that is, its starting-point is an anti-vital change, it originates in decay; but it includes not less an opposite class of actions, the downward process generates an upward one; decomposition adds intensity to life.

The inflammatory process, then, is an affection primarily due, as all functional processes are, to a disintegrating change which generates a formative process that would not else exist. Thus viewed, inflammation may not only be better understood in itself, but may be brought into definite and intelligible relations with a wide circle of kindred phenomena, mutually giving and receiving light. And first, as to its own nature, it is found to bear a distinct and decisive character. It may be defined. The boundary which separates it alike from health and from other morbid processes is distinct and legible. From health it is distinguished in this, that it is an excess or perversion of the *functional* activity, with its consequences; the decomposition which is normal in function exceeds in inflammation that amount which is compatible with the integrity of the tissues.

And from other local diseases it is clearly marked by these characteristics, of involving a twofold action, and of starting from a decomposition. Tumours may present the twofold action of growth and decay, but the growth in their case has precedence. Hypertrophy presents increased formation only; atrophy, diminished formation, and probably diminished energy of decomposition also. Degeneration properly so called, if agreeing with inflammation in having increased decomposition for its starting-point, differs from it in the absence of the vital reaction; as also does primary gangrene, though the latter is a cause of inflammation in the surrounding parts. It seems to me that the difficulty, on which so much stress has been laid, of indicating precisely lines of demarcation between inflammation and other affections, does not exist if the case be rightly conceived. That various abnormal processes may coexist is true, but there is no necessary confusion among them. Where a local decomposition, carried beyond the bounds of the normal functional activity, has brought in its train an abnormal formative action, in however slight a degree, in whatever condition, of the system, or with

whatever other morbid processes it may be mixed up, there has been inflammation. The relation of the forms of action concerned in the inflammatory process is well seen in the phenomena attending suppuration. For in the formation of pus-cells there appears to be a true growth; and we may conceive that the force arising from the increased decomposition which has previously been operating upon the solid textures, producing in them the heat and redness and swelling which are characteristic of inflammation, operates after the effusion partly on the effused fluid. So that while the dynamical process remains the same, the "symptoms" begin to subside.

Again, if inflammation start from increased decomposition, and all exaggeration of the normal proportion of that process tend to give rise to it, then its extreme frequency is sufficiently accounted for. It must be that inflammation should result from every form of irritation, should complicate every other disease, should arise the more readily the more the vital powers are depressed, should attend all injuries, should affect all structures, should know no limitations of age or circumstance; that it should be, in short, the great disease, and the chief subject of the healing art. The producing cause of inflammation is one that is in constant operation; the tendency to it is involved in the very existence of a living body. Life is a state of constant *tension*, any relaxing of which results of necessity in that excessive decomposition which initiates the inflamed condition. It needs not any extraneous agent to sustain it. As is the spark to gunpowder, or the electric shock to a mixture of oxygen and hydrogen, so is its "exciting cause" to inflammation. Take away, or suspend by any means, the controlling force which holds in organic relations the elements of the living frame, and that anti-vital change takes place, that new arrangement approximating to the inorganic state, which the familiar affinities of those elements tend always to produce. Thus is inflammation, as it were, the sword of Damocles suspended over the head of every living thing. Even as death for ever threatens life; for inflammation involves a partial dying of the part affected, and the reaction of the living frame against it.

Thus it conforms itself to the radical idea of a disease; that of a defect of life. For it was a fatal objection to the old doctrine of increased action, that it assumed, as the essence of a disease, excess of life. All disease deviates from health primarily by defect, it is a sinking, not an elevation; in so far as any organism suffers disease, it has approached to death. Yet, in another sense, there is in inflammation increased action; it is not a mere absence of the vital power, as atrophy perhaps, may be, it is action opposed to it. The organizing process must have been performed, or inflammation cannot be. It is like the running

down of a watch, which implies that it must first have been wound up.

But is it true that decomposing actions in the body do originate, or intensify, actions of an opposite character? or is this only an apparent, and not a real, relation? Has this conception so much basis, in fact, apart from inflammation, that it may legitimately be used as a guide in the theory of that disease? It is a wide question that is thus suggested, but it is one that is fairly within the scope of observation. Virtually, it amounts to this: Is chemical action one among the forces by which the organizing processes are instituted and maintained, under the conditions appropriate to them; or if not itself one of those forces, is it a source of them? For this inquiry the way has been perfectly prepared by the researches which have established the dependence of the organic state upon the operation of force *ab extra*. There is clearly no theoretical or *à priori* reason that it should not be so. For chemical force takes its place in the chain of organic forces, mutually producing and produced. There are no characters which separate it from the rest, or should forbid it to have its share in the organizing agency so freely ascribed to the light and heat with which it is interchangeable, or if the apparent opposition between chemical and vital processes should be objected, two observations may be made in reply. First, that heat and light show themselves in certain aspects opposed to life. Is not heat unequivocally a determining cause of vital action, yet what is more destructive of vitality than a temperature raised too high? Nay, is not cold itself often an agent invigorating to the vital process; yet what is more opposed to life than cold? And light too, may operate against vitality. The direct rays of the sun will paralyse the retina, or passing as it were into heat, when concentrated with a lens, will burn the textures. Overstimulation by ordinary light injures the eye or withers plants. And secondly, if chemical action be so directly opposed to vital, as is implied in the objection, then must the two forms of action be similar in kind though opposite in direction; and nothing is more familiar to us than the production by a given action of an action opposite to itself. Does not the contraction of a substance in cooling produce expansion in the substances around, the fall of one scale of a balance, the elevation of the other? Is not every motion in a limited space (if it be not a vacuum) of necessity two equal and opposite motions? What else, in truth, is the conception of a vibration but that of an action producing action of an opposite kind? As when a tense string deflected from the straight line is let go, its motion towards the central line reproduce the deflection.

I conclude, therefore, that there is no reason why chemical change should not have its part with other forms of action in



determining the operation of the formative force, if observation afford evidence that it is so; and in this statement that particular form of chemical action concerned in the decomposition of the tissues is of course included.

Now, that chemical change does stand in this relation to the organizing process is indicated by very numerous facts, of which those that follow are only examples. The albumen of the seed partly decomposes with exhalation of carbonic acid, as the embryo germinates; decomposing organic substances are the seats in which fungi and animalcula are developed; the increased organic action produced by light in the leaves of plants is preceded by a decomposition in those leaves,\*

In fermentation, the yeast sporule grows while the liquid decomposes; and in this case the organic development cannot be obtained without the decomposition, while the decomposition may take place, although more slowly, without the organic development. To these instances we may add those before alluded to in respect to the animal body—the decomposition which takes place in the first stage of digestion; the breaking up of portions of the substance of the developing embryo (the relation of which to the development of other parts has been noticed by Mr. Newport); and the part borne by functional activity, which means active decomposition, in effecting not only the maintenance but the increased nutrition of the organs.

Such facts as these justify us in placing decomposition in organic tissues among the circumstances which give rise to the organizing process; and their force is greatly increased by the evidence afforded by the phenomena of inflammation itself. For in this affection, whatever there may be of additional formative action, points to a primary action of a decomposing character as its source, the origin of the entire series of inflammatory changes being always traceable to causes which overthrow the vital equilibrium and operate injuriously to the organic state†.

For a full appreciation of the bearing of the phenomena of inflammation on this argument, it only needs to be remembered that a disturbance of the vital condition, or lowering of the vital force, is not the inducing a merely passive condition in the part affected, but that there necessarily arises under those circumstances an active change, although not a vital one in the strict sense of the term; a decomposition of the tissues which the vital condition warded off and restrained. To diminish vitality is to permit a change more or less intense in the chemical constitution of the body. A heavy body sustained by any force, falls and produces action when that sustaining force is removed or weakened.

\* See Draper, *On the Forces concerned in the Organization of Plants*.

† See especially Mr. Paget's *Lectures on Surgical Pathology*, vol. 1. p. 437.

So after death the body decomposes; it is in a truly active state, though not a vital one—an active state which can only be prevented by means which operate to forbid the play of the elementary affinities within it. Such is the “increased action” in which inflammation commences; from such action, all the increase of the vital energies which may be displayed in its course directly or indirectly draws its origin.

Still, it may be said, the conception of inflammation as a chain of effects, commencing with an excess of decomposing action in the part which is its seat, is unsatisfactory, and that in two respects. First, that the conception of excess or defect is too impalpable and abstract; the standard to which a reference is implied is not sufficiently defined. The “normal state,” or equilibrium, itself perpetually oscillates within wide limits, and how can disease be defined by a reference to health, when health is definable only by a reference to disease? And secondly, that the inflammatory process presents many characters other than those of quantity, which involve diversities of kind or mode of action, and cannot be formulated as differences of degree alone.

The first of these objections is more plausible than valid. The idea of excess or defect is perpetually had recourse to in other cases, and found not too indefinite even for rigid science. A watch may go too fast or too slow; the spring may be elastic in excess, or in defect. The steam in a boiler may be expansive in excess, or the resistance be defective. Nor is it true that health is to be defined only by a reference to disease; for the functions and uses of a living body are as definite as those of any mechanical contrivance. There is a standard, known by experience, to which the balanced processes of growth and decay should conform, and deviations from which of any considerable amount manifest themselves by precise and definite results.

The second objection has more weight, and indicates another of the causes that have made the theory of inflammation so difficult.

The phenomenon is complex, and demands analysis. The various conditions to which the term is applied refuse to be brought under any single definition which is not so vague as to be almost unmeaning, as that of an abnormal nutrition, for example. But since all of them in common do present symptoms which we describe as those of inflammation, it is impossible to narrow the meaning of the term by limiting the cases to which it is applied. Only one course is open, but that is the same which is adopted in all like cases; the points of agreement, being abstracted, may receive a common name. Now the points in which all cases of inflammation agree are those which have been mentioned, of an increased formative action consequent upon an increased decay. To these conditions, therefore, the

name of inflammation should be confined. Whatever other circumstances—whether of abnormal nutrition, or of any other kind—may be present in addition, that name of inflammation should have no reference to them. Many of them doubtless are causes of inflammation, such as the morbid diatheses, or poisoned states of the blood; but between them and inflammation itself no confusion should be allowed. The gouty, or rheumatic, or scrofulous diathesis, may be an “abnormal nutrition” (perhaps such conditions are better designated by that expression than inflammation is); but as they are perfectly separable from inflammation, so is inflammation, even when occurring with them, or as their consequence, perfectly distinguishable from them. Little progress, I venture to submit, can be made towards clear conceptions on these subjects until this distinction is recognised, and the different elements of the morbid process in what are termed specific or unhealthy inflammations are held apart, and receive their separate investigation. The constitutional morbid condition is one thing; the inflammatory action is another.

But though the connexion of inflammation with various diseased conditions has embarrassed the interpretation of the phenomena, by leading men to mix together in their thoughts elements that required to be distinguished, yet it affords an insight, hardly else to be obtained, into the use and meaning of that process in the animal economy. For if the decomposition of the tissues in inflammation be a source of increase in respect to the vitalizing action, an immediate utility becomes evident in it. In diseased conditions of the system, the vital power is depressed; in the inflammations to which they give origin there is a source of increase of the vital power. Certain textures fail in their vitality owing to the defective vitality of the whole, and that failure is attended with chemical processes in them, which generate in their reaction an increased energy of vitality. In a word, inflammation, destructive as it seems, is in one point of view strictly a conservative and remedial process. In respect to the individual, it is the sacrifice of a less for a greater good. The benefit of it is often very evident, as when a blister induces healing of an indolent ulcer, or mechanical irritation the union of old-standing fractures. It is indeed from such cases as these that the theory of “increased vital action” draws its chief support; for as a fact, such increase is in these cases undeniable. But though less obviously, yet not less truly, I conceive, is the reactive process in inflammation in every case a salutary, that is, a saving or restorative process. That we do not see it so, is that we do not sufficiently perceive the elements involved in the case. We do not carry our thoughts back to the loss or defect of the vital power which necessitates it, and to which it stands



in the relation of a remedy or amelioration. Doubtless it is an evil; so is a forming callus, or a granulating wound. But these are less evils than a useless limb or a torpid sore, and so is inflammation a less evil than the mere decay and loss which would be without it. It is ever to be remembered that the symptoms of increased activity in the inflammatory process can never go beyond their cause, can never exceed the defect of vitality of which they are at once the effect and the sign. How violent soever or injurious in their results, the evil is not in them, but in that approximation to death for which they are the divinely appointed and only remedy. True, the results are often disastrous, the materials effused in inflamed organs may interfere with essential functions, or the excitement of the general system may exhaust the powers. But this is because the loss of vitality has existed in a great degree, or has effected a texture of primary importance. An organ that has suffered inflammation is a damaged organ, but it is a better one than if it had not inflamed: a constitution may thereby be weakened, but it might otherwise have sustained a severer injury. So far as is possible, inflammation restores a life that has been lost: it adds to vitality, not detracts from it; loss of vitality is its starting-point, but not its essence. I do not deny, indeed, that the effects of the inflammatory re-action may be injurious, and in a secondary way, as by mechanical pressure or otherwise, may give rise to evils serious or even fatal: nor that it may be wise in many cases to seek to moderate or subdue it. These are questions which experience must decide; they do not affect the physiological significance of the process.

And this aspect of inflammation becomes the more evident when we view it in relation to the other processes which constitute organic life. I have said it is an exaggeration of the *functional* activity, and with some of the functions it corresponds not only in being a decomposition followed by nutritive action, but also in this, that a certain amount of the force, generated by the decomposition, is given off from the organic to the inorganic world. The heat of inflammation answers in this respect to the mechanical force of muscular contraction. But the function to which inflammation seems most nearly to approximate is that of secretion. Almost it appears as if one might speak of it without violence as a new secretion. To this idea, indeed, Marshall Hall may perhaps be said to have lent the sanction of his great authority, adopting the name of "excito-secretory" for inflammatory action produced by eccentric irritation, such as dentition, or the application of cold to the surface. Almost we might conceive the very same process to be secretion in an organ supplied with ducts, and inflammation in one in which ducts are not present: the secreting glands to be normally in a state

which were inflammation in any other organ. Nor is it otherwise than favorable to this conception, that when the function of some of the secreting glands is hindered, other parts perform a compensatory action through the medium of inflammation. The urea which should pass off by the kidneys may find exit in the fluid of a pleurisy.

Doubtless, between the processes of inflammation and secretion there are many and important differences, but the question is whether there be not also an interesting and instructive likeness. Not least among such points of likeness may be the vitalizing, organizing power exerted on the blood by the secreting glands, or some of them, and this by virtue of retrograde changes involved in the process of secretion\*.

So far, secretion and inflammation would agree as an increased vital action produced by a decomposing change; in the one case normal, in the other abnormal, but in both the decomposition being due to diminution or withdrawal of the controlling force. And as the natural secretions are rendered necessary by the normal life, are the results and complements of it, without which it could not be maintained, so may not specific inflammations be new secretions rendered necessary by that altered life which constitutes the morbid diathesis? As secretion is to life in the healthy state, so is inflammation to life in disease.

But there are other events in the natural life of various organisms to which the inflammatory process bears an analogy. Such are, for example, the reproductive processes of some of the lowest animals, as excited by cold or injury. Mr. Paget has remarked respecting the production of organized material in inflammation, that it is of large amount, but of the lowest grade. Now a large amount of material of the lowest organization is produced in the gemmation of the polypes, which we know to result from some of the causes which give rise to inflammation in the higher animals. Does not inflammatory new production answer to an abortive gemmation? Especially does this appear when we extend our consideration to the case of repair, for between the gemmation of a hydra when wounded, and the granulation of a wound in man, is there not an obvious parallel?

Nor can I pass from this subject without again adverting to the phenomenon of embryonic development. When we see one portion of the germ deliquescing and other portions developing, as if at their expense, can we avoid recognising in it a similari-

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\* See Bernard's Experiments on the Effect of Secretion in rendering the Blood red instead of black as it issues from the Glands. The physiological doctrine, however, is entirely independent of these experiments. Dr. Prout says of excretion, "this function operates by denuding the matters excreted of their vitality which is retained, and separating the excrementitious matters in the form of common chemical compounds."

ty to that which is the essential part in inflammation? Is it not as if, in inflammation, the system, under the pressure of adverse circumstances, threw itself back, as it were, upon the mode of existence proper to the embryo? As if, to retain as much as possible of perfectness under conditions threatening to destroy it, the law of its first formation came again into operation? The process which develops the life of the germ comes in to remedy defect of life in the completed animal. Not, indeed, by any special alteration of the laws of its being, but by the operation of the universal conditions of organic existence. For the processes of life in germ and adult are the same; different to our imperfect view they may appear, but the essential identity is made manifest in disease. The generation of life from death, organization from decay, striking to sense in germ-life and in inflammation-life, is patent to the reason equally in the life of maturity and health. It is the law of life. No new thing is presented to us in inflammation. The embryonic powers come forth in disease to meet the hostile agencies, only because they are at work unseen in all the operations of the vital force\*.

And if inflammation be thus parallel to the processes of health, no less may its relation be seen to other morbid conditions. Of these it may suffice to select for the comparison the class of tumours. Differing in all other respects, these two diseases appear to possess in common but the one element of increased formation, yet, if what has been advanced respecting inflammation be well grounded, it affords a sufficient basis for the establishment of an intimate connexion between them. For if the increased formation in inflammation has its origin in increased decomposition, the same, it would appear, must be the case with tumours. Let it only be granted that such an origin is possible, and the evidence in favor of it is abundant. If all the known causes of adventitious growths be analysed, they will be found to correspond very closely to those of inflammation. They are causes of irritation, things that operate antagonistically to the vital power. Whether local or general, they have this character in common. How often the development of a tumour follows a blow, for example. It has indeed been frequently remarked

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\* Dr. W. Addison has observed the resemblance of the morphological conditions in inflammation to those of the embryonic state. (*On Healthy and Diseased Structure, &c.*) If it should occur to any one as an objection to this view, that by inflammation the vital integrity is lowered and not elevated, it will be sufficient to remind him that an injury to, and loss of, the vital integrity, is the sole occasion of inflammation. The inflammatory action seldom or never wholly repairs this loss, but its tendency is in that direction. Such repair is its object, its final cause or use in respect to the organic body. A man is not ill because he has an inflammation, but he has an inflammation because he is ill or injured. In reference to this view of the subject I have been greatly benefited by the perusal of an unpublished paper, entitled 'The Philosophy of Disease.'



that it appears almost a matter of accident whether a given injury shall produce an inflammation or a tumour. All the evidence, therefore, which assigns an anti-vital starting point for inflammation, applies with equal force to tumours. Nor does the increased formation in the one case furnish any opposing evidence that would not bear equally upon the other. The distinction, then, between tumours and inflammation is not that the one disease is primarily of the formative process, the other of the decomposition. In this respect they do but appear to differ. They are both increased formation, due to increased decomposition; that is, to a diminution of the control maintained in the living state over the chemical affinities existing in the body. But they differ in the extent and intensity of this decomposing process; in inflammation it amounts to a true destruction, in part of the vital condition, with a giving off of force to the inorganic world; in tumours it produces only an increased local activity of the organizing process. So far these affections resemble each other; they have this *dynamical* correspondence. But into other questions relating to tumours, of course I do not enter. A condition that appears like a gradation between inflammation properly so called, and the growth of a tumour, may be seen in the increased formation of bone from chronic inflammation\*.

It remains to consider the particular symptoms and terminations of inflammation, in so far as they bear upon the view suggested of its nature. But of these it is not necessary to speak at length. For, in the first place, the insufficiency of microscopic observations to furnish any clue to the essential character of the inflammatory process has been proved, and indeed admitted, long ago. Opposite theories dispose of them equally well, and the most minute investigations respecting them do plainly leave us entirely in the dark. In truth, these phenomena are to be interpreted by a sound theory derived from other and more appropriate facts, and not the theory to be framed on suppositions about the meaning of these phenomena. Very important and suggestive it is to know the particulars respecting contraction or dilatation of the arteries, the stasis of the blood, the aggregation of the corpuscles, and the nervous or other conditions associated with these, when we know to what essential changes, as respects the forces concerned in the life of the organism, they are to be referred. But we may gaze on such appearances for ever, and remain merely in blind wonder, or blinder theories of mechanical obstruction, paralysis, or mysteriously altered qualities. This is but a caricature of science.

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† As indicative of the close connexion which has been felt to exist between inflammation and tumours, I may refer to Mr. Simon's representation of malignant disease as an *excretory process*—a “new secretion,” we might say, the very conception which has suggested itself so strongly in respect to inflammation.

And it is also undesirable to say much about these local phenomena, because we know so little. It is almost impossible to attempt to explain them without assumptions which go beyond our knowledge, and therefore, without creating hypotheses which are neither necessary nor useful. To me it seems sufficient to say at present that, under given circumstances, such conditions of the vessels and the blood have been observed. The facts must be valuable, but as yet they are not available for use. This, however, we know, that neither any state of the vessels, nor of the nervous system, can be primary or even essential elements in the inflammatory process. For a condition identical with inflammation occurs in plants. What else is the "increased formation" occasioned by the deposition in them of the larvæ of insects? The same cause which in the leaves of plants occasions swelling, hardness, and excessive formation of abnormal structure, produces in the animal textures heat, redness, swelling, pain, and the formation in excess of lowly organized tissue. Would it not be unreasonable to refuse to recognise identity of condition? In the plant, then, we see inflammation in its purest and simplest form, and so understand at once the secondary part which must belong to any changes affecting the specifically animal structures.

But if the conditions of the circulation be of little moment in respect to the essential nature of inflammation, they are of the greatest importance in respect to its progress and terminations. Constriction or dilatation of the vessels, stagnation or altered qualities of the blood, merely consequences though they be of dynamical changes wholly independent of them, may nevertheless be the chief agents in determining the course and results of the inflammatory process. The accumulation and stagnation of the blood in a part may be a cause of sloughing or of gangrene; its excess, with or without co-existent alterations in its quality, may prevent the restoration of the normal vitality, or may give rise to effusions of various kinds. So it may become a matter practically of the utmost importance, to control or remove the accumulation of blood in an inflamed organ. The issue of life or death may depend on it. But these therapeutical questions are so far distinct from that which has been the subject of this paper, that they are better treated independently. I would remark only, that if inflammation be, as I have sought to show, a two-fold process of increased decomposition and increased formation, having its source in a diminution of the vital control over the coerced chemical affinities in the living textures, a general conception of the appropriate treatment is easily deducible therefrom. If it be possible, let the vital power be restored, and the suspended control reinstated; all our efforts should be directed most strenuously to this end, to prevent or diminish that failure of the

vital tension from which the active symptoms of inflammation spring. But if this be not possible, then let the resulting changes be so regulated as may be best adapted to conserve at once the sufferers general strength and the integrity of the affected organ. If the action be threatening from its violence, let those means be adopted which check decomposition or divert the flow of blood. But ever and above all, let two things be remembered : first, that the process of inflammation, as it meets our view, is not wholly an evil ; that the *formative* process in it is the witness of, and the remedy for, an injury to the system unseen and too often unthought of by us. If we could remove all these symptoms, there would still remain that condition which has necessitated them ; a worse evil, a more serious disease, in combatting which we should have deprived ourselves of our only ally, in having set aside Nature's only remedy. There would still remain that diminution and loss of vital power which no art of ours could then supply : a death in life from which we might well shrink in impotent dismay. Let it be remembered ever, that where the cause of inflammation in failing vitality exists, there inflammation will be. No power of ours can prevent it, nor could it be anything but most disastrous if it did. All her resources, all her life, will nature pour into the gulf of local inflammation rather than suffer the deteriorated organ to fail of its support. The quick sympathy compels all the living powers to that work, and sooner should the veins be drained of blood, and the most vital functions droop and fail, than the weakened member not receive its larger share.

And sccondly : In cases of constitutional inflammation the morbid condition of the system is a cause continually operating to produce that lowered vitality on which the symptoms of inflammation depend, and the removal of that diseased state is the means whereby those symptoms must be averted.

In conclusion, I remark that inflammation is rightly enough represented as an altered nutrition. I have endeavored not to controvert this view, but only to add somewhat to its definiteness and value. As a formative or vital process, dependent on a decomposing or chemical one, it corresponds to the clearest conception of nutrition that we can gather from the phenomena of life in all its forms. Inflammation is the same process that constitutes all nutrition, but taking place under conditions other than those which are natural to, or best for, the individual organism in which it is excited. As an abnormal nutrition, it not only is illustrated by the other phenomena of life, but serves also to illustrate them. The process of nutrition receives elucidation from the comparison as well as gives it. For that which is found to be the essential character of inflammation, must be not less essentially the character of nutrition. This is perhaps



the advantage that results from the establishment of the parallel between them, that all the knowledge which is obtained by a study of the phenomena of inflammation, more definite and susceptible of rigorous investigation as they are, may receive a direct application to the more extensive and difficult problem of nutrition.—[*Brit. and For. Med. Chir. Review.*]

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*Narcotic Injections in Neuralgia.*

CHAS. HUNTER, Esq., House Surgeon to St. George's Hospital, records (*Med. Times and Gaz.*, Oct. 16th) the following cases of neuralgia treated by narcotic injection into the part, as proposed by Dr. A. Wood, of Edinburgh.

CASE I.—J. G., aged 55, was admitted into St. George's Hospital, July 21, under Dr. Pitman, with tic douloureux. He had been constantly subject to it for four years, with but little intermission; at one time he obtained for a few weeks from seven to eight hours' sleep at night, but with that exception he used always to be in pain day and night, and seldom slept an hour without a violent paroxysm.

On admission, he was suffering these repeated violent attacks of pain all over the left side of the face, which caused him day and night to keep up a cry of anguish. Various remedies to palliate the pain were attempted, but unsuccessfully till the 7th of August, when the local injection of morphia was commenced. About one grain and one-third of the acetate of morphia was injected at 8 P.M.; the man fell asleep very soon after, and continued to do so for seven hours. During the next few nights the same dose was regularly injected, and he slept either all night or for several hours.

On the 11th, he was asleep when visited, so no more morphia was injected; he, however, slept two hours; the next few nights the injection was not given; he slept either not at all, or most indifferently.

16th. A larger dose was injected into the cheek from within the mouth; he went off to sleep at once, and did not awake all night; he was also easy the whole of the next day; after this the original dose was continued, both night and morning.

20th. He sleeps a good deal; has good nights, and two or three hours' sleep in the day. The paroxysms are now so slight, that often no one except the patient can tell when they are on; no continued pain is felt, and the paroxysms are "sometimes off for half a day, often for several hours."

30th. Until to-day the morphia has been injected night and morning; but for the present the administration is left off on account of a considerable sized abscess which has been gradually forming the last few days, and which was opened to-day.

The part injected was the gum over a back upper tooth, as that was the most painful part, and the spot which, if touched, always brought on a paroxysm; latterly, the adjacent tissue of the cheek was injected close to the gum.

Thus, not only was sleep procured, but the patient obtained considerable ease during the day while the injection was gone on with. The constant recurrence of the attack of pain was put an end to, and the paroxysms, when they did occur, were far milder; but a large abscess formed in the cheek.

CASE II.—E. P., aged 18, was admitted into St. George's Hospital, July 25, under Dr. Tatum, suffering from excessive neuralgia in the right eye, which was also extensively diseased. As there were no hopes of saving the eye, and the pain was constant, the globe was removed for fear the other eye should also suffer; unfortunately it did, and ran a most rapid course—the lids becoming swollen, hard, thick, and everted; the neuralgia in this eye became even worse than it had been in the other.

All kinds of remedies were tried—aconite, morphia, hyoscyamus, opium, quinia, etc., all failed to give relief; chloroform was then used, and frequently, but it only gave her ease and sleep for a few minutes, or at the most an hour or so.

Sept. 9.  $\frac{3}{4}$  gr. of morphia (the acetate) was injected under chloroform into the eyelid, but produced no sleep, as sickness (which had commenced in the afternoon after a dose of morphia by the stomach) continued during the night.

10th. No morphia given by the stomach,  $1\frac{1}{2}$  gr. injected under chloroform into the eyelid; she went off to sleep for seven hours continuously, which she had not done for some months. She slept also once or twice the next day without chloroform.

11th. Injection repeated 10 P.M.; a part escaped; she slept four hours; had acute paroxysms between the periods of sleep.

12th. Sleep produced by the injection, and the severity of the paroxysms much diminished.

In the next few days the morphia was injected, and gave ease and sleep in proportion to the amount injected; from this time no chloroform was employed while inserting the point of the syringe in the skin.

16th. Slept four hours last night. The pain now is nothing to be compared to what it previously was, the swelling is going from the eye. In the evening nearly three grains of morphia were injected; sleep was immediately produced, and continued eight hours. The next day she was far quieter and easier, and appeared so comfortable at night that no morphia was injected.

18th. No morphia having been injected, no sleep was obtained last night, although a six-hour dose (gr. i.) was continued to be administered by the stomach.

19th.  $1\frac{1}{2}$  gr. injected into the eyebrow, gave sleep for several

hours at night, and a little in the day ; at night two grains were given by the stomach ; it gave no sleep, but after an hour or so caused considerable sickness.

Oct. 4th. The morphia injection is still continued, and with considerable relief to the patient.

*Remarks.*—In this patient, then, it appears:

1. That a very great change has been made for the better, the progress of the affection appears arrested ; or, at all events, for the present kept at bay ; the health of the patient is improved.

2. That the local affection appears so far improved, that all the hardness, thickness, and eversion of the conjunctiva have subsided ; the pain in the head is very much less, the pain in the eye is far less acute, and the attacks much less frequent, so that sleep is every now and then obtained during the day without medicine.

3. But it must be observed that this girl, like the man, has had abscess as a result of the local injection ; the eyelid, the eyebrow, and the side of the eye, have all been opened for the liberation of matter.

4. It is very interesting to observe, that in this girl the injection of morphia into the cellular tissue was most effectual ; but that morphia given by the stomach was of no benefit at all, but always did harm ; that general irritation to the nervous system was produced ; that sleep hardly ever followed, and was then probably accidental, because so seldom, but that sickness, nausea, giddiness, etc., almost always accompanied its administration by the stomach, whatever the strength of the dose happened to be.

In considering the results of the trial of the local treatment in the two cases, the advantages obtained appear to me to be—

1. That much less constitutional (nervous) irritation attends the local introduction of the narcotic than when it is given by the stomach.

2. That the effect of the narcotic is more immediately produced.

3. The action of the narcotic appears more sure when injected. The exact amount taken into the circulation can be more readily seen, and the risk of contamination or alteration which it is exposed to, given by the stomach, is avoided.

4. It appears to exert more benefit on the local affection when it has to be absorbed from the part affected itself, probably from being brought more directly into contact with the nerves involved in the disease.

On the other hand, there are the disadvantages ; these are chiefly—

1. The pain occasioned by the introduction of the fine caula.

2. The chance of the fluid escaping from the wound or puncture.



3. The production of local inflammation, effusion of blood, abscess.

To conclude: are the disadvantages of such import that they ought to preclude the local employment of narcotics by injection? do the advantages preponderate over them? I think they do; and that the disadvantages are only those which, with care and experience, may either be avoided, or much diminished; for instance—1. By employing such a syringe as that used for the perchloride of iron (to inject aneurisms, etc.), with a very fine point to the nozzle, the pain is not more than that occasioned by the prick of a needle. 2. By having the injecting tube no larger than that of such fine syringes, the puncture in the integument is so small that the fluid does not escape. 3. With regard to the formation of abscess; it is only, for the most part, after repeated injections have been made in one place that such happens. One great thing then to avoid it is, to vary as much as possible the exact site to be injected, still injecting in the painful part, or to cease injecting for a time. The necessarily acid state of the solution of the morphia (for it must be strong), is certainly another disadvantage; but as irritation to the integument appears produced, as little acid as possible ought to be employed, and any excess in the solution neutralized by potash. These inconveniences being obviated as much as possible by the means pointed out, I think such advantages as the more rapid introduction of the remedy into the system, the avoidance of constitutional (especially nervous) irritation, the greater certainty of the effect, and the more concentrated effect of the remedy on the painful part ought not to hinder the local treatment of neuralgia from having a fair trial.—[*Am. Jour. Med. Sciences.*

### *Pathology of Rheumatism.*

DR. FRANCIS T. BOND analyzes (*Midland Quarterly Journal*, April and July, 1858) the prevailing doctrines regarding the intimate nature of rheumatism, and objects, with regard to the lactic-acid theory, which may be said to be the one most generally prevailing at present:—1. That lactic acid has not been shown to be in excess in the blood of rheumatic patients; 2. That, even supposing it to be present in excess, it would be difficult to trace the connection between this circumstance and the exudations in and about the different fibrous structures of the body; 3. That other acids being in excess in the secretions, and therefore possibly in the blood, they may be as much the cause of the phenomena as lactic acid; 4. That, in regard to the theory attributing the disease to suppression of the cutaneous excretions, it is doubtful whether it is preceded by greater sup-

pression than the prodromata of all inflammatory diseases bring with them; and, 5. That the extreme tendency to sweating which occurs during an acute attack of the disease may be much better explained by another theory.

In order to establish a theory of rheumatism, Dr. Bond next analyzes the phenomena of the disease, and finds that fatigue, exposure to cold, mental emotions, or some other depressing agent, exercise a paramount influence in its production; febrile symptoms making their first appearance, followed by local affections in some fibrous tissue. A hyperinotic condition of the blood exists from the first, and the excessive fibrin having a special affinity for the fibrous structure, is specially deposited in and about them; hence the joints and the valves of the heart become the chief seats of the local affection. The preference shown in different cases for particular joints depends upon their greater weakness, or upon their labouring under some abnormal condition, upon the principle enunciated by Mr. Paget, that the depressed nutrition of a joint makes it more liable than any other part to be the seat of inflammation excited by the diseased blood. Dr. Bond's theory, then, reverses the order in which the different constituents of the diseases are commonly supposed to stand. Instead of regarding the hyperinosis merely as an effect of the reaction of the local disease, upon the system at large, he considers it to be the primary source of the exudation, the causative agent of the latter, without which it could never exist. The increase in the urinary and cutaneous secretions, and the greater amount of urea, uric acid, lactic, phosphoric, and other acids in them, the author attributes to the metamorphosis of the fibrin; these substances being the products of the degradation of fibrinous matter, "the relations of urea and uric acid to highly nitrogenized matters—as exhibited by the experiments of Lehmann, by the recent manufacture of urea by oxidizing albuminous substances by M. Béchamp, and by the general excess of these excreta in the hyperinotic states of the blood, combined with that of lactic acid, to the muscular juice as determined by the researches of Liebig—amply corroborate this statement as far as these three bodies are concerned; the others, from the smallness of their amount, may be put out of consideration."

Dr. Bond considers the sources of an excess of fibrin in the system to fall under three heads: 1. As a result of imperfect primary assimilation; 2. As a result of a metamorphic process, normal in nature, but extreme in amount; 3. As a result of defective elimination of the fibrin by the excretory processes provided for the purpose.

Having said thus much, we must refer our readers for the conclusions which the author draws as to treatment to the

paper itself; we will merely add that his theory possesses a great resemblance to that propounded by Mr. Toynbee, a short time back, at the Medico-Chirurgical Society, shortly after the publication of the first part of Dr. Bond's paper.—[*Brit. & For. Med. Chir. Rev.*, and *Am. Jour. Med. Sci.*]

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*Dislocation of the Fourth and Fifth Cervical Vertebrae.*

DR. W. M. RYER records (*Pacific Med. & Surg. Jour.*, Sept. 1858) a case of this rare accident. The subject of it was a girl seven years of age, of lymphatic constitution, the daughter of Dr. Hepburn, of Mokelumne Hill. When seen by Dr. R., the patient's head "was most singularly and immovably fixed, much bent to the side, the ear approximating but little in advance of the right shoulder, and in a position no child in a normal condition could for a moment assume; the slightest motion tending to change the relative position of the head and body producing intense pain.

"The father, Dr. Hepburn, an aged and very intelligent practitioner of medicine, had watched the child with a parent's solicitude for the six previous days and nights, and neither during sleeping or waking did the child move its head from the position it had assumed from the instant of the accident. As the right clavicle was fractured at the time, the doctor was inclined at first to believe the child was favouring the fracture and was unwilling to entertain the unpleasant thought of so serious a complication as luxation of the spine.

"The child had fallen six days previous to my visit, from a high bed, and is supposed to have struck the back and left side of her head. The father saw her within a half minute after, and found her head and neck distorted precisely as at the time of my examination; there had been no change for six days. Such distortion, I believed, must have arisen from muscular contraction or bony displacement. We examined every muscle whose contraction would be likely to produce the deformity, and found them loose, soft, and uncontracted. Upon tracing the spinous processes from below to the articulation of the fourth and fifth cervical vertebrae we found them form, at this point, an obtuse angle, and depart from the natural direction about forty degrees. The intellectual faculties were good, and sensation and motion not greatly impaired. I could form no other diagnosis than was formed by the medical gentlemen in attendance previous to my visit. It was clearly a dislocation of the left oblique articulating process—the process of the fourth riding over the upper margin of the one with which it was articulated below.



“As objections were made to the administration of chloroform, we attempted the reduction without it, and failed. We then administered this anæsthetic and succeeded to our fullest anticipations, Dr. Soher, and other gentlemen who assisted, distinctly recognizing the instant of time when the reduction was effected. The child immediately had full motion of her head and neck, and is now entirely recovered.”—[*Am. Jr. Med. Sci.*

*The Extent to which Ether should be used in Midwifery.*

IN a discussion on this subject at a late meeting of the Norfolk District Med. Soc. (Mass.), Dr. Cotting of Roxbury, gave the following as the result of his experience:—

“In our own individual experience in several hundred cases of normal labour, we have been led to observe—that only a very few patients were capable of taking just that amount which would deaden the acuteness of the suffering without at the same time diminishing the frequency and effectiveness of the uterine contractions\*—that generally, as suspension of consciousness approached, there was a marked and proportionally complete suspension of the expulsive efforts—that, with the greatest care possible under the circumstances, there was frequently more or less irritation of the air-passages; often troublesome coughing; sometimes nausea and vomiting, attributable directly to the anæsthetic; also, occasionally strong tendencies to hysterical manifestations, which sometimes continued after the labor was over; with other minor inconveniences, such as unwonted impatience, jactitation, &c., &c.; so, also, instances, not a few, of subsequent retention of urine; as well as post-partum hemorrhage from imperfect uterine contraction, apparently due to the same agent—that, although something was apparently gained by the occasionally greater relaxation of the organs, the duration of these labours was unmistakably longer than those of a similar character in which an anæsthetic was not used; and, in general, there seemed to be greater subsequent debility, and a slower getting up than was to have been expected—that we have never witnessed any undoubted evidence of subsequent *permanent* injury to the life or health of the mother or child arising from the use of ether during labour.

“In abnormal cases—from a considerable experience in all the various operations from podalic version to craniotomy and other disintegration of the foetus, both before and since the discovery of these anæsthetics—our conclusion is that while the judicious use of ether immeasurably increases the ease, certainty and effectiveness of obstetric operations, the insensibility of the patient, when desirable, and her comparative safety, are bene-

\* This is our experience.—[EDTS. S. M. & S. J.]

fits to be obtained through its administration whose value is beyond all estimation.

"In puerperal convulsions, whether identical with uræmia, according to the latest theory, or otherwise, anæsthetics during the paroxysms seem to be supplanting what but yesterday was considered the only orthodox practice. The convulsions seemed to be completely controlled by the use of these agents in the few cases in which we have had occasion to administer them.

"Such has been our private experience. We do not know that it is at variance with that of any observant practitioner.—Whatever suggestions we may have gained from the reports and practice of others, it is not improper to say that we here advance nothing practical which has not been confirmed by personal observation, the results of which alone are suited to this occasion and the object of the present discussion.

"Bearing in mind, then, that the great object of our art is the diminution of human suffering; and that in the economy of nature the pains of parturition may have some ultimate beneficial purpose; and further that, as sufficient time has not yet elapsed since the discovery of the anæsthetic powers of these agents to fully disclose all the consequent effects of their administration, much must be left in each individual case to the intelligence, judgement and tact of the medical attendant—bearing all this in mind, we conclude with the following generalizations:—

"I. That in ordinary cases of midwifery, while *ether* may be allowed in moderation when importunately demanded by the patient, it is quite as well in the long run, to say the least, to let normal, uncomplicated labours proceed uninterfered with.

"II. That in painful, laborious, or complicated labour, and in cases of great tenderness or great rigidity of the organs, of extraordinary susceptibility to pain, and where there is great nervous irritability, or undue apprehension of danger, ether, if favourably received, should be used to the extent of overcoming the abnormal condition and suffering.

"III. That in cases requiring manual or instrumental interference, ether should be used to the same extent, and upon the same general principles as in other operations involving pain and danger to the patient.

"IV. That in puerperal convulsions, especially in those having the characteristics of uræmic eclampsia, ether should be given as soon as there are indications of an approaching fit, and be continued, if seemingly efficacious, until the paroxysm has subsided and quiet sleep is induced; or until other medicine, if desirable, can be swallowed—care being taken to allow a sufficiently large quantity of pure air, and not to continue the ether if coma supervene.

"V. That all the volatile anæsthetics yet tried, except ether,

have been known to cause severe accidents, and even instant death, though given with the greatest care by experienced practitioners, and this, too, before any considerable quantity had been inhaled; ether only should be used as an anæsthetic in midwifery. Ether, likewise, should be administered with the greatest caution, so that the safety of the patient may not be unnecessarily put at hazard."—[*Boston Med. & Surg. Jour.*

*On a peculiar Black or Blue partial Coloration of the Skin, which is sometimes observed in Women, particularly round the Eyelids.*

By LEROY DE MERICOURT.

BESIDES the four cases of this singular affection described by Neligan, M. quotes one case described by Yonge in 1709. She was a girl of 16, native of Portsmouth, never menstruated, and black coloration gradually disappeared in six months; and another described by Billard in 1813, also a girl of 16, whose face, neck, and upper part of the breast, particularly the brow, *alæ nasi*, and round the mouth, presented a beautiful blue color, which could be wiped off with a towel, and colored the white linen. She had menstruated regularly for two years; and from that date had observed the blue coloration round her eyes, which disappeared in the open air, but speedily returned, so soon as she began to work in a warm close room. After a year, the blue coloration spread over her face, neck, and belly, and no longer disappeared in the open air. Subject to a dry cough, she occasionally expectorated a little blood, especially about her menstrual period, after this had passed, accompanied by vomiting and expectoration of blood; she was paler, breathed more freely, and the blue coloration was almost gone; increased heat and vascular excitement brought out the color stronger; the blue color was tested by various re-agents; and as amongst those which neutralized the colour, bicarbonate of soda seemed the least hurtful, it was given internally and in twelve days the coloration was once more restricted to the circumference of the eye, the brow, and the *alæ nasi*. M. has himself observed in Brest no fewer than five cases; the first three he relates summarily, as they occurred some years ago, and the phenomena were incompletely manifested. The respective individuals were from seventeen to twenty years of age, previous health in two of them normal, in the third dysmenorrhœa, hysteria, and megrim co-existed. Twice the dark coloration came on, after sudden suppression of the menses. In one case, fainting, headache, palpitation, and oppressed breathing, were the immediate results of the suppression, the coloration beginning two days subsequently on the upper and lower eyelids, other dark stains likewise making their appearance on various parts of the body.



The dark color was paler in the morning, and became darker after exposure to any excitement or high temperature. After two years her catamenia recurred; the dark color, however, remained, withstanding the effects of marriage and several confinements, experiencing, however, a perceptible diminution during lactation. Since then the color has become markedly paler, although the menses are still incomplete. In the second case, there was also markedly less color in the morning, which could also at such times be partly wiped off, but speedily recurred; in this case, as well as in the third, the color remained during pregnancy. The fourth case was a newly married woman; aged twenty-two, who first menstruated in her seventeenth year, and a year after, while menstruating, fell into the water up to her waist, whereby the menses were suddenly suppressed, and she was seized with headache, palpitation, oppressed breathing, and colic pains, and also expectorated blood several times. Four days subsequently, she remarked a dark coloration of the lower lids, which speedily increased in extent and intensity. Four months after the menses recurred, the black color remaining, however, much the same, paler in the morning, more remarkable after excitement or exposure to high temperature; lately, however, it has become much less. The fifth case was a brunette child's maid, aged twenty, who menstruated first at seventeen, and had been hitherto in good health. About two months ago, three days after normal menstruation, she remarked a dull blue coloration of both lower eyelids, which had next day assumed a darker tint, like china ink, and extending down the cheeks. Examination with a magnifying glass showed that, as in Neligan's case, the coloration depended on a multitude of dark points, wiping with a towel stained the latter; but neither wiping nor washing sufficed to remove the color. This coloration, according to M., consists in a pigment deposit on the surface of the epidermis. Neligan and Hebra have supposed, from the punctated appearance of the coloration, that its seat was in the sebaceous follicles. M. rejects this, because any connection between menstruation and these follicles is unknown, while pigmentation stands in acknowledged relation to many uterine conditions, as pregnancy for example. M. particularly refers to the evanescence and mutability of the coloration in several cases as incompatible with this theory of its origin, and without speaking positively, seems to regard the punctated appearance as more probably depending on pigmental alterations of the openings of the perspiratory ducts. The eyelids are the chief seat of this coloration, partly because of the fineness of their integuments, partly because of the acknowledged sympathy of the eye with the sexual organs. M. considers that Neligan's definite, "*Stearrhœa nigricans*" is erroneous and prema-

ture, and that a circumlocutory title is to be preferred, until more is known regarding the nature of the affection. From the ten cases already described, M. draws the following conclusions: *Etiology*.—The individuals affected were from sixteen to twenty-two years old; two were sixteen; eight had not yet menstruated; the disease always commenced in the unmarried state. In eight cases there were either dysmenorrhœa or amenorrhœa; only in one case was menstruation unaffected; thrice there was sudden suppression of the menses (twice after exposure to cold, once after mental excitement). Nine cases occurred in towns situate near the sea, five of these in Brest. Two patients were of fair complexion (Blondinen). The *eruption* of the disease was usually sudden, yet it always took some days to reach its height. The shortest duration of the disease has been three months; another case has already lasted seven years. In tedious cases, the coloration endures in spite of the return of the menses, or parturition itself, though both bring about variations in it. In one case nursing was beneficial. Its disappearance was never sudden, always gradual. The *therapeutics* must always have respect to the apparent prime cause, anormal menstruation; the due regulation of that is sometimes followed by disappearance of the coloration, always by a diminution of its tint.—[*Archives Générales*, and *American Jour. of Med. Sciences*.

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*Broth and Beef-Tea.* By Dr. J. B. HICKS, London.

I have ventured to occupy a few lines with a description of an apparatus, constructed to my directions, for making broth and beef-tea, &c., which, though simple, possesses what is I believe a desideratum for the invalid, namely, the property of producing broth

1. Free from fat,
2. Free from smoky flavour,
3. Ready for use five minutes after removal from fire.

Every one knows how disagreeable to a delicate appetite, or a sickly stomach, is the smallest amount of fat floating on broths, and how annoying it is to the medical attendant to be told on inquiry in a case of urgency, that the patient had refused the broth ordered, in consequence of grease or smoke, or that he had to wait some hours for the fat to cool before removal.

The apparatus consists of two tinned vessels, one fitting loosely into the other. The outer is furnished with a small stop-cock set flush with the bottom. There are three small knobs about a quarter of an inch, soldered beneath, to keep it off the saucepan, and allow water to flow under; also a wire handle, and covered like a small milk-can. The latter has a small hole in centre to allow steam to escape, and is slightly convex to

throw off the wet. The inner vessel is perforated at the bottom, and has on its rim a small projection for the finger to draw it easily out. In using it, place the one in the other, fill the inner with the meat, pour in cold water, cover over and place in a saucepan which has been partly filled with cold water; cover that over; gently simmer for four or five hours. When done withdraw the apparatus from the saucepan, uncover and draw out the inner vessel containing the exhausted meat, press out the broth it retains into the outer vessel, which now contains the fatty broth. Wait five minutes to allow the fat to rise to the surface, then draw off the broth by the tap, shutting it off just before the fat is about to come, when it must be stopped. The broth will be found to be perfectly free from fat or smoke. Should fat have accidentally escaped, return the whole to the vessel, wait five minutes, and draw off again. A glance at the apparatus will show its principle, and it is not so troublesome as the jar inside the saucepan. I send a section of it. I have used one constantly at home, and all who possess them speak highly of their certainty and convenience.—[*Med. Times and Gazette.*

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*Delirium Tremens Treated with Chloroform.* Under the care of Dr. P. FRASER, at the London Hospital.

B. G., aged 32, a japanner by trade, residing in Stepney, was admitted on May 8th, under the care of Dr. Fraser, suffering from delirium tremens. He was immediately sent into the attics; and on account of his extreme violence, male attendants were provided for him.

About 8 o'clock, chloroform was administered. It took a very small quantity to bring him under its influence. Its action was kept up for an hour, after which he continued in profound sleep. The attendant was ordered to send for the medical officer if he awoke; this, however, was unnecessary, as the patient did not wake till Dr. Fraser's visit at 1 P. M. He still suffered from many delusions. After he was left, he fell asleep without the administration of the chloroform, and slept for two hours, when he awoke and partook of some beef-tea and brandy. He had also a powder, consisting of five grains of calomel with fifteen grains of jalap.

At 8 P. M., he was restless, with no delusions; complained of pain in his head.

At 11 P. M., he was still restless, and said he felt no tendency to sleep; his bowels had been relieved.

Chloroform was again administered; a large quantity being required this time to remove the stage of excitement. He continued to sleep for four hours.



May 9th. The delirium has entirely left the patient, and he has made a very tolerable breakfast of bread and butter and milk. He was ordered milk diet and beef-tea, three ounces of brandy, and a pint of porter. He slept in the evening.

May 10th. He was ordered to have middle diet and a pint of porter, and to omit the brandy. He slept well.

May 11th.—He was ordered three grains of calomel and a scruple of jalap. In the evening, he was removed from the attics to the wards, and slept well.

May 12th. He was ordered decoction of cinchona with five grains of sesquicarbonate of ammonia three times a day.

May 15th. He was discharged cured, and left the hospital.

On enquiry of the patient since his recovery, it was found that he was taken ill on May 4th, and that the practitioner called in to attend him gave him medicine to "sleep him," as the patient says. He has never been an habitual drunkard, but has been in the habit of taking as much beer as he could without getting drunk.—[*British Med. Journal*, and *Braithwaite's Retrospect of Practical Med. and Surgery*.]

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*On the Treatment of Scarlatina.* By R. H. MEADE, Esq., Senior Surgeon to the Bradford Infirmary.

[THE treatment of the severer forms of this disease is often most unsatisfactory, and the introduction of any remedy more successful than those in general use, would be a boon to the profession. Scarlatina has lately been very prevalent and fatal in Bradford, and the symptoms presented by many of the cases bore a close analogy to those of erysipelas, and were treated in the same manner by the author. Mr. Meade says:]

I had long been convinced of the value of the tonic and stimulant treatment in all forms of erysipelas, and formerly placed my chief confidence in ammonia: I found however, that the mineral acids with quinine were more efficacious, and generally prescribed them, until a few years back, when the tincture of sesquichloride of iron was recommended. Though the value of this remedy has been doubted, I have found it so useful, that I regard it almost as a specific, both in the idiopathic and traumatic forms of the disease; and invariably prescribe it both in hospital and private practice; and I have been assured by other medical men that they have equal faith in its virtues.

Having so much confidence, therefore, in the tincture of iron in erysipelas, I determined to try it in scarlatina, and I have, accordingly, given it during the last winter and spring to every case that I have seen, with the exception of a few, which were so slight as scarcely to require any medicine. The success of

this treatment has exceeded my expectations, and I have had only one fatal case since I commenced its use. Several cases, in which the symptoms set in with severity, were apparently cut short by it; and almost all the cases in which I gave it recovered with unusual rapidity. I gave it in doses varying from five to fifteen minims, according to the age of the patient, every three or four hours; and when the throat is ulcerated I also apply a solution of nitrate of silver to the fauces. Several of my medical friends have tried the tincture of iron at my suggestion, and have reported favorably of its use.—[*Med. Times and Gaz.*

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*Muriate of Ammonia in Neuralgia.*

Some of the preparations of ammonia have long been in use in France, Germany, and elsewhere, as remedies in various nervous affections, with variable success. At the Salpêtrière and the Bicêtre hospitals in Paris, the valerianate of ammonia has been much used in epilepsy for years, in the formula of three parts of valerianic acid, two parts of alcoholic extract of valerian, water ninety-five parts, and sesquicarbonate of ammonia in sufficient quantity to neutralize the acid. The dose is a drachm three times a day. Latterly, the muriate of ammonia has been brought forward on the authority of the Germans, as valuable in neuralgia, especially of the face, and we have recently had the opportunity of seeing it tried in a favorable case, at Guy's Hospital, under the care of Dr. Wilks, and, so far, with some benefit. The patient is a man aged fifty-five, who has been subject to facial neuralgia of the left side for the last four or five years, during which period he has undergone various modes of relief ineffectually. He was put upon half a drachm of the muriate, in water, every six hours, and although he has not been more than a week under this treatment, he is certainly much relieved, the pain having diminished. Even supposing that this man is cured, a more extended trial of the agent is required to warrant the eulogium passed upon it by the Germans. In certain forms of chronic diarrhoea it is really a valuable agent. [London Lancet.

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*Changes of the Blood-Cells in the Spleen.*—The opinions of physiologists as to the functions of the spleen have been various. Some, as Funke, Hewson, Bennett, &c., believes it to be a generator of blood-cells, while Kölliker and others maintain that it is a destroyer of them. Dr. Henry Draper relates (*N. Y. Jour. of Med.*, Sept. 1858) some microscopic investigations made by him on the blood of frogs taken from the splenic artery and splenic vein, and he found the latter to contain at least double the general average of imperfect cells; whence he infers that "the spleen must be an organ for the disintegration of blood-cells."

[*American Jour. of Med. Sciences.*

## EDITORIAL AND MISCELLANEOUS.

## Death of Professor George M. Newton.

By an inscrutable degree of Divine Providence, we are called upon to sadden our pages with the melancholy record of the death of one who long and ably held a distinguished position in our Profession—as an elegant Lecturer, successful Teacher, and a man of profound Science. Professor GEORGE M. NEWTON has been cut off in the prime of life, and the news of his death will becloud the countenances of thousands of Medical Students and Physicians who, in times past, have enjoyed the benefit of his teachings in the Medical College of Georgia, as they read the melancholy circumstances of his demise.

The following brief sketch, prepared for the daily papers, by one of his earlier colleagues, who knew him even longer than we did, we transfer to our pages, feeling confident that it will be more acceptable than anything we can say on this sad occasion:—

“It becomes our melancholy duty to announce the death of one of our most respected citizens—Dr. GEORGE M. NEWTON. He died at his residence in this city, Thursday morning, at nine o’clock, of *tetanus*, caused by injuries received some weeks ago, when he was thrown from his buggy.

“Dr. NEWTON was born in this city in the year 1810. After completing his collegiate career at the University of Georgia, he engaged in the study of Medicine; and, graduating with honor at the University of Pennsylvania, he spent several years in the Schools and Hospitals of Paris. Soon after his return to his native city, he was elected to the Chair of Physiology in the Medical College of Georgia; but was subsequently transferred to the Chair of Anatomy, which he filled for about twenty years with distinguished ability.

“It may be said with truth that he had in this position no superiors, and but few equals. About two years ago he retired from the duties of his profession, carrying with him, in his retirement, the profound respect of his colleagues, and of hundreds of physicians scattered over the land, who had had the good fortune to be his pupils.

“On the occasion of the announcement, in the *Southern Medical and Surgical Journal*, of the resignation of Professor NEWTON, and the publication of the proceedings of the Board of Trustees on that event, (in the June, 1857, number of the Journal,) the Editor said:

“PROFESSOR NEWTON.—In giving place to the above kind expressions of the Board of Trustees, it can scarcely be expected that we will refrain from recording our own personal tribute to one, with whom for fifteen



years, we have been a co-worker in the same field, and whose place in the Faculty we are now called to occupy. Sustaining towards him for many years, the near relation of Prosecutor and Demonstrator, we have had ample opportunity of knowing and appreciating his merit, as the perfect Anatomist—the urbane Teacher—the erudite Lecturer—may he be as happy in retirement as he has been useful in public. Difficult, we are fully aware, will it be for us to fill his place, but among our qualifications for the task, we do highly value the advantage, of having had ever before us, such a model in the Art, as Professor GEORGE M. NEWTON.”

“At the time Prof. NEWTON resigned the Chair of Anatomy, the Board of Trustees of the Medical College, at an adjourned meeting on the 2nd of May, 1857, passed the following resolutions:

“*Resolved*, That his resignation be accepted, under the assurance that any effort to induce his withdrawal of the same would be unavailing.

“*Resolved*, That we here record our testimony to the faithfulness, zeal and ability with which Prof. NEWTON has uniformly discharged the duties of his chair.

“*Resolved*, That as a mark of personal regard, and of our high appreciation of his services, Prof. GEORGE M. NEWTON be, and he is hereby, appointed, Emeritus Professor of Anatomy, with the request that whilst exonerated from formal and stated duty, he will yet continue to lecture to the classes whenever his leisure and inclination may permit.”

“Dr. NEWTON never engaged in the active duties of his profession. An ample fortune enabled him to devote his time to the cultivation of literature and science. His mind was clear, acute and vigorous. His judgment was rarely at fault. His will was resolute, and he never faltered in carrying out his plans and purposes. Had necessity compelled him to exert his faculties, he would have reached the highest rank in his profession. But his merit was excelled by his modesty; and he shrunk from the public gaze, and revealed his character in all its excellencies only to his friends. His integrity was unimpeachable, while his benevolence was large, but unostentatious. In his death, our city has lost one of its most valued citizens. He bore his painful disease with unflinching fortitude, and met death with resignation, and, we trust, with hope.”

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The following record, taken from the daily newspapers of the city, will serve to show how highly he was regarded by his colleagues and by the students of the Medical College of Georgia:—

MEDICAL COLLEGE OF GEORGIA, Jan. 7, 1859—10 A.M.

At a meeting of the Faculty and Students of the Medical College of Georgia, on motion of Prof. H. V. M. Miller, Prof. I. P. Garvin was called to the Chair, and the following gentlemen were appointed Secretaries—

viz: W. E. Link, South Carolina; W. W. Peel, Georgia; B. S. Isbell, Alabama.

The Chairman, in a few appropriate remarks, announced the death of GEORGE M. NEWTON, M. D., late Emeritus Professor of Anatomy in this Institution.

On motion of Prof. H. V. M. Miller, the following gentlemen were appointed as a committee to draft suitable resolutions in respect to the memory of our distinguished Emeritus Professor of Anatomy, GEORGE M. NEWTON, M. D.—viz: On the part of the Faculty, Prof. L. D. Ford, and on the part of the Class, J. R. Slayton, Alabama; H. A. McKittrick, South Carolina; D. C. Young, Tennessee; E. E. Andrews, Georgia; M. A. Gastin, Texas; M. M. T. Huchingson, Florida; Colin Bethune, North Carolina—whereupon the committee reported the following:

*Resolved*, That the Faculty and Students of the Medical College of Georgia have heard with profound regret, the melancholy intelligence of the death of GEORGE M. NEWTON, M. D., late Emeritus Professor in this Institution. His long continuance with this College, his distinguished ability as a teacher, his nice sense of honor, his genial and social qualities, his benevolence of heart, his unobtrusive modesty, gained for him in this life our highest admiration, and warmest personal attachment, which renders it peculiarly proper that we give some feeble expression of our sorrow for his death, of our respect for his memory, and our sense of the greatness of our loss.

*Resolved*, That the exercises of this College be suspended for this day.

*Resolved*, That we join the procession to the place of interment.

*Resolved*, That we wear the usual badge of mourning the remainder of the session.

*Resolved*, That the proceedings of this meeting be recorded in the minutes of this College, and that they be published in the newspapers of the city.

I. P. GARVIN, Chairman.

B. S. ISBELL, Ala.,	} Secretaries.
W. W. PEEL, Ga.,	
W. E. LINK, S. C.,	

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*The Science and Art of Surgery: being a Treatise on Surgical Injuries, Diseases, and Operations.* By JOHN ERICHSEN, Professor of Surgery and of Clinical Surgery in University College, and Surgeon to University College Hospital. An improved American edition, from the second enlarged and carefully revised London edition, illustrated by four hundred and seventeen Engravings on wood. 1 vol., pp. 996 royal octavo. Philadelphia: Blanchard & Lea. 1859. (For sale by Thomas Richards & Son, Augusta, Ga.)

To prepare a complete and yet a convenient and uncumbrous work on Surgery, is, at the present day, one of the most difficult feats of modern literature. Surgery has grown into a vast science which, in order to

present it in its entirety, requires not one but many volumes. The author, therefore, who exercises the best judgment in the selection of his materials, and who embodies in his work the essential parts of *all* its various departments, and yet wastes no space in protracted discussions, is ever the one whose Treatise on Surgery will be found the most useful both to the Practitioner and to the Student of Medicine. Prof. Erichsen has regarded these precepts perhaps more successfully than any writer of the present day. Adding largely to it in the present edition, he has shewn excellent judgment in still keeping his materials within the bounds of a single volume. The numerous wood-cut illustrations, amounting to four hundred and seventeen, give a definite and most graphic view of every thing in which the *coup d'oeil* can aid us—and the descriptions in the text are clear, terse and to the point.

The American Publishers have done full justice to themselves and to this great work, in the style of execution both of the printing and lignographing, and in the present edition they present to the American Profession one of the most complete and comprehensive and yet most convenient works on the Theory and Practice of Surgery to be found in any part of the world. We commend it now, as we have ever done, to the purchase and careful perusal of all Practitioners and Students. Perform no new operation about which you may be doubtful, until you consult Erichsen;—he is reliable.

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OUR LIST OF PAYMENTS.—In behalf of our worthy publisher, we thank our readers for the very encouraging list which our cover presents this month. It is wonderful how we advance in our ideas of expenditure, with the extension of our pecuniary resources. Pope, in whose satires we find every human motive and feeling most clearly presented, illustrates this restlessness in a few lines :

“I’ve often wished that I had clear,  
For life, six hundred pounds a year—  
A handsome house to lodge a friend,  
A river at my garden’s end,  
A terrace walk and half a rood,  
Of land set out to plant a wood.  
Well, now I have all this and more,  
I ask not to increase my store,  
But here a grievance seems to lie,  
All this is mine but till I die;  
I can’t but think ’twould sound more clever  
To me, and to my heirs forever.”

We think we can illustrate this almost as well as Mister Pope:—A few months ago, our friend, Mr. Jeremiah Morris, the laborious, indefatigable publisher of the Southern Medical and Surgical Journal was a most “frugal swain whose only care was to increase his store,” sufficiently to



meet his current expenses. We "baited with honey," and sent our bag round for the collection of subscriptions—they have come pouring in; it has enabled him to procure his paper, ink, type, &c., and a small residue remains, which doubtless he could find many to borrow; but no, he has a better application in view, with the interest of THE JOURNAL ever uppermost in his heart; his ambition now points to a *Power Press*, with which he will be able to print more expeditiously, and at less expense and labor, the monthly issues of the Journal. We heartily join him in his laudable desire, as will every one of our readers.

There is yet on his books about \$800 of back subscriptions, which we know, by experience, will be promptly paid *without asking for it*. He only waits the receipt of this amount to add to what he now has on hand, and he will order his power press. Our readers may feel assured, that, with the extension of his facilities, their own interests will be cared for in the preparation of a better and, probably, even a larger and more comprehensive Journal.

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*Port Wine Enemata as a Substitute for Transfusion of Blood in cases of Post-Partum Hemorrhage.*—Dr. H. L. Williams recommends enemata of port wine in cases of post-partum hemorrhage, and records (*British Med. Journal*, Sept. 4, 1858), a case in which he successfully resorted to it. The patient was in the most alarming state of prostration, pulseless at the wrist, with cold extremities, &c. Dr. W. commenced by administering four ounces of port wine with twenty drops of tincture of opium. The patient speedily manifested signs of improvement. In half an hour he repeated the enema, with marked advantage, and the patient was soon out of danger.—[*American Jour. of Med. Sciences*.]

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THE CHARITY OF SPEECH.—When every physician and every medical journal is moved by the following impulses, we shall have the millenium of medicine:—

"Can a higher compliment be paid to a man than to say he speaks no ill of any one? And is any man better spoken of by all than he who never opens his mouth to the detriment of his fellow creatures? And does any one in the long run live more happy than he? The charity of speech surpasses that of almsgiving; the latter, even if it be the widow's mite, is rewarded by the feeling the donor experiences, but the latter waits for its reward. The impulse that prompts one to look kindly upon his *brother's sins* of omission or commission, even while living as he would, if he were dead, that prompts to suppress all mention of the evil within him, and readily to acknowledge his good traits, to speak of man with the same delicacy of women, to remember that there is no existing creature without some redeeming trait—this impulse is one of the noblest that actuates the mind, and dwells within the heart. We never meet one who has a kind word for the faults of another, without the mental conviction that he would be the first to lend him a helping hand."—[*Newspaper*.]