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From the Author
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Half-Moon St. W. Piccadilly,
London - July 20th 1870.

CLINICAL MEMORANDA.

Memoranda of Medical Clinic at Charity Hospital, New Orleans, Louisiana, 1869-1870: By JOSEPH JONES, M. D, Professor of Chemistry in the Medical Department of the University of Louisiana, New Orleans.

SECTION I.—DISEASES OF THE NERVOUS SYSTEM.

SUMMARY.

- Loss of Mental Power (partial insanity) ending in coma, delirium, and death; and attended with structural alterations of Brain.*
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- Dementia, Paralysis, and Death; Clots in Corpora Striata and Optic Thalami.*
- Effects of Superstition upon Negro Race.*
- Practice of Obcah or Witchcraft by Negroes; Effects upon mind and body.*
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- Remarkable case of Cerebro-spinal Disease, attended with Convulsions, recurring at short intervals, and attended with protracted Somnolence.*
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Paralysis—progressive, failure of muscular and nervous power ; structural alterations in spinal cord.

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Facts from various authors, illustrating the importance of the study of Diseases of the Nervous System.

Facts illustrating the influence of the Nervous System and mental impressions in the production and cure of diseases.

CASE I.—Loss of Mental Power (partial insanity), ending in Coma, Delirium and Death, and attended with Structural Alterations of the Brain.

CHARLES U., aged 28 years; native of Dublin, Ireland; has been in the United States Army for several years, served during the recent war, and worked his way up from the ranks to the position of 1st Lieutenant; was mustered out of service at Greenville, in March 1868, at which time he moved to New Orleans, and entered the family of Mrs. A. Patient assisted Mrs. A. in various ways, doing work about the house as directed. After a time, about six months before his final illness, it was noticed that the patient exhibited less intelligence than formerly. The intellectual powers appeared to fail gradually, and the patient became "unreliable," and when sent on an errand, would go to some other place than the one specified. Three weeks before his entrance into the Charity Hospital became delirious and insensible, with short lucid intervals, when he appeared to recognize Mrs. A. and her family. Bowels constipated, and during three weeks, is said to have had only one action from the bowels. The attending physician applied a blister over the head, and administered purgatives, but without any apparent benefit.

Entered Charity Hospital March 8th, 1869, ward 29, bed 430. Medium height; blue eyes, light hair, red beard; reduced in flesh; lies in a state of delirium and apparent insensibility; cannot be aroused; twitching of tendons and picking at bed-clothes. Bowels obstinately constipated; passes his urine in the bed, has a powerful ammoniacal odor.

Purgatives were freely administered, and a blister was applied to his head; these measures, however, produced no perceptible benefit, and the patient died on the fourth day after his admission.

Autopsy Eight Hours after Death.—The *Brain and Spinal Marrow* were carefully removed. The pia-mater and arachnoid were thickened, with fibrinous deposits thrown out, especially along the track of the blood-vessels.

The two hemispheres of the brain were firmly adherent, and could only be separated by dissection with the scalpel.

Blood-vessels of pia-mater greatly congested with blood. Grey matter of brain congested; white matter somewhat softened. Fibrinous effusion around base of brain.

Pia-mater and arachnoid of spinal cord, greatly congested with blood and the bloodvessels of the spinal cord were not only distended to their full capacity with blood, but they also presented a tortuous and varicose appearance. Grey matter of cord somewhat congested; white matter softened. The spinal cord was removed and examined throughout its entire length.

The blood-vessels of the brain presented not only an enlarged appearance, but thickened walls.

Microscopical examination showed that the fibrinous effusion was being organized, and that the changes in the membranes of the brain were of slow development, and dated back in their origin, weeks and even months.

The two hemispheres of the cerebrum, were so completely adherent, that the longitudinal fissure could be displayed only by the use of the scalpel and considerable force.

The sympathetic nervous system was dissected out, and examined microscopically, no evidence of disease was discovered in it.

The *lungs* and *heart* were normal. The abdominal viscera presented nothing unusual, with the exception of a light bronze color of the liver, and some enlargement of the spleen.

These changes of the spleen and liver however, were of long standing and had no connection whatever with the fatal attack. The liver and spleen, when cut and exposed to the action of the atmosphere, assumed a bright arterial hue.

Kidneys congested, but otherwise healthy.

In this case we have an instance of the connection of deranged mental action with structural alteration of the brain and its membranes.

CASE II.—*Temporary Insanity, occurring occasionally during a period of years, followed finally by Loss of Mental Power, Paralysis and Death. Structural Alterations discovered in the Brain and Spinal Cord.*

John L. B., native of Mississippi, aged 50 years, admitted to ward No. 28, bed 416, October 20th, 1868; was in comfortable circumstances previous to the recent civil war, and has a wife and family.

Twelve years ago attempted to take the life of his partner, without any known cause, and since this time has had occasional fits of temporary insanity, although he has continued in business.

Three years after the attack on his partner with fire-arms, he killed his horse, cutting its throat in the road, whilst harnessed in his buggy, without (as in the first instance), any known reason for the outburst of passion. The patient is said to have continued in a wild delirious state for several days after these violent manifestations. During the war lost his property, and at its close roamed about the country in a demented but harmless state.

At the time of his entrance into the hospital, walked with great difficulty,—spoke slowly and with effort, mind obtuse, and patient gives no rational history of his past life, each time giving a new story. In attempting to walk about the wards, fell several times; motions feeble and unsteady; apparent want of co-ordination of the muscular motions; cannot turn without help in bed, requires assistance in dressing. Sensation apparently impaired. General appearance that of a large, stout man, with full limbs, but in a low cachectic state, with pale, sallow complexion. Passes his urine and fæces in bed at night.

The powers continued gradually to fail, and with this progressive loss of muscular and nervous power, the circulation in the extremities appeared to grow more sluggish. January 1st, 1869, the patient has several large bed-sores upon the hips, caused by pressure, and the action of the involuntary discharges of urine.

The bed-sores were dressed with a cerate composed of one draehm of crystallized Carbolic acid mixed with one ounce of Simple cerate. The internal treatment consisted of one-twentieth of a grain of Strychnine, and fifteen drops of the tincture of the Sesqui-Chloride of iron, three times a day, together with the most nutritious diet afforded by the hospital; under this treatment, with attention to the state of the bowels, and to the personal cleanliness of the patient, with occasional blisters to the back of the neck, the general health improved in a marked manner; there was a temporary increase of muscular power, the patient became more cheerful and rested better at night; and at the same time, the effects of the iron were manifested in an improvement in the complexion. The bed-sores also, healed rapidly and fully. This improvement, however, was only temporary, and in the early part of February, the difficulty of walking became so great, and the tendency to fall, even when sitting in a chair, so constant, that the patient was compelled to lie the most of the time in bed. Remains as usual in a vacant, listless state.

The powers have progressively failed up to the present time, February, 19th, when the patient lies in a state of mental vacuity, with mouth open, and eyes staring, unable to answer the simplest question intelligently; with almost complete loss of muscular power in the lower extremities, and with large bed-sores forming upon the exposed parts of the trunk, notwithstanding every effort to prevent their appearance, by friction and stimulating applications.

The students had daily opportunities of witnessing the gradual and progressive failure of the intellect, and muscular and nervous forces in this patient; the progressive loss of power, was also clearly shown in the fact that in December, the patient was able, with supports on either side, to walk down from the third story of the hospital to the floor of the amphitheatre on the first floor. In January it was necessary to bring the patient down in a chair; and at the present time he lies prostrate unable to sit up.

It is worthy of note that up to the present time, there has been no fever, no increase of respiration or circulation, or of animal temperature, and the nutritive functions have been performed with regularity.

From the history of this case, we are justified in the conclusion that the disease of the brain has been of long standing; that the *insanity* was dependent upon some *structural alteration of the brain*; and that the *alteration*, degeneration or softening of the brain has gradually extended to, and affected the spinal system.

This case presents a progressive failure of the intellectual, nervous and muscular forces, without any sudden paralysis or contraction of the muscles, and the only sudden and violent nervous agitation with which the patient was afflicted since his entrance into the hospital was a slight convulsion about noon on the 12th of February, after making unusual efforts at sitting up and attempting to walk. So far as could be learned from a member of the medical class, this was the only attack of this kind that he had ever had, and we are led to exclude epilepsy as the cause of the progressive failure of the intellectual and nervous powers.

The patient continued progressively to fail; lay in an unconscious condition, occasionally groaning and crying aloud, especially at night, when he disturbed the entire ward. One fourth of a grain of Morphine, was tried at bed-time, without any special benefit. The patient does not reply when addressed, and appears to be wholly unconscious of any thing passing around him, and is oblivious of his distressing condition. Urine and feces passed in bed; bed-sore forming upon back over sacrum; circulation sluggish; surface of the skin in dependent portions of the body, of a purplish red, mottled appearance. Patient unable to turn in bed, or to move his lower extremities. When the feet and legs are pinched, the patient contorts the face, and evidently suffers pain.

The patient continued to sink; gradually lost the power of swallowing, and could take no nourishment; breath became very offensive, and the teeth loaded with sordes; four days before death, the right thigh was contracted and drawn up towards the trunk. Patient appeared to suffer pain when the attempt was made to straighten the limb.

Died March 3d, at 8 o'clock, P. M.

A careful *autopsy* was made the next morning, at 8 A. M., with the following result:

Exterior, full and not wasted; *heart* normal; *lungs* pale, but perfectly healthy, with no deposits; alimentary canal and all the abdominal organs, liver, spleen, and kidneys normal in appearance.

Head.—Well-formed and large cranium, with a symmetrical arch. Nothing peculiar, however, was noted with reference to the cranium.

Dura mater, firmly adherent to the bony structure; pia mater, greatly congested and thickened; the arachnoid was in like manner thickened, and presented much more of an opalescent appearance than usual.

Brain, large, well formed, and unusually firm. The blood-vessels of the nutritive membrane of the brain, were everywhere larger, more numerous and more congested than in healthy brains. This condition was in no manner connected with the mere stasis of blood, because it was as great in the most elevated portions of the brain, as in the most dependent. When cut, sections of the brain revealed a state of remarkable congestion. The congestion was greatest in the *grey matter* of the convolutions and of the optic thalami, giving to those collections of ganglionic water a pink high-colored appearance.

The blood-vessels of the brain *in all parts*, were larger and more numerous and more congested, than in healthy brains. The blood-vessels were not only congested, but they were *permanently enlarged*.

The large size of the small blood-vessels and even of the capillaries, as well as the state of congestion, imparted to the grey matter a deep pinkish tint.

Under the microscope, the ganglionic cells, of the grey matter, and ganglia of the brain appeared to be diminished in number, whilst the capillaries were increased in size, with thickened walls. Exudation corpuscles were observed amongst the brain structures, and especially along the tracks of the blood-vessels.

The pia mater of the spinal cord was congested in a similar manner. The spinal cord was covered all around by a network of large anastomosing (varicose) blood-vessels, engorged with blood. The blood-vessels appeared to be fourfold more numerous

than in health. Upon section, the blood-vessels of the spinal cord, in all parts, were found to be similar to those of the cerebrum and cerebellum. They were greatly enlarged and congested with blood.

The vessels were largest, most numerous and most eongested in the grey matter (ganglionic central eolumns), of the interior of the cord. So marked was the enlargement of the blood-vessels of the cord, and so great was the congestion of blood in them, that the grey matter of the cord; everywhere presented a bright-red eolor, wholly different from the grey color of health. The eord was firm in texture. Under the microscope, the ganglionic eells appeared to be more numerous in the grey matter of the spinal cord, than the grey matter of the brain; and the capillaries were enlarged and their walls greatly thickened. *Exudation corpuscles, were also seen in the neighborhood and around the capillaries; and both in the spinal cord, and in the brain, some fragments of the coloring matter of the blood were discovered in the textures.*

It is a question whether the insanity was caused by this congested and enlarged eapillary circulation. *The temporary nature of the fits, as well as their violence, would indicate that the primary lesion existed in the circulatory apparatus of the brain and spinal cord.*

In this ease, we have as in the preceding one, an instance of *the connection of deranged mental action with structural alterations of the brain.*

It is of great importanee to the science of medicine, that every case of insanity, should not only be subjected to the most rigid investigation during life, but also that the most careful examination of the nerve structures, should be made after death.

The brain is liable to disease, as well as any other organ in the body, and as it is the organ of the intellectual faculties, it makes a vast and important difference in our pathological views and therapeutical principles, whether we regard insanity as connected with and dependent upon structural alterations, or as a disorder of the intellectual faculties and moral power.

Whilst various eauses may be aetive in the production of that terrible state, in which man is degraded to the level or the brute, by the loss of those powers which enable him to direct and eon-

trol the forces of matter, and even immaterial agents; it is certainly of great importance to medical science to determine with utmost accuracy the structural lesions of the brain and spinal cord, in all the various forms of insanity.

A wide and important field of research is opened to the medical superintendents, directors and attending physicians or the various Insane Asylums in this country. Each case of insanity should be subjected to rigid scrutiny; accurate measurements should be made of the cranium, and all peculiarities of conformation and of physiognomy should be noted and compared with the peculiar phases of the insanity; and this careful examination should be completed by a thorough examination of the brain after death. If a small portion of the funds of each State Asylum were devoted to the careful investigation and delineation of the peculiar conformation of the cranium and countenance (by photography), and to the publication of the annual results of the pathological labors conducted by competent men, important results would be achieved for the science of medicine.

Two other cases of mental derangement came under the observation of the students of the Medical Department of the University of Louisiana, illustrating the connection of mental derangement with structural alteration of the brain.

CASE III.—*Insanity caused by Syphilis: Structural Alteration of Brain.*

The case was that of a white female, who had had syphilis, and the mental derangement came on, after the super-vention of constitutional symptoms, and appeared to be directly referable to the structural changes induced in the brain by the syphilitic poison.

It was observed during the life of the patient, that she was insensible to bad odors. Thus, as she was suffering from diarrhoea, the excrementitious matters were frequently daubed upon her nose and face, by her own hands, and the patient appeared even in the lucid moments, to be wholly oblivious to their presence and offensive odor.

After death, it was found that the structures of the brain, were extensively softened and altered in the neighborhood of the origin of the olfactory nerves.

The alterations of the brain and the symptoms of insanity, in this case, were referred to the action of the syphilitic poison.

It has been established by the researches of various observers, that the brain may be affected *indirectly* by syphilis, as in caries, necrosis, exostosis of the cranial bones, gummy tumor of the skull, or deposits in the dura-mater, which membrane has been compared to an internal periosteum.

These lesions may excite inflammation of the dura-mater, which may extend to the arachnoid, pia-mater and surface of the hemispheres.

It has in like manner been shown that the brain may be *directly* affected by syphilis; the nervous substance being the seat of syphilitic gummy deposit followed by softening, and cases have been recorded, in which white and red softening of the cerebral substance have been caused by syphilis.

In the neuralgic affections, paralysis, epilepsy and dementia, following the appearance of the constitutional effects of syphilis, good results and even effectual cures may be obtained by the judicious use of the Bi-chloride and Bin-iodide of Mercury and the Iodide of Potassium.

Several cases of an intractable character, attended with intense pain in the head, cerebral symptoms and partial paralysis, have occurred in my hospital practice during the past fifteen months, and have been relieved by mercurials and the Iodide of Potassium.

One sixteenth of a grain of the Bichloride or of the Bin-iodide of Mercury has been administered in combination with Iodide of Potassium three times a day. In the severest cases of nervous derangement the Iodide of Potassium has been used freely, in doses varying from one to two scruples three times a day.

CASE IV.—*Dementia, Paralysis and Death ; Clots in Corpora Striata and Optic Thalami.*

In the other case the patient, a negro-woman, was brought into the hospital in a dull listless, speechless state, with loss of muscular power, and want of co-ordination of the muscular movements, and it was said by her companions that she had been the victim of sorcery or witchcraft. The disease was said to have been

suddenly induced in a state of [health, by an aged negress who practiced witchcraft.

After death it was found that blood-vessels had been ruptured, and blood extravasated into the grey matter and nervous structures of the *optic thalami and corpora striata*. The patient was a large stout old woman, apparently near seventy years of age, and the ruptured blood-vessels were found to be degenerated, having undergone fatty degeneration. It is possible that the rupture of the blood-vessels may have been the result of some unusual mental or physical effort.

As the practice of sorcery and witchcraft amongst the negroes in certain sections of the South, is thought to have been revived and extended since the war, we reproduce one of the fullest and most accurate accounts of the superstitious practices of the negroes.

The following very curious account of the extraordinary superstition of the African race, was transmitted by the agent of Jamaica to the Lords of the Committee of Privy Council, and by them subjoined to their report on the slave trade; and it is said to have been the result of the diligent researches and accurate pen of Mr. Long.

The term *Obeah*, *Obiah*, or *Obla*, (for it is variously written), we conceive to be the adjective, and *Obe* or *Obi* the noun substantive; and that by the word *Obia*—men or women, are meant, those who practice *Obi*. The origin of the term we should consider as of no importance in our answer to the questions proposed, if, in search of it, we were not led to disquisitions that are highly gratifying to curiosity. From the learned Mr. Bryant's* Commentary upon the word *Oph*, we obtain a very probable etymology of the term.—A serpent in the Egyptian language was called *Ob* or *Anb*—*Obion* is still the Egyptian name for a serpent.—Moses, in the name of *Ged*, forbids the Israelites ever to inquire of the demon *Ob*, which is translated in our Bible, Charmer or Wizard, Divinator and Sorcilegus.—The woman at Endor is called *Oub* or *Ob*, translated *Pythouissa*; and *Obbaïos* (he cites from *Horus Apollo*) was the name of the Basilisk or Royal Serpent, emblem of the sun, and an ancient oracular Deity of Africa. This derivation, which applies to one particular sect, the remnant probably of a very celebrated religious order in remote ages, is now become in Jamaica the general term to denote those Africans who in that Island practice witchcraft or sorcery, comprehending also the class of what are called *Myal-men*, or those who, by means of a narcotic potion, made with the juice of an herb (said to be the branched *Calatue* or species of *Solanum*) which occasions a trance or profound sleep of a certain duration, endeavor to convince the deluded spectators of their power to re-animate dead bodies.

"As far as we are able to decide from our own experience and information, when we lived in the Island, and from the current testimony of all the negroes we have ever conversed with on the subject, the professors of *Obi* are, and always were, natives of Africa, and none other; and they have brought the science with them from thence to Jamaica, where it is so universally practiced, that we believe that there are few of the large estates possessing native Africans, which have not one or more of them. The oldest and most crafty are those who usually attract the greatest devotion and confidence; those whose heavy heads, and somewhat peculiarly harsh and forbidding aspect, together with some skill in plants of the medicinal and poisonous species have qualified them for successful imposition upon the weak and credulous. The negroes in general, whether Africans or *Crooles*, revere, consult and fear them; to these oracles they resort, and with the most implicit faith, upon all occasions, whether for the cure of disorders, the obtaining revenge for injuries or insults, the conciliating of favors, the discovery and punishment of

* *Mythology*, vol. 1, pages 48, 475 and 478.

the thief or the adulterer, and the prediction of future events. Tho trade which these imposters carry on is extremely lucrative; they manufacture and sell their Obies adapted to different cases, and at different prices. A veil of mystery is studiously thrown over their incantations, to which the midnight hours are allotted, and every precaution is taken to conceal them from the knowledge and discovery of the white people. The deluded negroes, who thoroughly believe in their supernatural power, become the willing accomplices in this concealment, and the stoutest among them tremble at the very sight of the ragged bundle, the bottle or the egg-shells, which are stuck in the thatch, or hung over the door of a hut, or upon the branch of a plantain tree, to deter marauders. In cases of poison, the natural effects of it are by the ignorant negroes, ascribed entirely to the potent workings of *Obi*. The wiser negroes hesitate to reveal their suspicions, through a dread of incurring the terrible vengeance which is fulminated by the *Obeah-men* against any who should betray them; it is very difficult therefore, for the white proprietor, to distinguish the *Obeah professor* from any other negro upon his plantation; and so infatuated are the blacks in general, that but few instances occur of their having assumed courage enough to impeach these miscreants. With minds so firmly prepossessed, they no sooner find *Obi set for them* near the door of their houses, or in the path which leads to it, than they give themselves up for lost. When a negro is robbed of a fowl or a hog, he applies directly to the *Obeah* man or woman, it is then made known among his fellow blacks, that *Obi is set* for the thief; and as soon as the latter hears the dreadful news, his terrified imagination begins to work, no resource is left but in the superior skill of some more eminent *Obeah-men* of the neighborhood, who may counteract the magical operations of the other; but if no one can be found of higher rank and ability, or after gaining such an ally, he should still fancy himself affected, he presently falls into a decline, under the incessant horror of impending calamities. The slightest painful sensation in the head, the bowels, or any other part, any casual loss or hurt, confirms his apprehensions, and he believes himself the devoted victim of an invisible and irresistible agency. Sleep, appetite and cheerfulness forsake him, his strength decays, his disturbed imagination is haunted without respite, his features wear the settled gloom of dependency; dirt, or any other unwholesome substance become his only food, he contracts a morbid habit of hedy, and gradually sinks into the grave. A negro, who is taken ill, inquires of the *Obeah-man* the cause of his sickness, whether it will prove mortal or not, and within what time he shall die or recover? The oracle generally ascribes the distemper to the malice of some particular person; but if no hopes are given of recovery, immediate despair takes place, which no medicine can remove, and death is the certain consequence. Those anomalous symptoms, which originate from causes deeply rooted in the mind, such as the terrors of *Obi*, or from poisons, whose operation is slow and intricate, will baffle the skill of the ablest physician.

"Considering the multitude of occasions which may provoke the negroes to exercise the powers of *Obi* against each other, and the astonishing influence of this superstition upon their minds, we cannot but attribute a very considerable portion of the annual mortality among the negroes of Jamaica to this fascinating mischief."

"The *Obi* is usually composed of a farrago of material, most of which are enumerated in the Jamaica law,* viz., blood feathers, parrots beaks, dogs teeth, alligators teeth, broken bottles, grave dirt rum and egg-shells."

Pere Labat,† in his his history of Martiuco, has mentioned some instances of this practice which are very remarkable.

"It may seem very extraordinary, that a practice alleged to be so frequent in Jamaica should not have received an earlier check from the legislature. The truth is, that the skill of some negroes, in the art of poisoning, has been noticed here since the chemists became much acquainted with them. Sloan and Barham, who practised physic in Jamaica in the last century, have mentioned particular instances of it. The secret and insidious manner in which this crime is generally perpetrated, makes the legal proof of it extremely difficult. Suspicious therefore have been frequent, but detections rare; these murderers have *sometimes* been brought to justice, but it is reasonable to believe that a far greater number have escaped with impunity. In regard to the other and more common tricks of *Obi*, such as hanging up feathers, bottles, egg-shells, etc., etc., in order to intimidate negroes of a thievish disposition from plundering huts, hog-styes or provision grounds, these were laughed at by the white inhabitants as harmless stratagems, contrived by the more sagacious for deterring the more simple and superstitious blacks, and serving for much the same purpose, as the scare-crows which are in general used among our English farmers and gardeners. But in the year 1764, when a very formidable insurrection of the Koromantyn or Gold Coast negroes broke out in the parish of St. Mary, and spread through almost every other district of the Island, an old Koromantyn negro, the chief instigator and oracle of the insurgents in that parish, who had administered the fetish or solemn oath to the conspirators, and furnished them with a magical preparation which was to render them invulnerable, was fortunately apprehended, convicted, and hung up with all his feathers and trumperies about him; and his execution struck the insurgents with a general panic, from which they never afterwards recovered. The examinations which were taken at that period, first opened the eyes of the public to the very dangerous tendency of the *Obeah* practices, and gave birth to the law which was then enacted for their suppression and punishment. But neither the tenor of this law, the strict investigation which has ever since been made after the professors of *Obi*, nor the many examples of those who from time to time have been hanged or transported, have hitherto produced the desired effect. We conclude, therefore, that either this sect, like others in the world, has flourished under persecution; or that fresh supplies are annually introduced from the African seminaries.

*Passed 1760.

† Tome 11, p. 59, 447, 499, 509.

Bryan Edwards in his "*History, Civil and Commercial, of the British Colonies in the West Indies* (1806, vol. ii. p. 303"), quotes the following narrative from a planter in Jamaica, whom he characterizes, as a gentleman of the strictest veracity.

"Upon returning to Jamaica in the year 1775, he found that a great many of his negroes had died during his absence; and that of such as remained alive, at least one-half were debilitated bloated and in a very deplorable condition. The mortality continued after his arrival, and two or three were frequently buried in one day; others were taken ill, and began to decline under the same symptoms. Every means were tried by medicines, and the most careful nursing, to preserve the lives of the feeblest; but in spite of all his endeavors, this depopulation went on for above a twelve months longer, with more or less intermission, and without his being able to ascertain the real cause, though the *Obeah practice* was strongly suspected, as well by himself as by the doctor, and other white persons upon the plantation, as it was known to have been very common in that part of the Island, and particularly among the negroes of the *Papaw* or *Popo* country. Still he was unable to verify his suspicions, because the patients constantly denied their having any thing to do with persons of that order, or any knowledge of them. At length a negress, who had been ill for some time, came one day, and informed him, that feeling it was impossible for her to live much longer, she thought herself bound in duty, before she died, to impart a very great secret, and acquaint him with the true cause of her disorder, in hopes that the disclosure might prove the means of stopping that mischief, which had already swept away such a number of her fellow-slaves. She proceeded to say, that her step-mother (a woman of the *Popo* country, above eighty years old, but still hale and active) had put *Obi upon her*, as she had also done upon those who had recently died; and that the old woman had practiced *Obi* for as many years as she could remember.

"The other negroes of the plantation, no sooner heard of this impeachment, than they ran in a body to their master, and confirmed the truth of it, adding, that she had carried on this business ever since her arrival from Africa, and was the terror of the whole neighborhood. Upon this he repaired directly, with six white-servants, to the old woman's house, and forcing open the door, observed the whole inside of the roof, (which was of thatch), and every crevice of the walls, stuck with the implements of her trade, consisting of rags, feathers, bones of cats, and a thousand other articles. Examining further, a large earthen pot or jar, close covered, was found concealed under her bed. It contained a prodigious quantity of round balls of earth or clay of various dimensions, large and small, whiteyed on the outside, and variously compounded, some with hair or rags, or feathers of all sorts, and strongly bound with twine; others blended with the upper section of the skulls of cats, or stuck round with cats teeth and claws, or with human or dogs teeth, and some glass beads of different colors; there were also a great many egg-shells filled with a viscous or gummy substance, the qualities of which he neglected to examine, and many little bags stuffed with a variety of articles, the particulars of which cannot at this instance of time be recollected. The house was instantly pulled down and with the whole of its contents committed to the flames, amidst the general acclamations of all his other negroes. In regard to the old woman, he declined bringing her to trial, under the law of the island, which would have punished her with death; but from a principle of humanity delivered her into the hands of a party of Spaniards, who, (as she was thought not incapable of doing some trifling kind of work), were very glad to accept and carry her with them to Cuba. From the moment of her departure, his negroes seemed all to be animated with new spirits, and the malady spread no further among them. The total of his losses in the course of about fifteen years preceding the discovery, and imputable solely to the *Obeah practice*, he estimates at least one hundred negroes."

CASE V.—*Epilepsy.—Death.—Atrophy and Induration of the Cerebellum.*

The patient, a young man, died suddenly in an epileptic fit; or rather the patient became comatose after the convulsions and lay in an insensible state for eighteen hours before death.

The cerebrum was normal in its structure and appearance; the cerebellum on the other hand, was atrophied, and the grey and white matter hardened.

The grey matter of the cerebellum was greatly diminished in amount, and the hardening was of the most marked character.

A large amount of serous fluid, was effused between the dura-mater and the arachnoid membranes of the brain and spinal cord. The liver spleen and alimentary canal, appeared to be healthy; but both kidneys were atrophied, being not more than one-half the natural size, with numerous cysts, (containing light yellow fluid), scattered over the surface, and throughout the secreting structures; the surface of the kidneys presented a granular appearance. Both kidneys presented a pale color, more nearly resembling that of fatty degeneration than the normal color. The kidneys have been preserved in the Pathological Department of the Museum, University of Louisiana.

The results of the autopsy in this case are interesting, for in the great proportion of the brains of epileptic patients that have been examined, the structure of that organ has been said to have been in all respects healthy; and this terrible disease has been regarded as merely functional, the particular seat of lesion not being determined.

It must be admitted, however, that in some cases the brain and its membranes have been found in every state of disease to which these parts are liable; the former being indurated, or softened, the seat of various structural diseases, as abscess, cancer or tubercle, the latter being inflamed, thickened or ossified; and Wenzel has stated that the epileptic state has been invariably found associated with a morbid state of the *pituitary* body, in the *cella tursica*.

The occurrence of the epileptiform convulsion in this case, in connection with the marked pathological alterations and degenerations of the kidneys, appear to support the theory of this disease proposed by Dr. Todd. He referred the particular features of epileptic seizures to the general accumulation of a morbid material in the blood, from the cessation or impairment of the depurative functions of the kidneys, until it reaches such an amount as to operate upon the brain, as it were in an explosive manner, exciting a highly polarized state of the brain, or of certain parts of it, so that the nervous power is discharged upon certain other parts of the cerebro-spinal centre, in such a way as to give rise to the phenomenon of fit. A connection has clearly been established between defective renal action, the presence

of urea in the blood and epileptic convulsions; and in the present case, the most rational explanation appears to be to refer the fatal convulsions, to the arrest of the eliminative action of the kidneys.

This case illustrates in a striking manner, the importance of a critical examination of the amount, character and chemical constitution of the urine, in each case of epilepsy. Such investigations should not be limited to the paroxysms, but should extend also to the free intervals.

With reference to the treatment of epilepsy, it is important that the physician should make minute inquiry into the condition of all the organs and functions and habits of the patients; and establish the treatment upon correct diagnosis and general principles. Almost every potent agent in the materia medica has been recommended for the cure of epilepsy, and cures have been recorded sustaining the recommendation; but it will be found upon a careful study of the disease, that a certain per cent. of cases, get well gradually and spontaneously without the use of drugs; in females the affection is sometimes connected with derangement of the menstrual function, and when that is regulated, the disease may disappear, without farther treatment; in males masturbation and excessive venery may be causes of epilepsy which are to a certain extent controllable. Some cases are clearly referable to gastric and intestinal irritations and derangements, which may be removed or greatly benefitted by treatment; whilst a certain proportion of cases are dependent upon structural alterations of the kidneys, and upon both structural and functional derangements of the cerebro-spinal nervous system, and often march steadily on to insanity, idiocy or sudden death, uninfluenced by the most potent drugs. When epilepsy is clearly the result of the action of the syphilitic poison, the disease may be cured by mercurials and iodide of potassium.

Minute attention to the menstrual function, to the moral and mental habits of the patients, to the state of the digestion and bowels with rigid rules for diet, exercise and sleep, are all important.

Amongst drugs, Bromide of Potassium holds at present a high place with some practitioners; and certainly does good in some

eases, but like all remedies in this affection, its action is uncertain, and many cases are wholly uninfluenced by it. In the case of a stout young man, twenty-six years of age, afflicted with epilepsy, and treated in this hospital before the Medical Class, Bromide of Potassium in large and repeated doses were tried, without avail; as much as three drachms (180 grains) having been administered just before a paroxysm, without any perceptible effect. I have employed the Bromide of Potassium, with marked benefit in some cases, whilst in others, no beneficial effects could be perceived. I have employed Bromide of Potassium in my wards, with apparent good effects in the treatment of delirium tremens. Milk punch and nutritious diet was also of great benefit in such cases, for the patients as a general rule had neglected their aliment. A mixture of tincture of Assafœtida, fluid extract of Valerian, and Acetate of Ammonia, had also given satisfactory results in the treatment of delirium tremens.

Arsenic, Nitrate of Silver, Atropia and Iron, deservedly hold the first place in the treatment of epilepsy, especially when combined with proper exercise of mind and body, change of climate, sea-voyage, and foreign travel.

The following case of convulsive nervous disease, although not occurring in this hospital, is of so singular a nature, that we record it in connection with these investigations upon the Diseases of the Nervous System.

CASE VI.—Remarkable Case of Cerebro—Spinal Disease, attended with Convulsions, recurring at short Intervals, and attended with Protracted Somnolence.

The patient, Miss Susan C. Godsa, was exhibited at the Mansion House, in the City of Nashville, during the month of November, 1867; and at the request of her relatives, and of a number of physicians a careful examination of the singular phenomena presented by this unfortunate young woman was made.

History of the case as detailed by her relatives.—Miss Susan C. Godsa, now in her twenty-seventh year, has been asleep for the last eighteen years, only awaking at certain intervals in the day, and then only remaining awake from seven to ten minutes. Native of Gibsen Co., Tennessee. Her father was a respectable hard working blacksmith, noted for his great muscular strength, and general health and vigor of body. The only members of her immediate family now living, are a married sister and brother, who are with her at the Mansion House and appear to be in the enjoyment of good health. Up to the time she was six years old, she was remarkable for her sprightliness and vivacity of manner, and the general cheerfulness of her disposition. During her sixth year, she was attacked with ague and fever, with which she suffered for three years.

The physician who attended her, failed to arrest the disease. Her eyelids became affected in such a manner, as to fall over her eyes, defying every effort on her part to open or close them; this affection however, appeared to be only temporary in its nature, and disappeared, whilst the chills continued.

Another physician was called in, who administered for the relief of the chills, large doses of quinine and morphine, in doses which he stated would have killed any other person. The

exact amount of quinine was not remembered, and appeared to have been excessive for a child of nine years; as forty pills were made, each of which was of the size of a buck-shot, and five or six of these were administered at a dose.

After the continuance of the chills and fever for three years, and at the age of nine years, and just after these large doses of quinine, Miss Godsa fell into the sleeping state, which rendered her case so remarkable.

The physician who had first attended her, was again called in, and after an examination, attributed her condition to the medicines which she had taken, and stated that it would require at least seven years for her system to be cleared of the powerful doses which she had been required to swallow.

During the period of three years, she continued to have violent attacks of chills and was attended by various physicians, none of whom afforded her relief. Finally after a temporary improvement, Miss Godsa was compelled to betake herself to bed where she has since remained.

When the disposition to long slumbers began to manifest itself, she was frequently seized with painful cramps, and suffered great agony. Her heels would be suddenly driven up towards the head, and then thrust back again suddenly, the motion appearing to be entirely involuntary. Since the patient has been confined to bed she has grown three feet, the present height being five and one-half feet.

She never asks for food, and eats only when strongly urged by her attendants. A small quantity of water imbued at long intervals, satisfies her thirst. She is fond of tea and coffee and drinks these beverages with relish. She exercises no choice as to food, and eats without objection, what is given her. She never complains voluntarily, though when asked whether she suffers any pain, complains of pain in the head, back and left side, and of the nervous tooth-ache; she has said that she would rather be dead, than thus linger out her existence. Her periods of consciousness are said to be very regular; waking at 6 A. M. and every hour thereafter until 12 M., when she falls into a slumber which lasts until 3 o'clock P. M.; returns to consciousness at the time of the setting of the sun; waking again at 9 P. M., and once or twice before morning. Her finger and toe-nails are said, not to have grown for the last eighteen years. The strength is not sufficient to bear the weight of the body.

Miss Godsa, has resided during her somnolent state, in Obion county, six miles South of Hickman, Ky. Those having her in charge, have been led to hope that travel will benefit her health, and the expenses are to be defrayed by the exhibitions.

The above facts were corroborated by several respectable citizens of Hickman, Ky., and one year after this examination, as I was passing through this place, on my way to New Orleans, I learned that Miss Godsa was in feeble health and dropsical. The exhibitions did not defray the travelling expenses, and the relatives had returned with her to Obion County.

Results of the Examination of Miss Susan C. Godsa.—I examined Miss Godsa, in the presence of various medical men and students, upon two occasions; each examination extended over a period of two hours.

Upon entering the room, a delicate frail woman, with dark hair, combed neatly back from her forehead was observed reclining upon a small bed, with her eyelids closed, and her arms crossed upon her breast. The features of the face presented the appearance of repose and of deep sleep; whilst the arms and hands crossed upon the breast, were incessantly agitated by spasmodic contractions of the muscles. The incessant shaking of the hands which agitated the bed-clothing, appeared to suffer no abatement or periods of repose.

Shaking, loud talking and the magneto-electric interrupted current, failed to arouse the patient, and when the eyelids were drawn back, the pupils were expanded, but responded to the stimulus of light and slowly contracted.

At the expiration of eight minutes, the head and neck were thrown violently from side to side, by rapid lateral convulsive motions of the muscles.

These convulsive jerking motions of the head from side to side, were so rapid and violent, as to shake the entire bed upon which she lay and even to jar the floor of the room. The respiration appeared to be impeded, and the face grew livid. Such was the rapidity of the motions that it was impossible to distinguish the features, and the face presented a dim constantly changing outline.

The convulsive movements of the head lasted about one minute, and were followed by a short period of repose, of about the same duration, when the muscles of the back, neck and trunk generally were powerfully contracted, raising the head in short spasmodic jerks from the pillow, and drawing it forcibly forwards upon the chest, until the chin rested upon the breast. It was found even with the exertion of considerable force, wholly impossible to straighten the bent neck. During these tonic contractions of the muscles, as the head was drawn upon the breast, the inspirations were attended with peculiar spasmodic gasping croupy sounds issuing from the rigid larynx and throat. These strange sounds varied in number during each paroxysm from ten to fourteen.

The spasms of the muscles ceased as suddenly as they had commenced, the head fell upon the pillow, only to give rise again, to the peculiar round of phenomena, with the same suddenness and precision of a piece of machinery, working back and forth in a socket and gnaged to regular and set distances.

During both series of convulsive and tetanic movements the patient remained unconscious. We were told however, that the spasm of the head and neck sometimes occurred during the few brief moments, when the patient was awake, accompanied by the same peculiar sound from the throat, which seemed to give her great pain, and often apparently to threaten her life with strangulation. These phenomena were repeated in the order mentioned at regular intervals, with the suddenness and precision of a piece of machinery.

Miss Godsa awoke at intervals of about one hour, during these examinations, cast her deep blue eyes around the room, noticed every person and recognized all her attendants,

called them by name, and answered questions rationally. The periods of consciousness lasted only a few minutes; the voice was weak and trembling, but the replies to questions were rational. We gathered from certain remarks, that the heart of the "*Sleeping Beauty*," was not insensible to the tender passion.

During these periods of consciousness, the patient expressed no desire for food, but invariably expressed a desire for water, and when questioned, complained of pain in the back, head and stomach.

The urinary secretion was examined, and found to be scant and high colored, and not deficient in urea.

This curious case presents many points of profound interest; and an exhaustive discussion of its nature and causes, and of its relations to the action of malaria, and of large doses of quinine, and of the seat and cause of those wonderful automatic and stereotyped mechanical movements, would consume more space than these "Clinical Memoranda" afford.

CASE VII.—*Traumatic Tetanus; death; cerebro-spinal system examined after death; structural lesions discovered.*—Julia Jackson, colored, aged nineteen, stout athletic negro woman. Has never borne children.

On the 5th of March, 1869, a clothes-line pole, fell upon her left shoulder, and a splinter passed downwards and forwards, under the skin, over the deltoid muscle. On the 15th of March, after the wound had apparently entirely healed (the injury was very slight, and the splinter was removed immediately after the reception of the blow), the jaws became stiff, and tetanic symptoms manifested themselves.

Entered the Charity Hospital, New Orleans, March 19th, two weeks after the reception of the injury, external wound healed. Locked jaw and tetanic spasms, body drawn towards the left arm and side; that which had been injured. Patient complained of pain in left arm, shoulder and side.

The attending physician administered Opium and Bromide of Potassium, beef-tea and brandy. One grain and a half of Opium and ten grains of the Bromide of Potassium every three hours. The opium appeared to quiet the spasms, and the patient enjoyed some rest.

On the 21st of March, this plan of treatment was changed, and one-twelfth of a grain of Strychnine, administered every four hours. The patient took only two pills, and died soon after the administration of the second pill, on the 22d of March. The contraction of the muscles of the left side and arm, continued up to the moment of death; and the patient appeared to die from spasm of the respiratory muscles and asphyxia. The preceding facts were furnished by the attending physician:

Autopsy six hours after death.—The brain and entire spinal cord were removed from this stout young negro woman, whose form

possessed the fulness and roundness of great muscular power and the most robust health.

The pia-mater of the brain and spinal cord, were greatly congested with blood; the congestion was greatest at the base of the brain around the medulla oblongata. The grey and white matter of the cerebrum presented the usual consistence, but the cerebellum appeared to be somewhat altered, being softer than usual. The grey matter of the spinal cord, was universally congested, whilst the white matter was softened. The white matter protruded from the smallest puncture of pia-mater and arachnoid membrane of the cord.

The most marked alterations were discovered in the floor of the fourth ventricle. The blood-vessels of the fourth ventricle were not only greatly congested, but a small quantity of blood was effused about the middle and upper third of the fourth ventricle, beneath the arachnoid membrane, and into the meshes of the pia-mater.

The internal viscera were healthy, and upon careful examination presented nothing abnormal, with the exception of the dark colored blood resulting from the sudden arrest of the process of respiration.

The lung on the left side, was congested with dark blood and presented a marked difference in this respect from the right lung; which presented some congestion only in its most dependent portions. This condition of the left lung appeared to be due in a measure to the contraction of the muscles upon this side, and the consequent interference with respiration; but it is also probable that the impairment of the function of the pneumogastric nerve on this side, may have been one of the causes.

The seat of the wound was examined with great care. Two cicatrices were observed, the one of entrance, near the upper border of the deltoid, and the other near the axillary fold.

An incision between these two points, revealed thickening of the texture, but the injury had healed entirely.

Continuing the incision downwards, an abscess, with indurated walls, and filled with about two drachms of thick fœtid bloody pus, or rather a grumous fluid, apparently resulting from the liquefaction or disintegration of the textures, was revealed oc-

cupying the upper surface of the biceps muscle. Within the abscess, two pieces of cloth were found, about half an inch in diameter, and apparently detached from her calico dress and undergarment, by the splinter, and driven into the flesh. These particles of cloth were the only apparent cause of the abscess, as no splinter or other foreign body was discovered upon careful and minute dissection.

This case presents the following points of interest :

1st. The strychnine accomplished no good, and appeared rather to aggravate the symptoms.

2d. The disease appeared to have been caused by the presence of the particles of clothing. If the existence of the abscess causing the tetanic spasms had been diagnosed during life, it might have been possible to relieve the patient by laying it open, and exciting healthy suppuration.

3d. The muscles were most affected upon the side to which the injured arm was attached.

The nerves coming off from the muscles around the abscess, were more congested than those supplying healthy structures; and it appeared that the irritation was reflected most strongly upon those muscles supplied with motor and sensitive nerves from the same lateral half of the spinal cord.

4th. The pus, or rather fœtid fluid contained in the abscess differed widely from the product of healthy inflammation, and the absorption of this matter, may have been one of the exciting causes of the tetanic spasms.

5th. The medulla oblongata, and spinal cord, exhibited palpable lesions, in the congestion of the blood-vessels, and the softening of the white matter.

CASE VIII.—*Traumatic Tetanus; Life of the patient preserved temporarily by Marshall Hall's Ready Method; post-mortem examination, Structural Alteration of Cord.*

Although this case did not occur in the Charity Hospital, it is nevertheless of great interest in its relations to the preceding case, and in this connection was brought to the notice of the Medical Class of the University of Louisiana.

J. A. Rouk, Company K., 1st Alabama Cavalry, Hagan's Regiment; private; age, twenty-one; black hair, fair complexion;

nervous temperament; admitted into the Third Georgia Hospital, Augusta, Ga., February 11, 1865. Was wounded February 2d, in a skirmish, near Alendale, S. C., by a ball from a Spencer rifle. The ball passed through the abdominal muscles of the right side, one inch above the crest of the ileum, entering anteriorly. Distance from one orifice of the wound to the other, about four inches. From all appearance the ball passed entirely within the muscular structures of the wall of the abdomen, and did not penetrate the cavity. Patient's health good, before the reception and at the time of this wound. After being wounded, he was sent to the Division Hospital, in which he remained nine days, moving along with the hospital in ambulance to Augusta, Georgia. During this time the wound was dressed once a day, and kept moist with a wet rag. Patient felt well during that time, but when entering the hospital, complained of cramps (to use the patient's own expression) in the wounded side and back.

On the 12th of February, opisthotonos gradually commenced. From 10 o'clock A. M., one tea-spoonful of Laudanum (Tincture of Opium) was administered every one and a half hours, until 6 o'clock P. M., (the whole quantity of Laudanum given up to this time was about one wineglassful, which produced no perceptible effect.) No medicine given during the night—patient slept very little. One natural evacuation of bowels this day.

February 13th. Trismus commenced this day, Chloroform was given by inhalation, which allayed the nervous irritation for about one hour. This was continued during the day, with the addition of one tea-spoonful of Chloroform, and another of Laudanum, administered internally every three hours, until three doses were taken, when the trismus increased to such an extent as to prevent deglutition. The Chloroform appeared to diminish the volume of the pulse. Respiration during the day, tolerably easy. The tongue, as far as could be seen, natural. Condition of skin natural, sometimes moist. Bowels constipated. Urine natural, in color and quantity.

February 14th. Trismus and opisthotonos increased. Respiration more labored. Injection of Turpentine and Castor Oil given with no effect. One tea-spoonful of Chloroform, Laudanum and

Ether, mixed in equal quantities, were given by the mouth, every three hours, with no perceptible effect.

February 15th. Tetanic symptoms increased. Respiration more labored—no evacuation of bowels. An enema composed of one tea spoonful each of Tincture of Camphor and Tincture of Opium (Laudanum) was given every three hours. No benefit appeared to be derived from this mode of medication and it was discontinued.

Patient continually kept under the influence of Chloroform, to relieve his sufferings—no sleep obtained without Chloroform.

February 16th. Symptoms increased in severity—deglutition more difficult—Chloroform continued by inhalation.

An attempt was made to administer egg-nogg, by the mouth, but failed—patient could not swallow, and immediately after the efforts, was seized by a violent tetanic spasm. In the spasm, the muscles of respiration became involved, which soon arrested the thoracic respiration, so that the latter function was only performed by the diaphragm and abdominal muscles. At length, however, these muscles also became involved, and respiration ceased entirely. The patient's face turned blue and livid, the black blood overcame the cerebro-spinal system, the eyes were fixed—all signs of life disappeared, and death from asphyxia appeared already to have taken place.

Artificial respiration after the method of Marshall Hall, was established and kept up for a few minutes, when the patient gradually revived. The spasms of the respiratory muscles also gradually relaxed, and after some time, the patient commenced to breathe again naturally.

At this time, two ounces of whisky with one teaspoonful of chloroform, were administered by enema. This was kept up with the addition of half a pint of beef-tea, every two hours until the evening; with the exception of the chloroform, the supply in the hospital being out.

Evening—patient more quiet—pulse 100; respiration more easy—conversed and swallowed half a glass of water. Patient remained in this comfortable condition, affected with an occasional slight spasm. About three o'clock, A. M., he asked for water—a little was given to him, which brought on another

slight spasm, during which he expired about ten minutes after taking the water. This spasm was similar in its nature to the one already described, and it is highly probable that if the method of artificial respiration, had been practiced, the life of the patient might again have been prolonged.

Autopsy six hours after death.—Spare but muscular man; rigor-mortis very strongly marked—hands contorted and fingers clenched; and feet twisted as in strychnine poisoning.

The brain and spinal marrow were carefully removed. The nerves leading from the spinal marrow, to the wound, were also carefully dissected and examined in situ. The entire mass of flesh surrounding the wound, was then examined, and together with the spinal cord and its nerves and muscular attachments were removed.

Condition of the wound.—The wound was a superficial flesh wound. The ball was a small one, apparently not larger than a pistol ball, and had passed directly through the structures without lacerating them.

When the tetanus first manifested itself, the discharge from the wound is said to have greatly diminished, and almost entirely disappeared. Several days before death, however, and up to the close of life, the wound secreted small quantities of pus. When the entire tract was laid open, it was found to be granulating throughout its entire extent. The granulations were carefully examined with a magnifying glass. They were small and rather pale. The wound was dryer than usual, that is there was less discharge than in healthy wounds.

Under the microscope, the pus presented an unhealthy appearance. The corpuscles were small, few in number and imperfectly formed, and amorphous granules abounded.

The wounded surface was surrounded or underlaid by a thick fibrous wall, the result of inflammatory action.

In the track of the ball, numerous sharp filaments of wool, were found sticking into the granulations, and passing in some cases, entirely through the fibrous wall, to the muscular structures beneath.

Nerves supplying the diseased parts.—These were dissected, and traced into the parts immediatly surrounding the wound. These

nerves presented no distinct evidence of congestion or inflammation.

Spinal marrow.—The nerve leading from the diseased and wounded part, was the *last dorsal*. This sent off a branch to the *lumbar plexus*; for two inches above its junction with the spinal cord, the blood-vessels of the cord were engorged with blood, and the vessels presented a marked enlargement.

The congestion extended from thence, to the termination of the spinal cord, and the *corda equinæ* was also much congested. The thigh upon the affected (right side), had been quite stiff at the hip. The congestion was greatest upon the posterior surface of the cord.

Sections of the cord were made at various parts, from the junction of the medulla oblongata, with the pons varioli, to the termination of the spinal cord, and the grey matter presented a pinkish, deep colored congested appearance.

Both the grey and white substances, were examined carefully under the microscope, the nerve fibres presented the usual appearance; the cells of the grey matter appeared indistinct.

The blood-vessels of the grey matter were filled with red corpuscles.

This case presented the following points of interest:

1st. The restoration of the patient, after apparent death, by artificial respiration, was a matter of importance.

The life of the patient was prolonged at least eighteen hours by this method.

A large proportion of the cases of tetanus, terminate fatally from spasm of the respiratory muscles. If artificial respiration had been practiced the second time, it is probable that the patient would again have been restored. The narcotic effects of the Carbonic Acid of the blood, tends to overcome the spasms, and hence the possibility of instituting artificial respiration.

This subject is worthy of the most careful consideration, and of practical application in this terrible disease.

2d. The granulations and the pus of the wounded surface were imperfectly formed; and it is not unreasonable to suppose that the irritation of the injured nerves may have arisen in a measure from these unhealthy products of inflammation. The particles

When a section of the cord was made, the great and characteristic alteration was observed in the ganglionic matter. The grey matter, presented a pinkish appearance; under the microscope the grey cells were found not only to be greatly diminished, but many of them were entirely altered, being filled with colored granular masses, and some also contained oil globules. Masses of hæmatin, were also seen in the intermediate spaces. The blood-vessels (capillaries), were greatly increased in size, with thickened walls, to which colorless exudations and spindle-shaped corpuscles were attached. The change in the capillaries was marked.

CASE X.—*Loss of Muscular and Nervous Power—Paralysis—Death; Structural Lesions of Nervous System.*

The history of this case, resembled in some respects, that of the preceding; the subject being in like manner, a negro man (aged 50 years); who had been working during the last two years upon a rice plantation, his duties compelling him to stand in water above his knees. Previous to this occupation, had been a healthy stout man.

During the spring months, he began to suffer from "rheumatism in the left knee," which extended to left elbow, and right knee and elbow, and the use of the extremities was gradually lost. The paralysis appears to have begun in the lower extremities, and the lower extremities were said to have been œdematous before being paralyzed.

In the month of August, the power of locomotion was lost, and the patient became bed-ridden.

The œdema of the lower extremities disappeared during rest; the rheumatic pains however, have continued to harass the patient up to the present time, and the muscles of the extremities have gradually emaciated, until they are now much reduced in size. Has had no trouble in defecation or urination.

At the present time skin warm and moist, temperature of axilla 99°.5, and patient lies on his back; subsultus tendinum, and pains in the shoulders, the former only occasionally, the latter persistent; paralysis of upper extremities, flexors of left arm partially contracted, paralysis of extensors of left arm, more, complete than in right; extensors of lower extremities unaffected

flexors paralyzed; tongue slightly furred; appetite good; bowels regular; respiration regular, about twenty per minute; pulse seventy-two, small.

The treatment has consisted of Iron and Strychnine; and the patient has gradually improved since his entrance into the hospital, and the power over the voluntary muscles, appears to be slowly returning. As in the preceding case, this patient had been exposed to the action of malaria, and to cold and wet in a low, unhealthy region; and in like manner, the gradual loss of power in the extremities, was preceded and accompanied by rheumatic pains, which were more decided, and attended with more marked local inflammation; in like manner there is asthenia, with no loss of sensation or intelligence. It appears to be reasonable to refer the nervous derangement to the same causes, in both cases.

The paralysis progressively increased, until the patient became utterly powerless, and was confined to bed.

The flexors of the fore-arm were firmly contracted; and the muscles of the fore-arms and legs wasted considerably. Strychnine and Iron, appeared to accomplish no good in this case, and death occurred March 31st, 1869. Up to the time of death, there was no alteration of sensation, notwithstanding the paralysis of motion.

Autopsy five hours after death.—The brain and spinal cord were carefully removed. The grey matter of the brain and spinal cord, was of a deep reddish grey color. Blood-vessels of arachnoid and pia-mater congested with blood. The arachnoid of the medulla oblongata and superior portion of spinal cord, was discolored, presenting the appearance as if it had been washed over with a weak solution of the Nitrate of Silver. Spinal cord somewhat atrophied, with the white matter firmer than usual, and the grey matter, softened.

The brain and spinal cord of a patient that had died with phthisis pulmonalis, were removed and compared with the one under consideration, and it was observed that it was far lighter in color; and it was especially observed that the grey matter of both the brain and spinal cord were far lighter. Spleen some-

of wool penetrating the tissues, may also have been exciting causes of the peculiar nervous disturbances. It is important that the most careful examination should be instituted of the wounded parts and products of the consequent inflammatory action.

3d. The grey matter of the spinal cord, was decidedly congested with blood; and the congestion was so great, as to render this portion of the cord of a decidedly reddish pink color.

Tetanic spasms are attended with great waste of the nervous and muscular elements, and especially of the former, as I have shown by careful analysis of the urinary excretion in this disease.

The grey cells of the spinal cord, and medulla oblongata, during the stages of action, excitement and change, need an increased and sufficient supply of blood.

4th. The tetanic spasms in this case, were attended with palpable lesions of the spinal cord; and the most prominent condition of this state was hyperæmia.

CASE IX.—*Paralysis; progressive failure of muscular and nervous power; Death; Structural Lesion in Spinal Cord.*

Negro-man —; aged forty-five years; native of Louisiana; has lived and worked all his life on a sugar plantation, where he was often necessitated to work in water, and was subjected to the action of malaria.

Admitted to Charity Hospital, January 8th, 1869; patient states that he has suffered during his life with frequent attacks of malarial fever, of the intermittent form; last July, whilst working every day in deep water, often without eating food until night, began to suffer with pains in different parts of his body, but more especially in the lower extremities; these pains grew worse from day to day, and about Christmas he found that he had lost the power of using his legs, not being able to walk without great difficulty.

During the summer and fall months, the patient had suffered much with cephalalgia and intermittent fever. Has never had syphilis. At the time of his admission suffered from constipation of the bowels; but the bowels were regulated under the use of Strychnia, Iron and Aloes.

Magneto-electric shocks, seemed rather to increase, than to benefit the loss of nervous power, and this agent was conse-

quently abandoned. The patient has been kept upon small doses of Strychnia and Iron, with benefit. At the present time, the patient has but little use of the lower extremities, cannot raise himself from a sitting to a standing posture, except by climbing as it were, up the bedpost, raising nearly the whole weight by the muscles of the arms and shoulders; after getting to an erect position, cannot take a step, without holding to a support; by the aid of two walking canes he can walk slowly across the floor, by moving his feet about two inches at a time, dragging his toes along the floor. Paralysis of the flexors of his legs in his efforts to walk, the feet appear to be raised by lifting the entire leg, by means of the muscles attached to the hips; subsultus tendinum in left leg. General sensation and reflex action, unimpaired; no failure of special senses; intellect as bright as is usual in his race; digestion normal; thoracic and abdominal viscera in healthy condition.

In this case, the prolonged action of malaria, repeated attacks of intermittent fever, together with the depressing effects of working in water, knee deep, were attended with rheumatic pains, gradual loss of power in lower extremities, constipation, general asthenia, subsultus tendinum in legs, and inability to rise from the sitting posture. It is possible that the affection of the spinal cord, may have been due to rheumatic inflammation of its membranes, as well as to the slow and prolonged action of malaria and other depressing agencies.

This patient died on the 6th of May, 1869. The powers gradually failed and he died apparently from exhaustion of the circulatory and respiratory systems.

The brain and spinal cord, were taken out and carefully examined. Nothing special was noticed in the cerebrum and cerebellum, but the pia-mater and arachnoid membrane of the spinal cord, in several portions, presented a light brownish discolored appearance, as if discolored by a weak solution of the Nitrate of Silver.

This discoloration was found to be due to the deposition of minute crystalline dark masses of hæmatin in the cellular tissue.

The blood-vessels of the pia-mater of the spinal cord, appeared to be larger and more numerous than normal.

but the muscular fibres were generally healthy in appearance, and presented well marked striæ; the oil globules were most abundant between the muscular fasciæ.

Nothing abnormal was discovered in the valves of the heart and pulmonic artery and aorta, the feeble irregular action of the heart, with its abnormal sounds during life, were clearly referable to the anæmic condition of the blood, and to incipient fatty degeneration.

All the cavities of the heart contained clots firmly attached to the muscular columns, and valvular cords. The right auricle was especially distended with an enormous clot, which when removed presented a complete cast of its interior. These clots were composed of two portions; a well defined fibrous, light colored dense elastic portion and coagulated blood. From their compound and laminated structure, they had evidently been partly formed during the last hours of existence. The spleen was enlarged to twice the size, and slightly softened. The liver and alimentary canal appeared healthy; so also the kidneys.

The affected muscles were exhibited, and presented a red, healthy appearance quite different from that of muscles undergoing fatty degeneration, or progressive atrophy. After careful microscopical examination, it was impossible to discover any marks of disease in the muscles, even in those which had been most completely paralyzed.

The entire brain and spinal cord were exposed and exhibited to the Medical Class. To the naked eye, no structural alterations could be perceived upon the exterior. There were no marks of inflammation of the membranes and no deposit or tumor, or abscess, which would account for the paralysis of the arms, and of the extensors of the fore-arms, and inability to rise from the sitting posture, and loss of power in the lower extremities, and want of control over the bladder and sphincter of the anus and rectum, during life.

Great difficulty is experienced in such examinations, as the modes of hardening the nervous structures, and the act of making sections of the brain and spinal cord, may, if not carefully performed, lead to deceptive appearances and erroneous conclusions. In many cases pathologists have failed to detect well

marked lesions of the cerebro-spinal system, in the paralysis of lead-poisoning, of mercurial cachexia, and in the tetanus produced by wounds and strychnia.

The cerebral functions in this case was unimpaired, and sensation and reflex action were intact; it appeared reasonable to refer the loss of power, chiefly to some lesion of the motor ganglia of the spinal cord. And as the upper extremities were more affected than the lower, whilst the impulses of the will were unimpaired, and sensitive impressions were communicated with the usual intensity, it seemed most reasonable to refer the lesion to some alteration or loss of power in the ganglionic cells of the anterior horns of the spinal cord, which may be considered as the origin of the anterior roots of the motor nerves.

Microscopical investigation was directed to the determination of the condition of the ganglionic cells of the anterior horns of the spinal cord; it appeared that they were diminished in number. The grey matter of the spinal cord also presented a redder color than in health, and the capillaries supplying the ganglionic cells were larger, and their walls thicker than in healthy nervous structures.

CASE XII.—Paralysis of Lower Extremities, following Epileptic Seizures; gradual improvement under the use of Tonics and Electricity.

William Aul; aged fifty-five years; height, five feet seven inches; weight 180 pounds; sandy hair; color of eyes, greyish yellow; fair complexion; native of Charleston, South Carolina; occupation, overseer on plantation. Has lived in this State, on the banks of the Mississippi River since 1849. Was attacked according to his statement with congestive chill and convulsions in 1865. The convulsions which appeared to be epileptic recurred at long intervals.

Sixteen months before entering the Charity Hospital, the patient states, that whilst in the act of striking a snake, he fell, and since that time his control over the lower limbs and his ability to stand and walk has progressively diminished, and at the end of four months he was compelled to use crutches; and was finally confined to his bed from the loss of power in the lower extremities. The epileptic seizures have occurred monthly. Ad-

what enlarged and softened. Liver of slate and bronze color, with a patch of incipient fatty degeneration.

Microscopical examination of Nervous Structures.—The colored portions of the spinal cord, were due to a deposit of coloring matters in the form of granules or crystalline masses in and around the meshes of the blood-vessels of the dura-mater. The coloring matter appeared to have been derived from the colored blood corpuscles.

The grey matter of the cerebellum, medulla, oblongata and spinal cord, was entirely changed in its appearance, as in the case of insanity and tetanus. It presented a deep reddish, greyish and pink color, from the great enlargement and increase of the capillaries. The ganglionic cells had disappeared to a great extent, and their place was occupied by enlarged capillaries. Masses of hæmatin were also discovered amongst the nervous structures. Many of the nerve cells were filled with granular matter.

Comparative examinations were made with a healthy brain and medulla and spinal cord, and it was thus clearly shown that the nerve cells in the diseased brain and spinal cord, were diminished and altered in the most marked manner, and appeared to be not one-fourth as numerous as in healthy nerve structures.

We have here as in the preceding cases, grounds for referring the aberrated nervous phenomena and paralysis during life, to palpable structural alterations of the ganglionic cells and capillaries.

CASE XI.—Negro-man, aged 63, a cooper by trade, who had been quartered in a low damp locality, with poor diet, consisting chiefly of salt pork and bread; habits intemperate. Has suffered for some months with pain in back, located chiefly in lumbar regions. About one month ago was attacked with intermittent fever of tertian type; suffered with three paroxysms, and up to the present time has been subjected to "light fevers at night." Suffered with constipation of bowels for two weeks from the first chill. Says that pains in the arms and knees came on about the time of the first chill, and these have gradually increased in intensity. During the last four weeks, the patient has gradually lost power in the upper extremities.

February 6th. The patient complains of sensations of cold in arms, and keeps them wrapped up in flannel; pains in lower extremities and back, in lumbar region; some subsultus tendinum in arms; paralysis of both arms and of extensors of fore-arms; want of full control of lower extremities; when walking inclines his body forwards, and walks with an unsteady swinging gait; complains of stiffness in the back, and of inability of standing erect; unable to rise from the sitting posture; unable to retain his water and fæces; involuntary micturition and defecation, occurring if he does not obey the calls of nature at once; ærens senilis present; some enlargement of the parotid gland on the right side; no loss of sensation; tongue moist, back of tongue coated with yellow fur, tip and edges clean and red; appetite good, bowels regular; slight cough with bronchial expectoration; sounds of heart feeble, and not well defined; pulse soft, weak, irregular and intermittent, eighty-four to the minute.

The patient was put on Cod-Liver Oil, Strychnine and Iron, with nutritious diet, and the arms rubbed with Volatile Liniment combined with minute portions of Strychnine.

Patient continued to improve slowly, with an increase of power in the arms, and was able to get the left hand to his mouth in eating, until the 15th of February, when he had a chill, followed by fever. On the night of the 15th, the patient took ten grains of Blue Mass, which was followed by fifteen grains of the Sulphate of Quinia, on the 16th. The bowels were moved frequently and the discharge passed involuntarily; and the patient appeared much exhausted; and in sleeping the left cheek appeared flabby, and there was a puffing of the left buccinator during respiration.

Stimulants and nutritious diet appeared to exert no beneficial effects, and the patient gradually sank and died on the 18th. Consciousness and intelligence were retained to the last moment.

Autopsy three hours after death.—The post-mortem was performed three hours after death, and the brain and spinal cord, and viscera, exhibited to the Medical Class. Structures anæmic; heart pale and apparently undergoing fatty degeneration. The degeneration appeared to be greatest in the muscular structures of the auricles. Under the microscope, the fat globules were more abundant in many portions of the heart, than in health,

mitted into the Charity Hospital February 8th, 1869. At this time the patient was suffering with fever and diarrhœa; which symptoms were relieved in a few days. At the time of his admission was confined to the bed, on account of the loss of power in the lower extremities. Whilst lying in bed, manifests both muscular power and sensation in the lower extremities being able to draw the limbs up with considerable power; but is unable to walk, the lower extremities apparently being under no control in the standing posture. The upper extremities have lost power, but not to so great an extent as the lower, and are to a greater extent under the control of the will. Complexion clear, and general appearance, that of health; complains of pain in back of head and in the face. Vision dim, and the patient says that he has a sensation of dizziness or turning round in his head. Whilst sitting up the head inclines to fall forward. Under the use of Iron, Strychnine and Magneto-Electricity, the patient gradually improved, and was able to walk about the ward, supporting himself in a measure by his hands on the bed-posts.

In the month of June the patient was so far improved that at his own request he was discharged and returned home. The temperature in this case did not vary from that of health, being 98.6 in the hand and 99.25 in the axilla. The urine also appeared to be normal in amount, color and specific gravity.

CASE XIII.—*Lead Colic, Epilepsy, Paralysis, Fatal Termination.*

Ralph Bodilly, aged sixty-eight years, height five feet, eight and three-fourth inches, weight 170 pounds; auburn hair, now grey; hazel eyes; fair complexion; native of Ohio; has resided in New Orleans thirty years; painter by occupation. Fifteen years ago had the first attack of lead colic, and has had six attacks since, the last attack occurred in December, 1867.

The patient states that he was greatly prostrated in this attack. In the month of June 1868, had an attack of fever which was followed by diarrhœa and dysentery of an obstinate character. About the time of the appearance of the dysentery the patient began to lose the use of the lower extremities; walked with great difficulty, and finally had to use two canes in walking. The patient states that, in addition to the lead colic, he has also had attacks of epilepsy occurring at long intervals.

Entered Charity Hospital January 26th, 1869, with chronic dysentery and paralysis of lower extremities. The dysentery yielded readily to treatment. The patient was then placed upon Iodide of Potassium, and upon a tonic pill compound of Nux Vomica, Quinine and Iron. Cod-Liver Oil and good diet were also administered. At the time of his admission into the hospital, the patient presented a pale anæmic, sallow unhealthy hue, and his weight had been reduced from 170 pounds to 145 pounds.

The muscles of the leg flabby and apparently degenerated. The left leg was affected first and the loss of flesh was greater than in the right leg. The muscles of both legs were affected with irregular contractions and twitchings, which varied in intensity at different times. Bowels were frequently discharged involuntarily in bed and the rectum and its attached sphincter appeared to be partially paralyzed. The pulse was normal; being on an average 70 beats per minute, and the respiration 18 per minute; the temperature in the axilla ranged from 99°·5 F. to 100°·5 F.; the temperature of the right leg was slightly higher than that of the left, being in the region of the posterior portion of the knee-joint 96.¼° F. to 96° F. in the left leg. Under the use of the Tonic Pills, Iodide of Potassium, Cod-Liver Oil and nutritious diet, the patient gained a little strength and flesh. On the 12th of May, some swelling was observed in the lower extremities, and the patient complained of pain along the spine, which had existed with various degrees of intensity. The Magneto-Electric current was at this time ordered daily. The patient states that in 1850, his wife found him at night in an insensible condition; face purple and disfigured, with spasmodic twitchings of the muscles. The physician who was called in pronounced the attack epilepsy. The next morning the patient felt sore in all his muscles, as if he had been beaten. Had a similar attack at night in 1853, and since this period has had a number of epileptic seizures. In 1859, while painting the state-room of a ship, he suddenly fell and became unconscious, and after being carried on deck and after the administration of stimulants, the patient revived and then attempted to paint the captain of the ship, and only discovered his mistake after being aroused by the voice of the captain. After this attack felt great soreness in his limbs.

During the recent war was employed in *secret service* and his health appeared to improve during his connection with the army.

The measures instituted produced only temporary improvement, and the patient gradually lost nervous and muscular power and died during the month of January, 1870.

CASE XIV.—*Injury of Spine, resulting in Paralysis of Lower Extremities.*

David Younge; age, twenty; height, five feet six inches; weight, 156 pounds; dark brown hair; grey eyes, fair complexion; native of Ireland; occupation, carriage driver. October, 1868, received an injury in the back, from some men unexpectedly throwing a sack of salt on his shoulders. At the time of the injury, felt a cold chill run over his body, with a feeling as if the spinal column had given way. The patient, however, was able to continue his ordinary occupation, until March, 1867, when he suffered severe pain in the small of the back, with difficulty in urination. At this time he gradually lost the use of the lower extremities which began to waste away. Entered the Charity Hospital, February 23d, 1868, with complete paralysis of the lower extremities, which confined him to his bed. The patient came under my treatment, April 1869. At this time he was pale anæmic, and confined to his bed from paralysis of the lower extremities.

Under the daily use of the Magneto-Electric, interrupted current, and of Strychnine and Iron, the patient's general condition improved, and he was able to sit up in a chair and to wheel himself about the wards and hospital entry. At the present time, April 1870, the condition of the patient is favorable, although he is still unable to stand alone. No marked variations of the pulse or respiration were observed in this case; the temperature of the axilla being 109° F; temperature of hand 99°; and of knee-joint 97.5.

CASE XV.—*Chorea—Effects of Snake Bite.*

John Powers; aged thirteen years; dark-brown hair; hazel eyes; fair complexion; native of New Orleans. Patient states that a needle stuck into his head when a child, before he could recollect. The needle appears to have entered near the junction

of the parietal and temporal bones on the left side of the head. About two months before entering the Charity Hospital, the patient was bitten by a snake. The snake bite was followed by twitchings of the muscles, pain in the stomach and vomiting.

Admitted into the Charity Hospital May 7th, 1869, with irregular twitchings and jerking of the muscles of the face, neck and extremities, and with glandular swellings of lymphatics of neck. Complexion pale anæmic. The bowels were kept open, and the patient placed upon Iron, Quinine and Strychnine, and the best diet which the hospital afforded.

Under this treatment the twitchings as well as the glandular swellings disappeared.

A number of other cases of nervous diseases were brought before the Medical Class, but those which we have just recorded, presented the points of chief interest, and illustrate the importance of the careful study of Diseases of the Nervous System.

The force of this recommendation is evident, when it is remembered that the nervous system is not only the centre and channel of sensitive and moter impulses, conducting the moter influence of the will, to the muscles, receiving and transmitting to the cerebral ganglia, sensitive impressions from the exterior world, and balancing and co-ordinating the motions of the body; but is also intimately related to the acts of circulation and respiration, and the nutrition and secretion of the organs.

§ If the statements of pathologists are to be credited, there is a steady and marked increase of diseases of the brain and nervous system, which appears to be referable to the excitements and vices of the present form of civilization. The ever restless ambition engendered by the enterprise and physical activity of the present day, in the fierce struggle for wealth and pre-eminence, necessitates a constant wear and tear of body and mind in this great and never-ending battle of *modern civilization*. At the present day, the brain is unduly strained and taxed, in the severe struggle for intellectual supremacy, and professional emolument.

The importance of the study of diseases of the nervous system, is well illustrated by the force of imagination, and the power of fear over the animal economy.

Shenckins relates the instance of a noble Spaniard, Don Diego Osorio, who, being in love with a young lady, of the Court, had prevailed with her for a private conference within the gardens of the King; but by the barking of a little dog their privacy was betrayed, the young gentleman seized by the King's guard and imprisoned. It was a capital offence to be found in that place, and Osorio was condemned to die. He was so terrified at hearing this sentence, that one and the same night, saw the same person young and old, being turned grey, as in those stricken in years. Moved at the sight, the goaler, related the accident to King Ferdinand as a prodigy, who thereupon pardoned him, saying he had been sufficiently punished for his fault.

A similar circumstance is related of a nobleman of the Roman Court, in the time of the Emperor Cæsar, who was also detected in an intrigue, cast into prison and sentenced to be decapitated on the morrow.

Dr. Marshall Hall has recorded the case of a gentleman, who was suddenly affected with epileptic seizures, *the effect of fear—the fear of the cholera.* After each epileptic seizure, the hemiplegic paralysis of the right side took place; but this yielded completely, except that the patient could not direct his mind from the idea that the feeling of the affected side was somewhat different from that of the other. At length, a fourth attack proved fatal; and on a *post-mortem* examination, the arachnoid was found slightly opaque, the ventricles containing serum, whilst in the left corpus striatum there was the remnant of a small clot of blood in a cyst slightly discolored. The arachnoid was raised in one part by serum, resembling a vesicle, and a small vesicle was attached to the plexus choroides.

On the other hand, the effects of strong mental and moral emotions, as the heroic enthusiasm of the excited warrior and the devoted martyr, may completely deaden the nervous system to fear and pain so that the dreadful wound and the burning flames are alike disregarded. In the dancing mania of the middle ages, described by Hecker, the patients at the height of their excitement, seemed to have had their external senses literally sealed, "While dancing" says Hecker, "they neither saw nor heard, being insensible to external impressions through the senses."

Under the influence of fear and fright, paralyzed muscles and limbs that were useless, have suddenly been thrown into action, hæmorrhages have been instantaneously checked, and fits of the gout, ague and other disorders of a periodic character have been cured.

Anger accelerates the progress of the blood, hurrying on the circulation with such fearful impetuosity, as to threaten the brain, and the organs contained in the chest; grief depresses the action of the heart, and causes serious accumulations in the large vessels and lungs, and gradually undermines the health of the body, by weakening the energy of the nervous system, and causing the functions to be carried on in a slow and unequal manner; even excessive joy has been known to occasion as strange and fatal results as anger and grief.

Fienus mentions an instance of a malefactor who was carried out, as he conceived, to execution; and in order thereto his cap was pulled over his eyes, and a cold wet cloth being struck hastily about his neck, he fell down dead, under the conceit of his decapitation. A similar case is recorded by Charron;—a man having his eyes covered to be put to death, as he imagined—being condemned—and uncovering them again to receive his pardon, was found really dead on the scaffold.

It is said, and the statement has been often repeated, that a person was directed to be bled to death; his eyes were blinded and he was made to believe, by water trickling down his arms, that the sentence was being carried into effect. The mimicry is said to have produced his death as effectually as would the real operation; the powers of life were destroyed by the power of imagination.

Sophocles, at an advanced age and in full possession of his intellectual power, composed a tragedy, which was crowned with such success, that he died through joy; Chilon, of Laedemon, died from joy whilst embracing his son, who had borne away the prize at the Olympic Games; Juventius Thalma, to whom a triumph was decreed for subjugating Corsica, fell down dead at the foot of the altar, at which he was offering up his thanksgiving; and Fouquet, upon receiving the intelligence of Louis XIV, having restored him to liberty, fell down dead.

These and many other cases of sudden death, from powerful emotions and unexpected joys and sorrows, are doubtless to be attributed to the effects produced by the nervous system upon the sanguiferous system. Dissection has shown that in a large proportion of such cases, the heart and large blood-vessels, are either structurally altered or engorged with blood; in some cases, death is clearly referable to effusions upon the brain, and especially at the base of this organ in the neighborhood of the origin of the respiratory nerves.

I have, by numerous experiments upon living animals, demonstrated to the Medical Students of the University, the sudden fatal effects of the arrest of the circulation and respiration, by destruction of the respiratory ganglia, and by the action of such poisons as Hydrocyanic Acid, which act directly upon the *medulla oblongata*.

The sudden withdrawal of the influence of the *medulla oblongata*, during fright or excessive joy, may be also assigned as one cause of sudden death.

Numerous examples of the production of convulsions, hysteria, epilepsy, madness and idiocy, have been recorded by various writers, as being produced directly and absolutely by fear and terror; but it will be sufficient for the illustration of this subject, to record some instances illustrating the effects over disease of the imagination.

Mr. Coleridge relates the following anecdote to Dr. Paris:

As soon as the powers of Nitrous Oxide were discovered, Dr. Beddoes at once concluded that it must necessarily be a specific for paralysis; a patient was selected for the trial, and the management of it was entrusted to Sir Humphrey Davy. Previous to the administration of the gas, he inserted a small pocket thermometer under the tongue of the patient, as he was accustomed to do upon such occasions, to ascertain the degree of animal temperature, with a view to future comparison. The paralytic man, wholly ignorant of the nature of the process to which he was to submit, but deeply impressed from the representation of Dr. Beddoes, with the certainty of its success, no sooner felt the thermometer under his tongue than he concluded the *talisman* was in full operation, and in a burst of enthusiasm, declared that he

already experienced the effect of its benign influence throughout his whole body; the opportunity was too tempting to be lost; Davy cast an intelligent glance at Coleridge and desired his patient to renew his visit on the following day, when the same ceremony was performed, and repeated every succeeding day for a fortnight, the patient gradually improving during that period, when he was dismissed as cured, no other application having been used.

At the time that Nitrous Oxide excited almost universal attention, several persons were exceedingly anxious to breathe the gas; and Professor Woodhouse administered to them, ten gallons of atmospheric air, in doses of from four to six quarts. Impressed with the idea, that they were inhaling the Nitrous Oxide, quickness of the pulse, dizziness, vertigo, tinnitus aurium, difficulty of breathing, anxiety about the breast, a sensation similar to that of swinging, faintness, weakness of the knees and nausea, which lasted from six to eight hours were produced; symptoms entirely caused by the breathing of common air, under the influence of an excited imagination.

At the commencement of the present century, a man by the name of Perkins, introduced certain pieces of metal, called traectors, which he contended would cure certain diseases by merely drawing them over the affected parts. The extraordinary effects which were said to have been produced by their operation, were referred to galvanic, electric or magnetic influences.

Dr. Haggarth resolved upon putting the metallie traectors to the test of experiment, and selecting five patients from the general Hospital at Bath, he submitted them to the operation of a pair of false traectors, composed not of metal but of wood, yet so painted as to resemble the metallie ones in color. The patients thus selected had been ill several months with various diseases of a chronic character, as gout and rheumatism. Upon the affected parts being stroked in the slightest manner by these pieces of wood, the patients all declared themselves relieved; three of them were particularly benefitted, and one immediately improved so much in his walking that he had great pleasure in exhibiting proofs of the benefit he had received. One said he felt a tingling sensation for two hours. Similar experiments with wood, slate-

pencil, tobacco-pipes, etc., were made at the Bristol Infirmary with the same results; and the fame attending these cases was so spread abroad, that more patients crowded for relief than time could be afforded to bestow upon them. Men that were unable to lift their arms and legs, were speedily restored to their use, after the application of the supposed metallic tractors.

Such examples explain the miraculous cures ascribed to empirical and inert remedies. It has been well said, "it is the confidence of the quack, and the hope of the patient which work the cure. Disease is well known to depress the powers of the understanding as well as the digestion. A sick person is, in particular extremely credulous about the object of his hopes and fears. Whatever promises him health, may easily obtain his confidence, and he soon becomes the dupé of quacks and ignorant pretenders."

Dr. Reid has said that he who in the study or the treatment of the human machinery overlooks the intellectual part of it, cannot but entertain very incorrect notions of its nature, and fall into gross and sometimes fatal blunders in the means which he adopts for its regulation or repair. Intellect is not omnipotent; but its actual power over the organized matter, to which it is attached is much greater than is usually imagined. The anatomy of the mind, therefore should be learned, as well as that of the body; the study of its constitution in general and its peculiarities, or what may be technically called idiosyncrasies, in any individual case, ought to be regarded as one of the most essential branches of a medical education.

Plato says: "The office of the physician extends equally to the purification of the mind and body; to neglect the one, is to expose the other to evident peril. It is not only the body, that by its sound constitution strengthens the soul, but the well-regulated soul by its authoritative power maintains the body in perfect health."

Hippocrates, admitted that that physician performed most cures, in whom the patients placed the greatest reliance.

SECTION II.—DROPSY CONSIDERED AS A SYMPTOM OF VARIOUS DISEASES.

SUMMARY.

1. Dropsy arising from Derangements in the Nutrition of the Tissues, leading either to an Increase of Secretion, or Diminution of Absorption.

Acute Dropsy.

Case XVI.—Sudden Accumulation of Fluid in the Peritoneum. Researches of Andral, Becquerel and Rodier on the causes of Acute Dropsy. Constitution of the Blood in Acute Dropsy. Treatment of Acute Dropsy.

2. Dropsy arising from Derangements or Alterations of the Blood, leading to Derangement of the Nutrition of the Tissues, with an increase of Secretion or a diminution of Absorption. Effects of the prolonged action of the Malarial Poison in Deranging the Constitution of the Blood, and in inducing Dropsy. Constitution of the Blood in Malarial Fever. Constitution of the Blood in Marsh Cachexia. Treatment of Dropsy arising from the action of the Malarial Poison.

3. Dropsy arising from Derangements of the Circulatory Apparatus, attended with Venous Obstruction and Congestion, increased Serous Effusion from the Distended Blood-vessels and Diminished Absorption.

- (a) Cardiac Dropsy resulting from Structural Alterations of the Heart and large Blood-vessels.

Case XVII.—Cardiac Dropsy ; Dilatation of Heart ; Death.

Case XVIII.—Cardiac Dropsy.

Case XIX.—Dilatation of Heart ; General Anasarca ; Death.

Case XX.—Dilatation of Cavities of Heart ; Universal Dropsy.

Case XXI.—Articular Rheumatism ; Valvular Disease.

Case XXII.—Aneurism of Internal Iliac.

Case XXIII.—Aneurism of Descending Aorta.

Case XXIV.—Aneurism of Ascending Aorta.

Case XXV.—Aneurism of Arch of Aorta.

Case XXVI.—Aneurism of Arch of Aorta.

Case XXVII.—Aneurism of Arch of Aorta and Ascending Aorta ; Dilatation of Heart.

Treatment of Cardiac Dropsy.

- (b) Hepatic Dropsy, arising from some Obstruction to the Circulation of the Blood, through the Liver. Cirrhosis, Fatty Degeneration and Atrophy of the Liver.

Case XXVIII.—Dropsy resulting from Obstruction of the Portal Circulation in Cirrhosis of the Liver.

Case XXIX.—Dropsy resulting from Cirrhosis of the Liver and Cardiac Disease.

Treatment of Hepatic Dropsy.

4. Dropsy arising from Derangement or Lesion of those Organs which regulate the amount of the Blood, as well as its Constitution, by regulating the amount of the Watery Element, and by the elimination of Excrementitious Material. Dropsy arising from Diseases of the Kidney.

Case XXX.—Dropsy resulting from Bright's Disease of Kidney.

Case XXXI.—Bright's Disease of Kidney. Anasarca.

Case XXXII.—Bright's Disease of Kidney.

Case XXXIII.—Bright's Disease of Kidney.

Treatment of Dropsy arising from Disease of Kidneys.

Tabular Statement of Cases treated in Charity Hospital, in Medical Service of Joseph Jones.

Pathological Preparations preserved and deposited in the Medical Department of the University of Louisiana, illustrating the Clinical Memoranda of Joseph Jones.

Acknowledgment of the Services rendered by the Medical Class of the University of Louisiana.

SECTION II.—DROPSY CONSIDERED AS A SYMPTOM OF VARIOUS DISEASES.

Useful results in clinical instruction, may sometimes be obtained, by grouping together the more important facts relating to some grave and striking symptom, and by investigating the relations of this symptom to a large number of diseases. No symptom is more striking or more uniformly grave, than dropsy, and as the practitioner is often tempted to treat this distressing complication of a number of dissimilar diseases, upon a uniform plan of routine practice, it was thought important to demonstrate to the students, its connection with various diseased states. We are thus enabled to group together many of the most interesting cases of disease of the heart and circulatory system, and of the abdominal organs, occurring in our medical service in the Charity Hospital.

Each of the diseases, illustrated under the present section, has received special consideration of itself, and has been carefully described and illustrated in the daily lectures at the bedside in the wards. Thus during the last course of lectures of the

Medical Department of the University of Louisiana, I delivered in the wards and in the amphitheatre, one hundred and twenty clinical lectures, which embraced amongst other subjects and diseases, the following: Method of investigating disease and of recording cases; instruments employed in the investigation of diseases; the value and use of the thermometer in the investigation and diagnosis of diseases; chemical and microscopical examination, and analysis of blood and urine; methods of physical exploration; auscultation and percussion; the mechanical appliances and instruments employed by the general practitioner in the investigation and treatment of disease; fevers; intermittent, remittent, congestive or pernicious malarial fevers; yellow fever; typhus and typhoid fevers; small-pox; vaccination; spurious vaccination; measles; scarlet fever; diphtheria; pneumonia; bronchitis; pleuritis; peritonitis; cerebro-spinal meningitis; tetanus; paralysis; epilepsy; insanity; neuralgia; diseases of heart; diseases of abdominal viscera and genito-urinary apparatus; acute and chronic diarrhoea and dysentery; diseases of the liver; hepatitis; jaundice; abscess of liver; various deposits in the liver, as cancerous tuberculous and syphilitic; atrophy, waxy degeneration, cirrhosis and fatty degeneration of liver; Bright's disease of kidney; waxy and fatty degeneration of kidney; phthisis; cancer; scurvy; scrofula; syphilis; gonorrhoea; ulcers; mortification; composition and variations of the blood and urine in various diseases.

In the present section therefore, whilst the cases recorded are grouped so as to illustrate one of the most striking symptoms, common to a number of diseased states, at the same time, the facts and commentaries, will serve to recall to the students, many points illustrated in the daily systematic lectures by the bedside.

Whilst the student is thus taught by experience, that oftentimes no small difficulty is encountered, in determining to which of its many sources, a particular symptom, common to many diseases, should be referred; at the same time, he is impressed with the absolute necessity of acquiring definite notions of the special disease, or condition on which the symptom depends.

It has been proposed to erase dropsy from the list of substantive diseases, and to place it in the catalogue of mere symptoms, and connect it with the original maladies upon which the effusions or accumulations of fluids depend. It would appear however, that it is destined to be considered as a special disease or diseased state by systematic writers, from the great difficulty experienced in many cases, of determining during the life of the patient, the lesions upon which it depends, and also because to the practitioner, dropsy is in all cases, something more than an effect or symptom of disease, as the dropsical effusion, may become the cause of other and most distressing symptoms, causing, in some cases, extensive destruction of tissue, and in others, embarrassing by its pressure, important functions, and even extinguishing life; and finally because the removal of the dropsy, even when the original cause remains, may restore the patient to a state of comparative comfort and health.

We do not propose to enter into an exhaustive consideration of all the causes of dropsy, but desire chiefly to examine the causes which were illustrated by cases actually observed by the students, of the Medical Department of the University of Louisiana.

It will be necessary in the first place, to recall the attention of the students, to the definition of certain terms employed by systematic writers. DROPSY, (formerly written hydropsy, whence by contraction, *dropsy*): a morbid accumulation of watery or serous fluid in the areolar tissue or serous cavities, arising either from increased exhalation, or from diminished absorption, each of which conditions depend upon antecedent states of disease. When limited to one part, the term *œdema* is employed, denoting swelling produced by the accumulation of serous fluid in the interstices of the areolar texture, which swelling is soft, yields under the finger, preserves the impression for some time, and is pale and without pain. When the dropsy is extensive, the term *anasarca*, is employed and by some writers as synonymous with *general dropsy*. When limited to the peritoneum, it is called abdominal dropsy, or *ascites*. Specific names are also applied, as descriptive of the sack, tissue or organ involved; as when it affects the pleura, *hydrothorax*, or dropsy of the chest; when the pericardium, *hydropericardium*, or *dropsy of the heart*,

when the arachnoid, *hydrocephalus*, or *dropsy of the brain*; when the spine, *hydrorachitis*; when the testicle, hydrocele; when the uterus, *hydrometia*; dropsy dependent upon disease of the liver, *hydrops hepaticus*; dropsy dependent upon disease of the kidney; *hydrops renalis*.

During life, there is a continuous circulation of the fluids and elements of nutrition, not only by means of the heart and blood-vessels, but interstitially by a slower process of osmosis through the walls of the blood-vessels and absorbents, and through the individual constituents, the cells and fibres of the various organs and tissues. Although not so rapid or so manifest to the senses as the greater circulation, the constant and slow interchange of the fluids of the body is of great if not of equal importance. The fluid constantly secreted by the closed cavities and interstitial tissues, is as constantly re-absorbed into the circulation: when, therefore, the serous fluid accumulates in the tissues or cavities, without active inflammation, either the quantity of fluid secreted has been abnormally increased, without a corresponding increase in the process of absorption, or it may be with an actual diminution of absorption,—or else the secretion has continued the same as in health, whilst the absorption has been diminished.

Derangements of the due relationship of secretion to absorption in the tissues and cavities of the body, may depend upon—

1st. *Derangements in the nutrition of the tissues, leading either to an increase of secretion or a diminution of absorption.*

2d. *Derangements or alterations of the blood, leading to derangement of the nutrition of the tissues, with an increase of secretion or a diminution of absorption.*

3d. *Derangements of the circulatory apparatus, attended with venous obstruction and congestion, increased serous effusion from the distended blood-vessels and diminished absorption.*

4th. *Derangement of the function of those organs, which regulate the amount of the blood, as well as its constitution, by regulating the amount of the watery element, and by the elimination of excrementitious materials.*

It is important that the student should bear in mind the distinction between *transudations* and *exudations*:

Transudations are not, properly, liquor sanguinis, although

derived from the blood, but consist of water containing more or less of the constituents of the serum of the blood—the salts and albumen—without any appreciable amount of the fibrin or coagulable element. They, therefore, preserve the liquid state; and the act of transudation relates chiefly to the physical properties of the tissues.

In transudation, there is no solution of continuity or rupture, the watery portion of the serum of the blood simply percolating through the porous walls of the blood-vessels; and transudation is usually the result either of a diminution of the albumenoid elements and salts of the serum of the blood, or of undue hydraulic pressure, or of both causes combined. Effusions, or exudations, devoid of fibrin and cytoblasts, and incapable of organization, when retained, are characteristic of dropsy. Occurring upon mucous surfaces which communicate with the exterior, they constitute *fluxes*.

Exudations contain, on the other hand, fibrin and cytoblasts or germ cells, and are capable of coagulation and organization. Exudations are the result of inflammation, whilst in true dropsy this morbid process is wanting.

Inflammation of serous membranes may be attended with more or less effusion, but the liquid is turbid from the admixture of coagulable lymph, and in this respect differs from the clear serous liquid of true dropsy.

1. *Dropsy arising from derangements in the Nutrition of the Tissues leading either to an increase of Secretion, or a diminution of Absorption.*

This division is placed first, not only because it should include the most simple and uncomplicated cases of dropsy, but also because the progress of pathological anatomy and chemistry during the past thirty years, has greatly modified the ideas, formerly entertained respecting dropsy, and the class of dropsies long regarded as idiopathic or essential, has become so restricted, as almost to have disappeared from nosological classifications. Some pathologists have so far restricted the causes, as to admit only two species of dropsy, viz: the so called mechanical dropsies,

the result of an obstacle presented to the flow of blood, whether in the central organ of the circulation, or in a vascular trunk of a certain size; and dropsies symptomatic of a special modification of the blood, consisting exclusively in a decrease in the proportion of the albumen to the serum.

The question involved in the preceding division, does not appear to have been definitely settled; and even in the apparent simple form in which it is now stated, important questions relating to the process of secretion and nutrition, and the connection of the blood with these acts are involved.

Cases of dropsy are not infrequently observed, both in hospital and private practice, which are for the most part acute, and in which no trace of albumen is found in the urine, and the dependence of which, upon some alteration of the blood, or derangement of the action of the kidneys has not been fully established.

Sir Thomas Watson has described a form of dropsy which he calls *active ascites*, where fluid is rapidly thrown out into the peritoneum and cellular tissue of the extremities, after exposure to cold and wet, without fever or any sign of inflammation, and independent of any disease of the heart, liver or kidneys; and where after a short time the fluid is again absorbed. And he gives the following as a typical case of the phenomena of *active dropsy*; a laborer is engaged in some employment, which, while it requires considerable bodily exertion, and causes copious perspiration, necessarily exposes him also to the influence of external cold and moisture; he has been digging (perhaps) in a wet ditch, in winter time, and he pauses to take his meal; or he has been unloading his wagon, and rides home, some miles, in a heavy rain that wets him to the skin; or he has been mowing, in the heat of summer, and lies down to sleep upon the damp grass. All these suppositions are derived from actual occurrences. The perspiration is suddenly checked; and in the course of a few hours he becomes univerrally anasarcaous. Sir Thomas Watson explains the sudden occurrence of dropsy in such cases, by the sudden check of the exhalation of water from the skin and kidneys, lungs and bowels. "But supposing the exhalation from

one of these surfaces to be much diminished, or to cease, without a corresponding increase of function in the related organ, or in any excreting organ communicating with the exterior, then dropsy, in some form or degree, is very apt to rise. The aqueous liquid thus detained in the blood-vessels, seeks, and at length finds some unnatural and inward vent, and is poured forth into the areolar tissue, or into the cavities bounded by the serous membranes."

Dr. Charles Murchison, in his "clinical lectures on diseases of the liver, jaundice and abdominal dropsy," has recorded the following interesting case of what might be termed acute dropsy.

CASE XVI.—Symptoms of Colic followed by signs of Fluid in the Peritoneum.

Edward J., aged 21, who had formerly been a printer, but had been working for six weeks at a carver and gilder's, was admitted into the Middlesex Hospital, under my care, on April 12, 1868. On April 6, he had been suddenly seized with severe pain in the abdomen and retching. The pain had been constant ever since, but had been also liable to some exacerbations. The vomiting had recurred daily, but had not been so violent as at first. The bowels had acted on the 8th and 10th, after castor oil and laudanum. Shortly before his attack, the patient had been suffering from gonorrhœa, and he stated that some years before he had a similar, though much less severe attack, of abdominal pain.

On admission, the patient complained of constant pain in the abdomen, with frequent acute exacerbations. The pain was increased by any movement, and there was also considerable tenderness over the abdomen, most marked over the œcœcum. The abdomen was distended and tympanitic, and the breathing was entirely thoracic. There was frequent retching of scanty-bilious matter. There was a dark red (not blue) line along the margin of the gums. The tongue was moist and only slightly furrowed; there was thirst, and the bowels had not been open for two days. The pulse was 84; the skin was cool, and the temperature under the tongue 97°. There was no albumen in the urine.

The patient was ordered a warm bath, warm fomentations to the belly, an enema of three pints of barley-water with four drachms of tincture of assafœtida, and a grain of opium every four hours.

The enema brought away two copious motions, but with no relief to the pain. On April 13th, a third of a grain of extract of belladonna was ordered every three hours, but next day the pain, tenderness, and tension of the abdomen had increased although the pulse was only 72, and the temperature 97°. He was again ordered a grain of opium every four hours, a draught of castor oil and laudanum and frequent enemata. He also continued taking six grains of opium a day until April 17th, and then three grains until April 23d. Under this treatment the bowels were freely moved, and the paroxysms of pain became less severe; but he still had occasional vomiting, the abdomen grew larger and more tense, and on April 19th, there was unmistakable evidence of fluid in the peritoneum. A thrill could be propagated from one side to the other, on tapping, and where the patient was supine there was dullness on either flank, which varied with his position. He still had occasional paroxysms of pain, but not tenderness of the abdomen. The pulse, however, kept steadily at 72, and the temperature rarely exceeded 98°. The signs of fluid in the peritoneum with occasional slight paroxysms of pain continued until May 4th. After this the abdomen gradually became smaller, and on May 18th it had regained its normal size and presented no sign of fluid, and the patient left the hospital free from pain.

The researches of Andral, Becquerel and Rodier, rendered it probable that in these cases of acute dropsy, there is oftentimes, if not always, in the early stages, a congestion of the kidneys with the appearance of albumen in the urine.

Andral, after noticing the fact that sometimes individuals, who after exposure to some sudden cause of cold, are attacked a few hours after with anasarca, states that, after accounting for the dropsy by supposing that the sudden suppression of the cutaneous function of transpiration rapidly produced a superabundant exhalation of serum into the areola of the cellular tissue and the serous cavities, he was led to conclude that this kind of dropsy was dependent upon derangement of the kidneys.

A young man, previously in good health and strongly constituted, entered the hospital of La Charité with considerable anasarca and commencing ascites. He related to Andral that, a few days before, being abed and asleep, some of his comrades poured upon him a pot of cold urine, while he was in a state of perspiration. He got up naked in order to pursue them, and was very much chilled; he remained, said he, as though frozen. From the day following this occurrence, he began to perceive a slight degree of swelling, which rapidly augmented. The urine of this patient was examined and found to be albuminous. Andral concluded from this that the blood had been deprived by the kidneys of a certain amount of its albumen, and in this way accounted for the formation of the dropsy. *It is then upon the kidneys that the action of the cold had fallen.* This dropsy was not, moreover, of long duration; at the end of a fortnight, the cure was complete.

Becquerel and Rodier, in their pathological chemistry, have given the results of the analysis of the blood in eleven cases of *acute dropsy*.

The following is the *historical* resumé, which these authors give to establish the dependence of acute dropsy upon some alteration of the blood, although this dependence was proved merely by induction.

"Nine of the patients were males, and two were females. In all the disease set in rapidly under the following circumstances.

In one case it followed a sudden suppression of the catamenia from violent emotion; in a second, it occurred at the fifth month of pregnancy, but without any very appreciable cause; in a third it followed an attack of scarlatina; in four other cases it followed a long exposure to cold; in another it resulted from sleeping on the ground in the open air during the month of June; lastly, in three cases the cause was inappreciable. In two of these latter, the patients were suffering from a relapse of the disease.

Of these eleven patients, nine entered the hospital before the fourth, or after the eleventh day of the disease.

The primary phenomena were not the same in every case. In six, dropsy was the only

symptom; in two, it was accompanied by fever; in two others there was likewise a slight amount of fever, with vomiting and diarrhoea; while in another, there was vomiting coupled with an attack of jaundice.

On the admission of the patients into hospital, the only marked symptom was general anasarca of varying intensity, from slight but diffuse puffiness of the integuments up to a considerable infiltration of the sub-cutaneous cellular tissue. The skin was, as a rule, somewhat paler than usual. The remaining organs, and even those which had been affected at the outset of the disease, were in a healthy condition. The feverish symptoms had likewise disappeared. In nine of these patients the urine presented no trace of albumen, either on their entrance into, or during their whole stay in the hospital; it was perfectly natural moreover, both as regards quantity and chemical composition. In two cases, however, the following phenomena were observed: in one man, who was admitted on the fourth day of the disease, a considerable amount of albumen was found in the urine on that and the succeeding day; on the sixth and seventh day it had gradually diminished; on the eighth it was barely discernible, and on the ninth day it had entirely disappeared. The dropsy, however, was not removed until the seventeenth day. In the second case, admitted on the fifth day of the disease, a small quantity of albumen was found on the sixth and seventh day, but none whatever on the eighth.

Of these eleven cases, nine were cured and two left the hospital relieved. In none did the disease last longer than a month.

An analysis of the blood was made in each of these cases and the mean results thus obtained will be found in the subjoined table:

ANALYSIS OF 1000 GRAMMES OF BLOOD.

	Mean.	Maxim'a.	Minim'a.
Specific gravity	1045.84	1053.30	1037.55
Water	830.78	.....	.....
Globules	104.58	134.89	71.10
Solid matters of the serum.....	61.87	65.62	57.24
Fibrin	2.67	4.10	1.25

ANALYSIS OF 1000 GRAMMES OF SERUM.

	Mean.	Maxim'a.	Minim'a.
Specific gravity.....	1022.61	1024.28	1020.05
Water.....	928.47	.....	.....
Albumen.....	58.52	63.18	51.12
Extractive matters and salts	13.01	17.14	7.74

The globules are less liable to decrease than in cachectic dropsy; they nevertheless fell, in one case to 70, and in another to 72. In three cases they were about 120 per 100; in three others, between 10 and 12; and in five cases, between 100 and 110.

The fibrine underwent a marked diminution in two cases only, viz: between 1 and 2 per 100; in six cases it varied from 3 to 6, while in three others it rose above 3 per 100.

The albumen of the serum was always diminished, and in some instances this diminution was considerable; it ranged from 60 to 66 in four cases, and from 55 to 60 in six others, while in one case it fell as low as 51.02.

It is almost needless to add, that the specific gravity of both the blood and serum was always found to have fallen below the standard of health.

Such then is the history of acute dropsy. We have now to interpret and explain its attendant phenomena.

At first, two prominent facts present themselves to our notice; the one being the dropsy, and the other a modification of the blood, consisting in a decrease of the albumen, and of the specific gravity of the circulating fluid itself.

What is then the correlation of these two facts? Upon which of the two does the other depend, or are they independent of each other? To answer such questions, is somewhat more difficult than might be *a priori* imagined. If, in fact, we admit that the alteration of the blood precedes the dropsy, how are we to explain the decrease of the albumen in those cases, where there has not existed (as in cachectic dropsy) any material appreciable cause, to account for the impoverishment of the vital fluid? This difficulty however is not insurmountable, and the following simple explanation may perchance prove satisfactory:

Of the eleven cases quoted above, two were admitted before the seventh day of the disease.

What then did we find in these two cases? An expiring albuminuria, if we may be permitted to use such an expression. On admission, a certain amount of albumen is found in the urine, its decrease is watched, and about the eighth day it is found to disappear entirely. In such a case, the modification of the blood admits of easy explanation.

It is evident, in fact, that the following sequence of events took place: These two individuals whether under the influence of cold or of some other cause, were attacked with a certain amount of congestion of the kidney. This congestion was manifested by the escape of albumen along with the urine, which lasted as long as the congestion itself; viz., seven or eight days, and then ceased. Under the influence of this escape of the albumen, the proportion of that element naturally existing in the blood became diminished, the density of the serum fell, and dropsy was produced. But the change in the composition of the blood, when once effected, lasts for some time after the disappearance of the albumen from the

urine, and as long as this change exists, so long will the dropsy likewise exist. Had these two patients not been seen until the eighth day of the disease, no albumen would have been found in the urine; the diminished amount of that constituent existing in the blood, together with the dropsy, could alone have been discovered, and their correlation would have been lost.

In these two cases this solution of the problem would appear simple and rational, nor do we think it can well be contested. But will it hold good with respect to the remaining nine cases? We think it will; and we admit the same, by induction it is true, but yet upon certain plausible reasons, which are the following:

1. As these nine patients were not admitted into hospital until after the seventh day of the disease, we may readily conceive the albumen to have disappeared from the urine previous to admission.

2. The symptomatic expression of the disease was the same in every case. In several of them its onset was marked by a combination of phenomena, sufficiently characteristic of acute congestion of the kidney (active hyperæmia).

3. The modification of the blood was the same in each of the eleven cases.

4. The progress and duration of the disease were likewise identical in each.

We may now, therefore, offer the following summary of our theory; for, however rational and satisfactory, it is still but a theory:

Under the influence of some cause or other, congestion of the kidney is produced. The congestion is indicated, along with other symptomatic phenomena, by the escape of a certain amount of albumen with the urine; this, ere long, diminishes the natural proportion of the albumen of the blood, and the latter condition in its turn gives rise to a greater or less degree of dropsy. We may here observe that, when this decrease of the albumen takes place rapidly, dropsy is produced with greater facility and with less diminution on the part of this constituent of the blood, than when it occurs in a chronic form. But the congestion of the kidney is generally of much shorter duration than the modification of the blood and its consecutive dropsy; it disappears therefore long before these latter phenomena, and if the patients are not examined until a certain time after the onset of the disease, they alone are observed, the escape of albumen with the urine having altogether ceased.

If the theory which we have thus propounded be the true one, it would seem advisable to designate the disease in question, as congestion or active hyperæmia of the kidney, rather than as acute dropsy from decrease of the albumen of the blood. We do not, however, deem ourselves authorized to make such a change, being unable, as yet, to elevate our hypothesis to the rank of a positive fact, at least in the majority of cases.¹¹

These investigations of Becquerel and Rodier, conducted in the spirit of Philosophic inquiry, are of great value, in establishing the connection of acute dropsy with congestion of the kidneys. It would be more reasonable to suppose that the accompanying dropsical effusion was as much the result of the non-elimination of the elements of the urine, and the retention of the watery element, as the mere loss of albumen. I have witnessed the supervention of acute dropsy in patients who were exposed to cold, during convalescence from chicken pox, measles and scarlatina, within two days after the cause which produced congestion of the kidney, with almost complete cessation of its action. In such cases, the two or three ounces of urine excreted during the twenty-four hours, although loaded with albumen, were not sufficient in quantity to materially affect the composition of the blood. The most sudden case of acute dropsy, that I have ever witnessed, was attended with almost complete suppression of urine, as the result of exposure to cold during convalescence from variola; and uremic convulsions of the most violent character supervened.

The retention of the urea, and water normally excreted by the

kidneys, appears to be connected with the dropsical effusion, even more intimately than the loss of a small amount of albumen.

The treatment of acute dropsy should be based upon an accurate knowledge of the previous state of the patient, and the amount and composition of the urine.

When the kidneys are congested, and the urine is scant and loaded with albumen, and the patient suffers with fever, general uneasiness and gastric derangement, both general and local bloodletting may be practiced with benefit.

Leeches and cut-cups over the region of the kidneys will prove beneficial in relieving the congestion. After the albumen has disappeared from the urine, and in those cases in which its presence has been never detected, blood-letting is not indicated.

The diet should be light but nutritious, and composed largely of vegetable and farinaceous articles.

Various measures may be instituted to procure the removal of the effused fluid; as purgatives, hot air baths, diuretics and stimulating frictions.

When the kidneys are congested, *stimulating* diuretics should be avoided, and the *saline* diuretics should be employed. The bitartrate of potassa (cream of tartar), employed in the proportion of one ounce dissolved, or rather suspended in one pint of the infusion of juniper berries (*juniperi fructus*), may be administered during the twenty-four hours. If the gentle stimulant effect of the volatile oil and resin of the juniper berries be contra-indicated, the cream of tartar may be given suspended in one pint of water. A wine glassful of this mixture may be taken every two or three hours. After the relief of the kidneys, and the establishment of the excretion of the urea in its normal amount, good diet, together with tonics, especially cinchona and the vegetable bitters, may be employed to restore the blood to the normal standard.

2. *Dropsy arising from derangement or alterations of the Blood, leading to derangement of the Nutrition of the Tissues, with an increase of Secretion, or a diminution of Absorption.*

The prolonged action of the malarial poison, not unfrequently

induces such changes in the composition of the blood and such derangements of the liver and spleen, as to lead to the effusion of serous fluid into the areolar tissue and peritoneum. The changes of the blood induced by malarial fever, appear to be the chief cause of the dropsical effusions, although in some cases this symptom may be attributed to the mechanical obstacle, afforded by the enlarged spleen and liver. Several well marked cases of dropsy resulting from the prolonged action of the malarial poison have been from time to time presented to the Medical Class of the University of Louisiana, in which no albumen could be detected in the urine, nor any diminution of this secretion, nor any very great enlargement of the liver and spleen. Such cases were uniformly characterized by a sallow, anæmic complexion, and watery blood, poor in solid constituents. The effects of the malarial poison in altering the composition of the blood, are shown in the following table embodying the results of my investigations:

The effects of the malarial poison upon the blood, are rendered manifest, by a comparison with the following typical formula of the constitution of the blood.

Physiological limits of the variations of the constituents of the blood, as established by the researches of MM. Bequerel and Rodier :

IN 1000 PARTS OF BLOOD.

The water, may vary.....	from	760.00	to	800.00.
“ specific gravity may vary.....	“	1055.00	to	1063.00.
“ globules “ “	“	120.00	to	150.00.
“ fibrin “ “	“	2.00	to	3.50.
“ solid matters of serum may vary “	“	90.00	to	105.00.
“ saline constituents “ “ “	“	4.00	to	10.00.

IN 1000 PARTS OF SERUM.

The spec. grav. of serum may vary.....	from	1027.00	to	1032.00.
“ water of serum may vary.....	“	880.00	to	900.00.
“ solid matters “ “	“	100.00	to	120.00.
“ albumen may vary.....	“	70.00	to	90.00.

The following is the typical formula of the constitution of the Blood in health, adopted by MM. Becquerel and Rodier.

ANALYSIS OF 1000 PARTS OF BLOOD.

Specific gravity of blood.....	1060.00
Water.....	781.60
Globules.....	135.00
Albumen.....	70.00
Fibrin.....	2.50
Fatty Matters, Extractive Matters, and free Salts.....	10.00
Phosphates.....	0.50
Iron.....	0.35

ANALYSIS OF 1000 PARTS OF SERUM.

Specific gravity of serum.....	1028.00
Water.....	908.00
Albumen.....	80.00
Extractive Matters and free Salts.....	12.00

The following results are established by this comparison :

1. *In malarial fever the specific gravity of the blood and serum is diminished.*

The specific gravity of the blood ranges in this disease from 1030.5 to 1042.4, and the specific gravity of the serum from 1018. to 1023.6.

In health, on the other hand, the specific gravity of the blood

varies from 1055. to 1063., and the specific gravity of the serum from 1027. to 1032.

2. *In malarial fever the colored blood-corpuscles are greatly diminished.*

In health the dried corpuscles may vary from 120. to 150. parts in the 1000 of blood, and the moist blood-corpuscles from 480. to 600. In malarial fever, on the other hand, the dried colored corpuscles range from 51.98 parts to 107.81; and the moist blood-corpuscles from 207.92 to 323.63.

The careful comparison of these analyses of malarial blood with each other, reveals the fact, that the extent and rapidity of the diminution of the colored corpuscles, corresponds to the severity and duration of the disease. A short but violent attack of congestive or of remittent fever, in its severer forms, will accomplish as great a diminution of the colored blood-corpuscles, as a long attack of intermittent fever, or the prolonged action of the malarial poison.

3. *In malarial fever, the relation between the colored corpuscles and liquor sanguinis is deranged.*

Thus in healthy blood the relative proportions of moist blood-corpuscles in the 1000 parts and liquor sanguinis may vary from 480.00 to 600.00 of the former, and from 520.00 to 400.00 of the latter; whilst in malarial fever, the globules vary from 207.92 to 323.63, and the liquor sanguinis from 792.08 to 676.37.

4. *The Fibrin of Blood is diminished to a marked extent, in some cases of malarial fever, and is altered in its properties and in its relations to the other elements of the blood, and to the blood-vessels.*

5. *The Organic matters of the Liquor Sanguinis, and especially the Albumen, is diminished in malarial fever.*

Thus the solid matters of the serum may vary in health, from 90.00 to 105.00; whilst in malarial fever, they vary from 62.78 to 80.22 parts, in the 1000 parts of blood.

It is chiefly to this latter change, viz., the diminution of the albumen of the blood in malarial fever, that the dropsical effusions are to be traced. The other changes of the blood, without doubt, lead to congestions of the liver and spleen, and to derangements of the capillary circulation and nutrition of the organs and tissues, but a careful examination of those diseases

as anæmia, chorea, and pyæmia, in which the colored blood corpuscles are greatly diminished, will show that this course alone will not induce dropsy. In the watery state of the blood induced by the action of paludal poison, comparatively slight obstructions of the circulation in the spleen and liver might lead to dropsical effusion.

It would appear also, that from the derangement of nutrition caused by the action of the malarial poison upon the blood and nervous system, that certain effete products are not sufficiently and properly eliminated, and then as in the case of urea, may be active in the production of dropsy.

MM. Becquerel and Rodier have demonstrated that in that peculiar condition of the system called marsh cachexia, accompanied by a remarkable decoloration of the skin, and not unfrequently by dropsy, and produced by the long influence of malaria, there is the greatest decrease of both the albumen and the globules; as is well shown by the following analysis of marsh cachexia.

ANALYSIS OF 1000 PARTS OF BLOOD IN MARSH CACHEXIA.

	A man, aged 50, suffering from Marsh Cachexia and General Dropsy.	A man, aged 48, suffering from Marsh Cachexia and General Dropsy.	A man, aged 48, suffering from Marsh Cachexia and General Dropsy.	A man, aged 23, suffering from Marsh Cachexia and General Dropsy.	A man, aged 18, suffering from Marsh Cachexia and General Dropsy.
Specific Gravity.....	1035.40	1040.00	1034.06	1033.85	1040.57
Water.....	869.34	853.75	869.71	875.67	846.31
Moist Globules.....	268.40	407.48	269.12	224.88	378.88
Solid Matters of Moist Globules..	67.10	101.87	67.28	56.22	87.22
Water of Moist Globules.....	201.30	305.61	201.84	168.66	251.66
Solid Matters of Serum.....	61.10	41.84	59.88	63.83	62.32
Fibrin.....	2.36	2.54	3.13	4.27	4.15

ANALYSIS OF 1000 PARTS OF SERUM IN MARSH CACHEXIA.

Specific Gravity.....	1020.37	1016.40	1021.61	1024.15	1023.56
Water.....	936.40	953.29	930.08	926.75	922.98
Albumen.....	55.68	37.26	50.20	60.20	63.25
Extractive Matters and Salts....	7.92	9.45	13.72	13.05	13.77

The mean composition of the blood in marsh cachexia may be represented thus:

Analysis of 1000 parts of blood (mean composition of in five cases of Marsh Cachexia.)

Specific gravity.....	1036.76.
Water.....	962.33.
Moist globules.....	303.76.
Dried residue of globules.....	75.95.
Water of globules.....	227.82.
Solid matters of serum.....	57.79.
Fibrin.....	3.39.

MEAN COMPOSITION OF 1000 PARTS SERUM.

Specific gravity.....	1021.22.
Water.....	935.10.
Albumen.....	53.32.
Extractive matters and salts.....	11.53.

The following interesting remarks, with reference to the cause of the dropsy, are made by MM. Becquerel and Rodier:

“The dropsy has been attributed to the mechanical obstacle afforded by the enlarged condition of the spleen, so common in these cases. We do not deny the possibility of such a sequence; but it is certain that in many instances, we fail to discover such an amount of splenic enlargement, as would suffice to explain the occurrence of an increasing and general anarsarea. In only one of the preceding analysis of the blood, in marsh cachexia, did we notice a marked degree of splenic enlargement; it was, however, insufficient to account for the serous infiltration.” * *

“It is in this disease, therefore, that we meet with the greatest decrease of both the albumen and globules. It may be taken as the type of cachectic dropsy.”

“How, now, are we to account for so great a change in the composition of the blood? We are driven to admit a poisoned condition of this fluid, produced either by the absorption of the marsh miasm, or by repeated attacks of the peculiar fever to which this miasm gives rise.”

The indications in the treatment of dropsy arising from the action of the malarial poison, are:

1st. The removal of the cause, giving rise to the phenomena

of malarial fever, and causing a simultaneous decrease of the globules and albumen, with congestion of the liver and spleen. The patient must be removed from the influence of the paludal poison. In many cases, even after the removal of the patients to elevated, healthy non-miasmatic regions, the attacks of ague will recur again and again with obstinacy.

2d. The prevention of the recurrence of the malarial paroxysms, and the removal, neutralization or elimination of the cause. This indication may be fulfilled by the persistent use of cinchona, in various forms, and especially sulphate of quinia. To prevent the recurrence of the paroxysm, quinine should be given in doses varying from five to ten grains every two or three hours, until from twenty to thirty grains have been taken before the time of the expected paroxysm. In the intermission, and in fact throughout the continuance of the dropsy, the patient should be kept gently under the influence of quinine, from two to four grains being administered three times a day. The iodide of quinia (from one to three grains dissolved in a wineglass of water), has proved highly beneficial in my hands in such cases. As the blood is impoverished, good results are obtained by giving iron in combination with the sulphate of quinia.

3d. The removal of the dropsical effusion. This will best be accomplished by the judicious use of purgatives, diuretics, the hot air bath, and stimulant frictions of every kind, as dry friction, and aromatic, alcoholic and ammoniacal frictions.

Purgatives judiciously used not only cause absorption of the serous effusion, but they also diminish the congestion of the liver and spleen. The blue pill (*pilulæ hydrargyri*), in doses of from five to ten grains, occasionally may be administered with marked benefit. The cream of tartar and juniper berry infusion is one of the best diuretics in such cases.

In the employment of purgatives and diuretics, great care should be exercised not to exhaust the patient, or to weaken and derange the digestive function.

If possible, we should avoid impoverishing the blood further by the use of these remedies.

In many cases, the free perspiration, induced by the hot air bath, will prove of essential benefit.

4th. The improvement of the blood. Nitrogenized food, especially good beef-steak, if the digestive powers are sufficiently strong, fresh milk, and soft boiled eggs, with a moderate quantity of generous wine, will tend, not only to improve the digestive powers, but also to furnish the materials for healthy, rich blood.

The digestive powers and the nervous system may, in like manner, be invigorated by the use of the vegetable bitters, and especially of gentian, and strychnine. It is best to administer the strychnine in doses of one twentieth of a grain dissolved in water acidulated with citric acid. In many cases it is found, that the dropsical effusion diminishes, just as the blood recovers its normal composition.

Iron is almost universally indicated, by the marked decrease of the blood globules, and on account of its valuable effects in restoring the digestive function. One of the best combinations in such cases, is a pill composed of three grains of precipitated Iron (iron by hydrogen), two grains of sulphate of quinia, and one grain of the extract of rhubarb. The extract of rhubarb is used in proportions just sufficient to overcome the astringent effect of the iron. This pill may be taken three times a day and persevered in for weeks and months. In this combination, we likewise obtain the prophylactic action of sulphate of quinia.

The cure of this form of dropsy is tedious and prolonged in most cases, and the iron and bitter tonics should be used with perseverance.

5. Hygienic Measures. A healthy, well ventilated residence in an elevated non-malarious region, gentle but regular exercise in open air, and the wearing of warm clothing, as flannel next to the skin, are valuable adjuvants to treatment.

Dropsy may also arise from the changes of the blood, induced by insufficient and salt food (as in scurvy), by repeated hæmorrhages (as the hæmorrhoidal flux); by chronic diarrhœa, and by the effects of the absorption of cancerous matter.

3. *Dropsy arising from derangement of the Circulatory Apparatus, attended with venous obstruction and congestions, increased serous effusion from the distended blood vessels, and diminished absorption.*

Under this head may be classed Cardiac dropsy, resulting from

structural alterations of the heart and large blood-vessels ; and Hepatic dropsy resulting from certain diseased states of the liver, and sometimes accompanied by enlargement and induration of the spleen.

Cardiac Dropsy, resulting from structural alterations of the heart and large blood-vessels.

In the first stages of heart disease, the constitution is as a general rule unaffected, and apart from certain local phenomena and physical signs, and slight dyspnœa and palpitation, the general health appears good.

Owing to the continuous disturbance however slight, at first, of the circulation and respiration, the dyspnœa and palpitation increase, the nutrition of the body is impaired, the general health progressively deteriorates and a slight amount of œdema appears in the lower extremities.

As the disease progresses there is not only a progressive aggravation of the affection of the heart, but also, as a direct effect of the disturbances of the respiration and circulation, a great increase of dyspnœa and dropsy.

In the last stage of cardiac disease in which the patient is doomed to speedy death, the countenance assumes a yellowish white, cachectic appearance, and the dropsy in many cases becomes general.

Although cardiac dropsies appear in most cases to be preceded immediately by venous congestion, we should not refer the dropsical effusion to this cause alone, for it appears to be referable, to a certain extent at least, to the progressive alteration of the blood and derangement of nutrition caused by the disturbance in respiration and circulation. The blood is not properly oxygenated, the carbonic acid is not properly eliminated, and the organs and tissues are not only supplied by an imperfectly elaborated blood, and that too in an irregular manner, but the office of important organs as the kidneys and liver is in turn deranged.

This symptom of cardiac disease is usually, therefore, of late occurrence, making its appearance almost invariably about the ankles and feet, as slight œdema, and by slow degrees ascending towards the trunk, and ultimately involving the upper extremities

and face. The anasarca commencing in the feet and gradually proceeding upwards, precedes the ascites, and even when the belly becomes swollen, the swelling of the legs is large, out of all proportion to the ascites.

According to Dr. Walshe, dropsy, sequential to heart disease, occurs in the following situations, enumerated in the order of frequency with which they severally suffer; the subcutaneous cellular tissue; the pulmonary parenchyma; the peritoneal and pleural sacs; the pericardium; the cerebral and spinal arachnoid and sub-arachnoid spaces; the tunica vaginalis; the joints, and the eyeball, especially the aqueous chambers. But in the last three situations, dropsy is excessively rare.

Dr. Latham has justly observed that the first appearance of the dropsy, marks an eventful period in the progress of cardiac disease. It indicates that a new law takes effect in the circulation, and gains the mastery of the law of health, which has hitherto been able to retain the watery elements of the blood-vessels, now the serum escapes and accumulates in the areolar tissue of the body.

The forms of valvular disease, as laid down by pathologists in the order of the frequency in which dropsy is met with, are: (1), Considerable contraction of the left auriculo-ventricular orifice; (2), Dilatation of the auriculo-ventricular orifice, with hypertrophy and dilatation of the right ventricle; (3), A state of the mitral valve and orifice permitting free regurgitation; (4), Considerable contraction of the aortic orifice. As a general rule, cardiac dropsy supervenes earlier, the earlier that venous congestion ensues. The establishment of a varicose condition of the blood-vessels in the air-vesicles of the lungs, essentially aggravates the dyspnœa. When the dropsy is carried to great amount, erythema, erysipelas, and even sloughing are prone to occur; the skin cracks, the serous fluid oozes more or less copiously.

Dr. Walter Hayle Walshe, in his valuable "*Practical Treatise on the Diseases of the Heart and Great Vessels*," gives the following important observations upon the nature and causes of dropsy and serous flux of cardiac origin:

(a). *Systemic Form.*

Dilatation was formerly regarded as the condition of the heart mainly inducing the important class of dropsical symptoms. This opinion, discountenanced by M. Brouillard, who sought to establish valvular obstruction as their sole efficient cause, was restored to favor by Hoppo and M. Andral—the former of whom indeed went the length of teaching that pure hypertrophy, also, was capable of generating dropsy. Of late, Dr. Blakiston has brought together a body of evidence calculated to show that the systemic vessels do not become loaded in cases of dilatation, unless there be co-existent tricuspid regurgitation. Still more recently Dr. H. Douglas has defended the original thesis of our forefathers. It becomes necessary for me here to express an opinion on this "vexed question" of the mechanism of cardiac dropsy; let me commence by throwing into a series of propositions such inferences as flow directly from facts that have fallen under my own notice.

1. Mitral regurgitation or obstruction, or aortic regurgitation or obstruction, may severally exist, and, for a lengthened period, without systemic dropsy supervening.
2. Mitral regurgitation and aortic regurgitation may co-exist for years, and yet no dropsy occur.
3. Both of these propositions hold good, whether notable hypertrophy do, or do not, exist behind the obstruction.
4. Simple hypertrophy of the left ventricle may reach the highest point without systemic congestive effects of kind arising. Dr. Hoppo, as is well known, maintained the reverse, holding that pure hypertrophy, if protracted, will produce general dropsy; but he gives no cases demonstrating the facts, and the motives of his belief are, as far as he shows, totally speculative. And *a priori* views are not so completely in his favor as he appears to imagine; when he talks of the "increased force of circulation surmounting the natural tonic power of the capillaries," he forgets that that very tonic power may have increased *pari passu* with, and in consequence of, the growth of the hypertrophy. The question is one of observation; and I have stated what I have actually seen in persons who had not been reduced by treatment to a state of anæmia.
5. Dilated hypertrophy, even of the left ventricle may last for years without any such effect, provided the dilation be not in notable excess.
6. The heart may be in a state of advanced fatty metamorphosis, the pulse feeble and infrequent, the encephalic and respiratory functions exhibit the singular perversions attending a high degree of the disease, the entire organism betray functional languor and inactivity, and yet even the prætibial integuments fail to pit in the least under pressure.
7. Or the heart may be soft and flaccid and the pulse persistent, frequent, feeble, and irregular in force and rhythm, and yet no systemic congestions occur.
8. The natural relationship of width of the arterial orifices, and also of the auriculo-ventricular orifices, may be materially perverted, without the least systemic dropsy arising, until the closing days of life. This is seen, for instance, in cyanotic cases where the aorta and pulmonary artery are transposed in 'origin,' the relationship of the great veins to the two sides being normal. Similar evidence is often afforded by cases of aneurism of the arch of the aorta with an orifice more or less widely dilated, so as to exceed that of the pulmonary to variable amounts.
9. Tricuspid regurgitation where the right ventricle is in a state of dilated hypertrophy, as shown during life, by swollen and pulsatile jugular veins, which fill from below, and as shown after death by actual examination, does, not necessarily produce dropsy. Besides if tricuspid regurgitation sufficed unassisted, on mechanical principles to produce systemic dropsy, why should not constriction of the pulmonary orifice, so frequent in cyanosis, habitually engender it.

These propositions are, I believe, incontrovertible; they are the mere general expression of facts which are perpetually occurring. I cannot, then, see how the conclusion is to be avoided, that something beyond and in addition to any one, or any group, of the cardiac conditions referred to, is required in order, as matter of necessity, to entail the occurrence of dropsy. I can scarcely suppose the unwarranted assumption that, were life sufficiently prolonged, these conditions would of themselves suffice for the purpose, would be seriously urged in rejoinder. And again, the existence of some acting cause beyond, and independent of, the heart, is farther shown by the facts: that there is no direct relationship between the amount of heart disease and of dropsy; that dropsy comes on suddenly sometimes from extraneous causes, the state of the heart remaining, as far as ascertainable, in precisely the previous condition; and that dropsy diminishes and increases, comes and goes, either spontaneously or through the influence of treatment, while the organic changes in the heart remain permanent and unmodified.

We must not, however, run into the opposite and equally erroneous extreme of wholly ignoring the direct influence of organic changes of the heart and its orifices. Two cardiac affections are, as matter of experience, frequently associated with systemic dropsy—namely, dilatation and tricuspid regurgitation. And it is certainly so rare for either of these states to exist for any length of time without the supervention of such dropsy, that any hypothesis, explanatory of cardiac dropsy, must look to these states as forming important links in the chain of causes.

A share in the direct mechanism of systemic dropsy being thus conceded to structural change in the heart, the question next arises what is the nature of the influence, independent of that organ, which completes the causation. Local conditions in the heart, we admit, establish a difficulty in the systemic circulation; what influence actually and directly leads to the dropsical exscesis?

This influence seems a compound of conditions, favorable to transudation of the serosity of the blood, in that fluid itself, in the walls of the capillaries and venous radicles, and in the receiving tissues.

First, as concerns the blood, the influence of an impoverished state of that fluid is too well known to be for a moment eoutestible. Experiments on animals prove that if the veins be more or less loaded with water, they yield this in the form of dropsical effusion. The œdema, and sometimes extensive anasarca, of spasmia; the slight œdema attending the hypnosis of pretracted convalescence from various acuto diseases; the various dropsies of nremia—are all illustrations in point. Obviously morbid states of the blood, when of the pteper kind of themselves alone suffice for the production of dropsy; look at the sudden anasarca of acuto Bright's disease, or of an acuto recrudescence in the chronic affection, while the heart, liver and lungs, may be texturally sound. *Secondly*, it is readily conceivable that the variable density of texture of the walls of the vessels may promote or restrain the process of filtration. *Thirdly*, cases occasionally present themselves, in which dropsy anprevening from diseased heart, fails to affect portions of the body, noted, under ordinary circumstances, as the earliest and readiest sufferers—for instance the lower extremities. I have observed this where the legs had been the seat of erysipelas and subcutaneous inflammation prior to the occurrence of the cardiac dropsy; the chronic anatomical changes in the cellular tissue in such a case possibly acts as a barrier to its reception of serosity from the vessels.

It may, no doubt, be argued *à priori* that dilatation of the heart, occurring as a primitive disease through simple weakness, or following actual structural alteration of the texture of the organ, will occasio. ally prove the efficient cause of dropsy, even admitting the necessity of blood change just contended for. It may be urged that when the heart is so affected, the necessary *vis a tergo* in the circulation is wanting, and capillary stagnation must ensue—and that this very stagnation, becoming habitual, may modify the qualities of the blood, and impair the nutrition of the walls of the vessels through the strain they suffer. But plausible though this argument be, I believe, as matter of experience, that the necessary change in the composition of the blood is meanwhile really worked out by ether and more effective agencies.

Long since, Lower showed that local dropsy might be produced by ligature of veins; and the occurrence of serons effusion from local obstruction of vessels of that class is clinically well known. But here are instances of sudden and limited ostruction; they are evidently not logically comparable with cases of slow and centric obstruction. And even where the difficulty in the way of the returning blood is purely local, it does not necessarily follow that transudation shall occur from the communicating venous radicles, although the evidences of changed condition of these vessels be structurally obvious. Thus in case of aortic anemism, pressing one or both innominate veins, the capillaries of the base of the neck may dilate in such manner as to produce notable general swelling at the spot, yet not a particle of œdema be discernible."

(b) *Visceral and Intra-Serous Form.*

Pulmonary œdema is chiefly connected with disease, constrictive or regurgitant, of the orifice, sometimes with dilatation of the left ventricle, very rarely with hypertrophy of the right. *Ascites* arises especially from general dilatation of the heart and tricuspid regurgitation; and these are the conditious mainly observed, as antecedents to all the ether varieties of dropsy enumerated."

B.—Cardiac Flux.

(a) The intestines become the seat of serons flux in some rare instances of certain forms of heart disease. Watery diarrhœa thus induced may be wholly spontaneous, or the original excitant of the discharge may have been some hydrogonne purgative, the influence of which holds en. * * *

(b) I believe that in some of those case, where vomiting forms so obstinate a symptom of chronic heart-disease, the immediato cause of the nausea is the presence of an irritating watery secretion from the gastric surface. It is never very copious.

(c) Watery flux from the kidneys, though on the whole not very rare, is uncertain in its occurrence, doubtful in its mechanism, and cannot be said to belong to any particular cardiac affection. For my own part I have seen passing attacks of hydruria more frequently in connection with different forms of dynamic disturbance than with any specific organic disease. * * * Here the rationale is the same as in the case of hysterical diuresis; and so long as the immediate mechanism of the latter continues in its present obscurity, we must remain in ignorance of that of the former.

Albuminnria occurs every now and then in cases of cardiac disease, especially of dilatation and tricuspid insufficiency, the tendency of which is to congest the viscera. The cortical and tubular substances remain texturally sound. The character of this form of albuminous flux are as follows: it is a passing phenomenon, sometimes disappearing spontaneously, sometimes yielding to treatment; the albumen is always small in amount; the specific gravity of the fluid never falls very low, its color remains unaffected and its smell wholly free from that whey-like odor to which I long since drew attention as notably significant of Bright's disease. A few casts of the latter occasionally appear."

The researches of pathological chemists have shown that in the early stage of organic heart disease, marked merely by the local

phenomena, a few physical signs, and a slight amount of dyspnoea and palpitation, the proportion of water increases, and the specific gravity of the blood consequently diminishes; the globules decrease somewhat, their mean being represented by 125; the fibrin remains unchanged; and lastly, the albumen contained in 1000 parts of serum undergoes a trifling diminution, proportionate to that of the globules, its mean being represented by the figures 71.05.

As the disease progresses, the physical signs become more clearly defined, the local symptoms more marked, and the general health begins to fail, and the constitution to evince signs of deterioration, and the face becomes anæmic and the lower extremities slightly œdematous, the specific gravity of the blood and serum becomes lower, the proportion of water increases, the globules undergo still further diminution, their mean being represented by 117; the fibrin augments in many cases; and lastly, the albumen decreases like the globules, its mean proportion in 1000 parts of serum being 66.21. The dropsy is indicated at its onset by a decrease of the albumen of the blood.

When the disease has reached an advanced stage, with severe palpitation and dyspnoea, considerable serous infiltration, invades the pleural and peritoneal cavities as well as the subcutaneous cellular tissue. Under these circumstances the blood for the most part, undergoes great modifications, of which the following is a general outline.

The amount of water is greatly increased, whilst the specific gravity and solid matters of both the blood and serum are proportionally diminished. The blood globules and the albumen, and especially the latter element, undergo very considerable decrease. The decrease of the albumen of the serum is consecutive to the dropsy, only taking place when the latter becomes well marked. The decrease of the albumen has been referred to the impoverishment which the blood undergoes by reason of the loss of serum constituting the dropsy. Becquerel and Rodier, very justly concluded from their analysis of the blood in cardiac dropsy, that, when once the blood has become impoverished by the occurrence

of mechanical dropsy, it is probable that infiltration proceeds with increased rapidity and that the serum, even more watery than heretofore, escapes with greater facility under the influence of two causes acting in the same direction, viz., the impediment to the circulation, and the diminution of the solid matters of the serum.

The following cases of cardiac dropsy, have been selected from those observed in our wards in the Charity Hospital, by the students of the Medical Department of the University of Louisiana.:

CASE XVII.—*Cardiac Dropsy of Heart: Hypertrophy; First stages of Cirrhosis of Liver.*

In this case the students were enabled to watch the gradual progress of the disease to a fatal issue, and to observe the gradual aggravation of the heart symptoms and the origin and increase of the general anasarca.

James Duncan, age 30 years; height five feet, nine inches; weight 135 pounds; dark hair, blue eyes, dark complexion; native of Ireland; six years a seaman and fifteen years a boatman on the Mississippi river. Twelve years ago had several attacks of chills and fever; again six years ago, and finally during the fall of 1868.

Eighteen months ago, the patient says that he was working in the hot sun, and drank large quantities of cold ice water, when he was attacked suddenly with an affection of the heart, which lasted several days; six months afterwards was attacked in a similar manner and spit up blood.

Habits intemperate at times; previous to the late civil war, drank regularly but not to intoxication; entered the Southern service and drank but little during the war. Since the war used alcoholic stimulants freely to relieve the pain in the region of the heart. At first the stimulants gave comfort and he consumed large quantities, even to intoxication. Shortly, however, before entering the hospital, the stimulants appeared to aggravate the disease and the patient gave up steady drink. Suffered severely the week before entering the hospital.

Admitted into the Charity Hospital, ward 18, bed 267; March 9th, 1869. At this time the patient was suffering with great pain in the region of the heart, soreness and pain in the epigastric region, and along the abdomen in the region of the liver, extending on either side to the hypochondriac regions. Bowels irregular and constipated. Appetite pretty good, patient indisposed to exertion, but not confined to bed.

Treatment, consists in the administration, three times a day, of ten drops of Tincture of Digitalis and the same quantity of the Tincture of the Sesqui Chloride of Iron.

April 5th, 1869.—Patient takes gentle exercise during the day, walking around the ward and hall; but suffers debility from muscular exertion; came under my treatment at this time, and the following results of physical exploration were then recorded:

Inspection and percussion revealed enlargement and dilatation of the heart; the dull space over the region of the heart being at least twice as large as in health. The beat of the heart is lower down and more to the right than normal; and the impulse as communicated to the hand placed upon the wall of the thorax, is different from that of health, giving the impression of the impulse of a large soft quivering bag, against the thoracic walls. The space of the walls of the thorax against which the apex of the heart is propelled appears to be at least three times the ordinary size of health. The first sound of the heart is entirely altered, being converted into a loud blowing sound, much more distinct upon the left side, and over the region of the left auriculo-ventricular valve, near the junction of the cartilage of the fourth left rib with the sternum. This loud cardiac murmur was heard at the apex of the heart, and along its body, becoming most distinct over the region of the auriculo-ventricular valves, in the middle of the sternum, in a line with the articulation of the cartilages of the fourth ribs with the sternum, and gradually diminishing towards the

baso, and becoming quite indistinct over the position of the semilunar valves of the aorta and pulmonary arteries, near the junction of the third ribs with the sternum. At the apex of the heart the second sound was heard with difficulty. At the base of the heart or rather about the region of the arch of the aorta and the arch of the pulmonary artery, above the line joining the cartilages of the third ribs with the sternum, the first sound was heard with difficulty, or rather it became indistinct. The second sound of the heart was loud, sharp and metallic, with a slight roughness prolonged in the direction of the arch of the aorta. Some dullness upon percussion over region of lungs. No physical signs of either tuberculosis or pneumonia, or of pleurisy were detected. The congestion of the lungs was referred to mitral regurgitation. The veins of the neck (external jugulars) gave a distinct venous pulse.

The liver was enlarged, and tender to the touch. Slight effusion into the abdominal cavity and œdema of face and extremities, especially marked in the feet and ankles. Complexion sallow, wax-like, with slightly jaundiced hue. The yellow jaundiced hue was especially distinct in the eyes. Urine scanty, high colored, high specific gravity, and loaded with biliary acids. The urine contained no albumen or urinary casts.

Bowels irregular, most generally constipated. Appetite poor; tongue coated with whitish colored fur. Pulse feeble, 80 per minute; respiration 22; temperature under axilla in the morning 99° F. Sp. gr. of urine 1023.

The diagnosis established by this examination was

Enlargement and Dilatation of Heart.

Regurgitation of Blood from Auriculo-Ventricular openings.

Roughness in the Aorta, beyond the Semilunar Valves.

Congestion of the Lungs and Venous Pulse, in consequence of Regurgitation of Blood through both Left and Right Auriculo-Ventricular openings.

Absence of Active Inflammation or Tubercles from Lungs.

Cirrhosis of the Liver in the early stage in which the organ is increased in size.

The patient was treated with small doses of Calomel and Sulphate of Quinia, with occasional saline purgatives, with no perceptible benefit. The heart trouble increased, the spitting of blood became quite common, and the œdema of the extremities and dropsical effusion steadily increased. Tincture of Wild Jessamine (*Gelsemium Sempervirens*) was also effectually tried, as well as Tincture of *Digitalis*, but without any perceptible beneficial effect, and in fact the latter remedy appeared to do harm rather than good, by its depressing effects upon the action of the heart, and its debilitating effects upon the nervous system.

Nitro-Muriatic Acid administered internally, and also in the form of foot-bath, appeared to afford mere relief.

The failure of strength appeared to be quite gradual, and the patient finally became much swollen, the effusion in the abdominal cavity increased, the venous congestion became more marked, with distinct pulsations of the jugular veins and blue lips; the difficulty of respiration became so great and the action of the heart so irregular, that the patient could not rest at night and was compelled to sit up in bed. The forces failed progressively and he died on the 15th of June. The following is a tabular statement of the more important symptoms:

DAY OF MONTH.	HOUR OF DAY.	PULSE.	RESPIRATION.	Temperature of Axilla.	STATE OF INTELLECT, TONGUE, BOWELS, APPETITE AND COMPLEXION.	CHARACTER OF URINE.	REMARKS UPON GENERAL SYMPTOMS.
April 69	A. M.	92	22	99°	Intellect clear; bowels constipated; no appetite; dark and jaundiced complexion.	Scanty, high color. Sp. gr. 1025.	Patient complained of great soreness and tenderness in abdomen, especially in region of liver.
..	7 9 A. M.	92	22	99°	Condition same.	Same character. Sp. g. 1025.	Still complains of soreness; vomiting, no appetite, some fever in the evening.
..	8 9 A. M.	98	26	100°	White coating on tongue; action on bowels.	Scant, high color. Sp. gr. 1025.	Patient says that he feels better, with less abdominal pain than yesterday.
..	9 9 A. M.	88	22	99°	General symptoms same; feels better.	Sp. gr. 1025.	A little more comfortable.
..	10 9 A. M.	86	22	98° .5	Appetite better. Tongue coated.	Amount of urino f. oz. xv. Sp. gr. 1025.	Feels a great deal better with almost total absence of pain in abdomen and epigastric regions.
..	11 9 A. M.	86	22	99°	Improving.	F. oz. xxvii. Sp. gr. 1015.	Continues the same. Purgatives administered.
..	12 9 A. M.	87	22	99°	Bowels constipated.	F. oz. xxx. Sp. gr. 1015.	Bowels opened by Comp. Cathartic Pills.
..	13 9 A. M.	87	22	99°	Bowels opened.	F. oz. xxx. Sp. gr. 1015.	Not so well as yesterday. Breathing oppressed.
..	14 9 A. M.	88	21	99°	Same condition.	F. oz. xxvii. Sp. gr. 1015.	Has been spitting blood for several days. At times great oppression in breathing.
June	8 9 A. M.			100° .5	Jaundice; constipation of bowels. Tongue coated.	F. oz. xvi. Sp. gr. 1030.	Nausea and spitting of blood; soreness over region of liver. Ascites. Anus urea of excretions greatly increased. Cannot lie down in bed. Great oppression of breathing.
..	9 9 A. M.	110	26	99°	Bowels constipated. Jaundice. White of eyes yellow.	Only f. oz. iv collected; high colored and loaded with bile.	Spits blood. Great congestion of veins of neck. Purple lips and fingers. Great oppression in respiration. Exhausted and feeble. Loud, distinct bellows sound taking the place of the first sound of the heart. Rongness in second sound.
..	10 9 A. M.	112	26	100° .5	Two small stools.	Urine high colored, scanty and loaded with bile. No albumen or casts.	
..	11 9 A. M.	110	20	100° .5	Tongue coated; patient feeble and depressed; pulse weak and thready.	Urine scant, high colored and loaded with bile.	Great exhaustion and dyspnoea.

The forces progressively failed, although the patient was able to converse when propped up in bed, almost up to the last moment of life, and died suddenly at five A. M., June 15th.

The *Post Mortem Examination* was performed six hours after death.

Exterior.—Surface of a yellow jaundiced hue and with dark mottling of blood in the dependent portions. Abdomen and lower extremities considerably swollen from serous effusion.

When the thorax was opened, the lungs did not collapse to any marked extent. The lungs were greatly congested with blood. The marks of the hæmorrhages were visible in various portions of the lungs. The effusions of blood had transformed the pulmonary tissue into a dark, liver-like, hard substance.

The lungs contained no tubercles, were not softened, and gave no evidence of pulmonary or pleuritic inflammation.

Heart.—The pericardium was adherent to the sternum upon the anterior aspect.

The heart as it lay in its natural position, presented an enormous size, and was distended in all its cavities with black fluid blood.

The heart contained at least one pint of black fluid blood, and it appeared as if the patient had died from the want of power in the walls of the heart to contract upon the blood distending its cavities.

The left auricle and ventricle were enormously dilated; the right auricle and ventricle were also dilated, but not to so great an extent. There was an appearance of partial fatty degeneration in some portions of the heart, and the muscular structures generally of the heart were softer than normal.

The auriculo-ventricular, and aortic and pulmonary valves, were not thickened nor altered in structure, with the exception of some insufficiency of the mitral valve. The auriculo-ventricular openings, however, were so much altered, in being greatly increased in size, that the valves were insufficient.

The length of the heart after being placed in alcohol, and after considerable contraction, was six and a half inches, the breadth five inches, and the circumference eleven and a half inches.

The walls of the aorta and pulmonary artery, beyond the semi-lunar valves, were roughened by calcareous and osseous deposits. These deposits accounted for the rough sound succeeding or rather flowing from the first sound.

Liver, cirrhotic enlarged, with some fatty degeneration. Surface of liver presented a yellowish bronzed mottled color.

Microscopical examination, revealed increase of fibrous tissue, and oil globules, together with numerous fragments of hæmatin. The masses of hæmatin scattered through the textures of the liver, gave the dark mottled bronzed appearance, and were most probably deposited during the previous attacks of malarial fever.

Kidneys, congested, but normal in structure.

In the preceding case, the dilatation of the heart appeared to have been due in a manner to the same causes which induced softening and fatty degeneration of the muscular fibres of this organ and of the cells of the liver.

In the following case the symptoms of heart disease, although severe, have been relieved partially or mitigated by treatment.

CASE XVIII.—Daniel Dunn, aged 40 years; height five feet six inches; weight 176 lbs, in health; large well developed chest and limbs, large head and intelligent countenance; dark hair, dark blue eyes and dark complexion; native of Ireland; occupation fireman on steamship. Has no hereditary tendencies, and has always led an active life; served in the Southern army during the recent war, and was wounded five times; left leg fractured by Minie ball; flesh wound of posterior portion of upper third of thigh, flesh wound of right hip, another wound on the instep, and still another on the anterior part of the thigh, two inches below Poupart's ligament. Had repeated attacks of intermittent fever, during 1857, '58, and '59, and was affected with sun-stroke on the 4th of July, 1863.

During the summer of 1868, suffered with pain in the region of his heart, attended with anasarca, pain in the head, loss of muscular power, and difficulty of breathing. Admitted into Charity Hospital, October 19th, 1868. At the time of his admission was suffering with anasarca, cephalalgia, muscular debility, and irregular and imperfect action of the heart.

The treatment consisted of tonics, nutrition, diet, and the free use of diuretics. Under this treatment his general condition improved.

At the time this patient came under my treatment in March, 1869, his complexion was sallow, anæmic, and of a yellow, wax-like hue. Temperature normal; pulse 76; respiration 20. Lower extremities œdematous. Some œdema about face and upper extremities. Urinary secretion abundant. Patient complains of pain in his head, and of weakness upon any unusual exertion. Action of heart abnormal, a murmur being heard with the first sound, having its maximum intensity at the position of cardiac impulse. The anasarca has been

greatly reduced by the persistent use of diuretics and especially by the cream of tartar and Juniper berry infusion and mixture. Tincture of bark, and preparations of iron, and especially the tincture of the sesquichloride, appear to have been most beneficial in maintaining the strength of the patient. The following observations give a correct view of some of the leading symptoms in this case. April 7th, 9 A. M., respiration 20; temperature of axilla 98°; tongue clean, bowels regular, complexion sallow, anæmic, urine abundant œdema of extremities and of face; spirits good, assists in nursing the patients. April 8th, 9 A. M., pulse 86; respiration 22; temperature of axilla 98°5, sp. gr. of urine 1020. April 9th, pulse 92, respiration 21, temperature of axilla 99°5; urine abundant, one hundred and forty ounces (140 ozs.) being passed during the last twenty-four hours; sp. gr. 1010. The urine was carefully tested upon this occasion, as it had been upon others, for grape sugar and albumen, but no traces of these substances were detected. April 10th, 9 A. M., pulse 9; respiration 21; temperature of axilla 99°; urine excreted during twenty-four hours 100 f. ozs., sp. gr. 1010; no grape sugar nor albumen. April 11th, 9 A. M.; pulse 88; respiration 22; temperature of axilla 98°5; amount of urine 100 f. ozs.; sp. gr. 1010. April 12th, 9 A. M.; pulse 88; respiration 22; temperature of axilla 98°5; amount of urine 100 f. ozs.; sp. gr. 1010. April 13th, 9 A. M.; pulse 88; respiration 20; temperature of axilla 98°5; amount of urine 100 f. ozs.; sp. gr. 1010. April 14th; respiration 20; temperature of axilla 98°5; amount of urine 100 f. ozs.; sp. gr. 1010.

At the time of the entrance of this patient into the hospital, the anasarca was very great and troublesome, but it yielded and was held in abeyance by the action of diuretics.

Neither albumen nor grape sugar were detected in the urine.

The dropsy in this case appeared to be the result of the cardiac disease, and the anæmic state of the blood.

CASE XIX.—*Dilatation of Heart; General Anasarca; Death.*

Hannah Clark, colored woman; age 40. Entered ward 34, bed 517, Charity Hospital, September 19th, 1869. Patient lies on her back utterly prostrated, with apparent complete muscular and nervous exhaustion. Universal anasarca; abdomen, and extremities, and head swollen from dropsical effusion. Action of heart very feeble; impulse of heart can scarcely be felt. Great dullness upon percussion over region of heart; and the area of dullness at least four times as great as that usual in the healthy thorax. Dullness upon percussion over both lungs; dullness most marked over the lower dependent portions of lungs. The dullness is so great over the lower portions of the thorax as to indicate pleuritic effusion. Upon auscultation, the sounds of the heart are indistinct and feeble. Diagnosis: dilatation of both sides of the heart, and general dropsy as the result of cardiac disease.

The patient is evidently in extremis. Oppression of breathing so great that the patient is unable to articulate with any force, and it is difficult to understand her broken sentences. Patient died September 21st, two days after her admission into the ward.

Autopsy twelve hours after Death.

Exterior.—Trunk abdomen and extremities greatly swollen. Areola tissue everywhere infiltrated with serous fluid. On opening the cavity of the thorax, a large amount of serous fluid filled the pleura, and occupied a large portion of the space usually filled by the lungs. The right lung was compressed into a mass not larger than a man's hand, and presented a hepatized appearance, and apparently had lost the power of dilatation. The left lung was also compressed into a comparatively small space, but was readily dilatable when removed from the pleural cavity. The heart was enormously enlarged, measuring seven and three-tenths inches in length, and fifteen and a half inches in circumference, as it lay in the thorax with the auricles and ventricles immensely distended with black blood. The blood was partially coagulated, and the coagula were easily divisible into two portions, the one ordinary blood and formed post-mortem, and the other light yellow fibrinous, and formed ante-mortem. The fibrinous clots were to a great extent, stripped of colored corpuscles, and adhered closely to the valves and chordæ tendinæ. The walls of the heart were thin and not hypertrophied.

The edges of the mitral valve were thickened and from the deposits of calcareous or osseous matter; or rather from the deposit of fibrin in some preceding attack of rheumatic endocarditis, which had been gradually transformed into an inorganic hard mass.

Spleen, liver and kidneys healthy in appearance. Intestinal canal also normal in appearance. Some small loose fibrinous clots floated in the serous fluid of the pleura and peritoneum; and a small patch of fibrinous exudation was observed on the surface of the descending colon, in the lumbar region.

The origin of the cardiac disease and the supervening dropsy appears to have been the deposit of fibrinous matter upon the auriculo-ventricular valves in some former attack of rheumatism, thus causing auriculo-ventricular regurgitation.

CASE XX.—Dilatation of Cavities of Heart ; Universal Dropsy ; Death.

John Wilson ; negro man ; aged 57 ; stout, well-built man ; native of Virginia. Admitted to Charity Hospital, ward No. 32, September 2d, 1868.

Patient says that he has always enjoyed good health up to December, 1868, when he was seized suddenly with palpitation of heart, and great difficulty of breathing. Has been admitted several times into the Charity Hospital, since this date, suffering with palpitation of the heart and dyspnoea. As soon as some slight improvement took place, under rest and diuretics and tonics, the patient would ask to be discharged.

At the present time, September 2d, the patient suffers with great dyspnoea, pain in the region of the heart, dry hacking cough, general anasarca, which however is less in the right arm and hand.

The apex beat of the heart is just below the nipple ; space of percussion dullness over region of the heart greatly enlarged. First sound of heart prolonged and attended with a distinct regurgitant murmur. Second sound normal. Diagnosis—Dilatation of both sides of the heart, with auriculo-ventricular regurgitation. General dropsy, and dyspnoea consequent upon heart disease. No albumen or bile was found in the urine. Diuretics and tonics were administered, with only temporary benefit, however, as the anasarca increased as well as the oppression of breathing ; the lower extremities became immensely distended ; the patient was unable to lie down and finally died twelve days after his admission, on the 14th of September.

The post mortem examination revealed a similar condition to that described in the preceding case No. XIX. Universal anasarca—liver and kidneys and intestinal canal healthy. Heart greatly dilated and distended with black blood. The dimensions of the organ were fully equal to those given in the preceding case. The mitral valve was thickened with osseous deposit.

The auricles and ventricles were greatly dilated, and the auricular ventricular opening so much enlarged as to render the valves insufficient, and to allow regurgitation of the blood, during the contraction of the ventricles.

The following case illustrates the fact that we may have decided evidence of insufficiency of the aortic valves, without dropsical effusion.

CASE XXI.—Articular Rheumatism, with derangement of Second Sound of Heart.

Wm. Rogers ; seaman ; aged 21 years ; stout, well formed man ; admitted into Charity Hospital, ward No. 11, bed 154, January 20th, 1870, suffering with chronic rheumatism, affecting chiefly the upper extremities. Patient states that seven years previous to the present attack, he was confined to his bed six or eight weeks by rheumatism, which affected chiefly the upper extremities. The attack was brought on by exposure. Two years afterwards he had a second attack which was confined to the parts and joints of the lower extremities ; and at this time he suffered severe pain in the left side, which his attending physician pronounced to be due to pleuritis, with palpitation of the heart. The present attack came on in November, 1869, with pain in the wrists, joints and hands, and finally affected the shoulder joints. On percussion the heart appears to be hypertrophied ; and upon auscultation the second sound is entirely altered, being converted into a prolonged, blowing sound, heard loudest at the base of the heart over the aortic and pulmonary valves, and is transmitted up as high as the point of bifurcation of the common carotid artery. The sound is loud and distinct. The patient was placed on a mixture of Wine of Colchicum, and Solution of Iodide of Potassium, so compounded that eight drops of the Wine of Colchicum and five grains of the Iodide of Potassium should be administered three times a day. Iodine was also used locally and the parts covered with cotton and oil silk. Under this treatment the patient steadily improved, and was discharged from the ward on the 26th of February, 1870.

It is worthy of note in this connection, that the most extensive

aneurism may exist, without the production of any dropsical effusion. If the aneurism presses upon one or more of the large veins, it may, by its mere mechanical pressure, cause such a congestion as to lead to œdema of those parts from whence the obstructed vein should remove the blood.

It is also worthy of note that in the cases of aneurism, which I have examined in the Charity Hospital, there was most generally more or less fatty degeneration of the arterial coats, in various portions of the circulatory system.

CASE XXII. *Aneurism of Internal Iliac.*

Thus in the case of the large aneurism of the internal iliac, which filled the entire pelvic fossa on the left side, measuring eleven inches in the longest diameter, and six-and-a-half inches in the short diameter; the heart is partially degenerated into fat and the entire aorta is dilated, with thickened, degenerated, roughened walls.

CASE XXIII.—*Aneurism of Descending Aorta, Absence of Œdema—Great Emaciation—Death.*

The body of this man, aged sixty, after death, presented no marks of dropsical effusion, and was greatly emaciated. The descending aorta was dilated into a large aneurism having an hour-glass contraction in the middle. The long diameter of the aneurismal tumor was six and one-half inches and the transverse diameter four inches. The vertebral column had been eroded and absorbed upon its anterior surface, by the pressure of the tumor, and adhesions had formed between the walls of the aneurism and the diaphragm. No dropsical effusion was discovered in the areolar tissue and serous cavities after death, and none had been observed during his residence during the past three months.

CASE XXIV.—*Aneurism of Ascending Aorta; sudden rupture of Aneurismal Sack within the Pericardium; Hæmorrhage—Death. Absence of dropsical effusion.*

A young woman entered the Charity Hospital, complaining of pain in the region of the heart; the general health appeared to

be good—complexion clear and limbs round and firm. This patient died suddenly a short time after entering the hospital. When the cavity of the thorax was opened, the pericardium was found to be filled with blood; the amount of which was about one pint. No blood was effused exterior to the pericardium, and there were no marks of dropsical effusion in any of the serous cavities, nor of œdema in any of the extremities. Death in this case appeared to have resulted from the sudden compression of the heart, by the blood effused into the pericardium, rather than from the amount of blood lost. As is well known that portion of the aorta which arises from the left ventricle, behind the sternum, opposite the third intercostal space, and passes from left to right, the ascending portion of the arch, coming to the right of the sternum, between the cartilages of the second and third ribs, is within the pericardial sac. The ascending aorta together with that portion of the arch from which the carotid, innominate and subclavian arteries are given off, was enlarged or dilated to more than twice the normal diameter, and a diverticulum or pouch from the aneurismal dilatation was sent off, downwards from the arch of the aorta, and rested against the auricle. The rupture took place at the most dependent portion of this division or diverticulum from the dilated aorta, just where it rested upon the auricle.

In the case of aneurism of the femoral artery operated on by Dr. Warren Stone Jr., and which terminated fatally from hæmorrhage and pyæmia, I found the artery for some distance above the seat of the aneurism in a state of fatty degeneration. We can see in such a case, the cause of failure in the operation of ligation of the artery for aneurism. The ligatures cut through the softened and degenerated arterial coats, and hæmorrhage occurred; compression had been previously tried without success. It is probable that in such cases, the results of compression would be rendered unsatisfactory from the degeneration of the coats of the artery.

In the three following cases, no dropsy and no tendency to it was at any time observed.

CASE XXV.—*Aneurism of Arch of Aorta, involving also the ascending Aorta; absence of Dropsical Swelling; Death.*

Michael McCann; male; ago 35 years; height 5 feet 6 inches; weight 120 pounds; dark brown hair, grey eyes; dark florid complexion; sharp features; native of Ireland; has been twenty years in New Orleans; occupation, day laborer; had syphilis ten years ago, which the patient says affected him for several months; had yellow fever fifteen years ago; and chills and fever in the summer months of 1868.

Admitted into the Charity Hospital November 14, 1868, suffering with pain in right arm, extending up along the side of the neck and head, and attended with difficulty of deglutition. Patient says that he suffered with pain in the right elbow joint, in August, 1868, which lasted three months, and then shifted to the right shoulder joint, and from thence passed to the head, with which he still suffers. Before coming to the hospital, was treated with local applications and liniments, without any perceptible benefit. For four or five weeks after entering the hospital, the patient could not lie down by day nor by night, on account of the great oppression of breathing, and a most troublesome cough, and sensation of choking in the recumbent posture. He lost flesh, his weight being reduced from 155 in health to 120 pounds. The treatment has consisted chiefly of Anodyne, subcutaneous injections of Morphia and Atropia, at night; Iodide of Potassium as an alternative, and Tincture of Sesqui-chloride of Iron as a tonic. The pains are relieved by the subcutaneous injection of Morphia and Atropia, and the patient is unable to sleep without them.

April 3d, 1869: condition of the patient much the same as when he entered the hospital. Constant cough, and constriction about the throat. The patient coughs and clears his throat in a peculiar manner, as if a tumor was pressing upon the bronchial tubes. General appearance favorable; patient is not emaciated or swollen. Skin dry and warm, tongue reddish upon surface. Suffers with pain in head and neck and upper part of right side of thorax. Pulse strong, but differs in character and intensity in the two arms; 70 per minute; apex beat of heart, visible one inch below its natural position. Pulsation very marked and forcible over the upper portion of the sternum, producing a loud impulse against the walls of the chest, over the intercostals of the first and second ribs, immediately to the right of the sternum, where the sounds are loudest. There is also flatness on percussion over the intra-clavicular region, on right side of chest, where the sounds of the heart are heard with the greatest intensity. Temperature of axilla variable, ranging from 98°5 to 100°5 F. The respiration varies from 18 to 22, and is natural with the exception of some prolongation of expiration and inspiration and a peculiar sound as if the bronchial tube was pressed by a tumor. The constant cough, and peculiar clearing of the throat, in like manner indicates the presence of a tumor pressing upon the wind pipe. There is also difficulty and pain in deglutition.

These symptoms led to the conclusion, that this patient was suffering with *an aneurism of the aorta, involving the ascending portion, the arch, and probably also the upper portion of the descending aorta.*

April 6th.—The heart is beating tumultuously; the apex sound being much more distinct than the sound made at the intercostals of the first and second ribs. The pulse in the right arm is weaker than in the left. When the patient raises the right arm and attempts to grasp the bed-post as high up as the arm can reach, standing with his back to the bed, and throwing the hand a little backwards, as well as upwards, he experiences numbness, also a tendency to faint.

May 6th.—There appears to have been a gradual change in the position of the supposed aneurismal tumor in the chest; careful and prolonged examination revealing a more tumultuous and powerful impulse against the supra-clavicular region of the left side. The subclavian artery of the left side appears to have suffered dilatation, as it is of great size, and the column of blood is thrown with great power and a marked thrill through its dilated walls, with every impulse of the left ventricle. On the other hand it is remarkable, that the carotid artery on this the left side, can scarcely be felt, being exceedingly small in outline and feeble in beat. In fact it is almost impossible to feel the beat of the carotid, without the most persistent and careful examination. As the carotid and subclavian are given off separately from the arch of the aorta, on the left side, we are forced to one of three conclusions: either the carotid on the left side has been partially occluded, by fibrinous matter deposited along the walls of the aneurism, or the tumor presses upon it in some manner, so as to diminish its column of blood; or the aneurism does not extend much beyond the junction of the left subclavian. The third supposition is excluded by the previous history of the case. It would appear that this tumor was slowly shifting its position to the left of the vertebral column. It is well known, that the soft parts become incorporated with the aneurismal tumor, and even the vertebrae are absorbed by the constant pressure, as was seen in the case of the aneurism of the descending aorta, previously described. The diagnosis of aneurism of the arch of the aorta, appears by these signs, and especially by the movable nature of the tumor, to be still further confirmed.

May 3rd.—Under nutritious diet, and moderate purgation, and the persistent use of Iodide of Potassium, alternating with the Tincture of the Sesqui-chloride of iron, the condition of this patient has somewhat improved; at least he has certainly "held his own."

Patient does not suffer any pain of consequence—heart is not so forcible in its action—the left radial pulse is still stronger than the right, whilst the beat of the right carotid is much

more powerful than that of the left, which can scarcely be felt. Dullness upon percussion, with bronchophony extending from the left border of the sternum, to the middle of right clavicle thence downwards, to midway between clavicle and nipple, thence inwards to left border of sternum, thence upwards, to starting point, making an area, of marked dullness and bronchophony of about four inches in diameter.

June 9th.—Patient is suffering more than usual pain, in head; and neck and supra-clavicular spaces have a full swollen appearance. The patient also suffers pain in the middle and upper portions of the thorax, in the region of the aneurismal tumor; he complains of a smothering sensation in the throat.

June 21st.—Condition of the patient good, complexion that of health; appetite good. Impulse of heart quick and powerful, two and a half inches below left nipple. The apex of the heart acts as if it was thrust directly forwards against the walls of the thorax, making a defined beat. The beat of the heart gives the impression of a tumor above, which forces the heart downwards, or rather from which the organ recoils.

Left supra-clavicular region prominent a powerful pulsation synchronous with the contraction of ventricles of heart, being evident to the eye, and also to the touch, above the middle of the clavicle. Left carotid artery can scarcely be felt in its beat. The first sound of the heart is heard at the apex, mingling with the powerful blow against the walls of the thorax; the second sound is not distinct, and there appears to be a third sound, which may be due to the pulsation of the aneurism, together with some clicking, thrilling rushing sounds of low intensity. Marked dullness in both supra-clavicular regions along the borders of the sternum, and over the sternum, for two inches below the nipple. Distinct metallic click or thrill over upper portion of sternum.

The air is drawn in and expelled from the bronchial tubes, with difficulty, as if the wind-pipe was compressed. Difficulty of deglutition continues, solid food appears to be arrested about midway in the œsophagus, or rather at the upper third of the sternum.

This patient continued under my treatment until the first of November, 1869, when a change occurred in the wards, and he passed into the hands of Professor Bemiss. Up to this time, the patient had maintained apparently a stationary position; the most marked symptom for the worse was the stridulous breathing and sense of suffocation.

The patient continued much in the same condition, with a gradual aggravation of the disturbance of respiration, and finally died on the 10th of April, 1870. We are informed by Professor Bemiss that up to the time of death there was no dropsical effusion.

A post-mortem examination was held by Dr. Bemiss, and he kindly presented the heart and aneurismal tumor to my pathological collection.

The heart was enlarged, and dilated, and fatty degenerated and flabby. All the cavities were dilated, but the dilatation was greatest in the left ventricle. The arch of the aorta was dilated into a large aneurismal tumor, thirteen inches in circumference, and contained a large laminated fibrinous mass, eleven and a half inches in circumference. Portions of this fibrinous clot were evidently of recent formation, and contained coagulated blood. The ascending aorta was greatly dilated, the dilatation commencing at the junction of the aorta with the heart, and gradually increased upwards to the aneurismal tumor. The diameter of the ascending aorta, just before it passes out of the pericardium, was three inches. The pericardium was thickened. The semilunar valves of the aorta, as well as those of the pulmonary artery, and the tricuspid and mitral valves, appeared to be normal in structure.

The result of the post mortem confirmed the diagnosis, twelve months before death, viz: Aneurism of arch of aorta.

The wind pipe was compressed into a flattened ribbon-like tube, and the mucous membrane presented a thickened and highly congested appearance. The aneurismal tumor pressed upon the lower portion of the wind pipe and upon the bifurcation of the bronchial tubes.

CASE XXVI.—*Aneurism of Arch of Aorta; great oppression of respiration; absence of Dropsical Swelling; Death.*

William Willoughby; aged 36; height 5 feet 3 inches; weight 147 in health; anburn hair, gray eyes; fair complexion; native of Canada; seaman by occupation. At eleven years of age, suffered with chills and fever, which continued seven years; had yellow fever in 1858; had two falls on ship-board, when intoxicated; these falls were from considerable height, but no ill effects were noticed. About five months before entering the hospital, was in the habit of using his shoulders in pressing up heavy weights and after straining felt pains in the region of the heart; about a month afterwards began to suffer with pains across the thorax, in right arm, and on side of neck and face.

Admitted to Charity Hospital February 3d, 1869, suffering with pains in the thorax, right arm, and in side of neck and face, and after remaining in ward 21 for one month, a tumor or swelling with a livid surface appeared, extending from four to six inches across the thorax in a line with the second rib; this remained for several days, and then slowly subsided. At the time of his admission the patient weighed only 125 pounds. He suffered with great oppression and difficulty of breathing, and was unable to sleep at night in the recumbent pos-

ture. The treatment consisted of subcutaneous injections of Sulphate of Morphia and Atropia. Rest at night could be procured only by these injections. The effects of the Atropia were almost immediately manifest, in the rapid dilatation of the pupils of both eyes.

April 1st.—The patient came under my treatment and observation at this time. Says that he does not suffer so much pain. General appearance that of health, with clear florid complexion; no œdema or dropsical effusion in any part of the body; his countenance, however, wears an anxious, and at times distressed and oppressed look; weight 125 pounds, appetite fair; bowels regular; skin soft and natural; tongue clean; pulse 88; sniffs with cough and oppression in breathing. Apex of heart displaced, two inches below, and to the left of the nipple; action of heart strong; pulsations very marked over the sternum, and visible at apex. Great difficulty in the deglutition of solid food, from the pressure of the aneurismal tumor upon the œsophagus; with a sensation as if the passage of the food was interrupted about the centre of the sternum. Respiration 19 per minute, and embarrassed with cough when lying upon back. The cough and clearing of the throat is peculiar in its character, giving the impression of great constriction of the wind pipe and the bronchial tubes, and the sounds are heard as if they proceeded directly from the upper third of the sternum. Pulse feebler in the right than in the left arm.

Diagnosis.—*Aneurism of Arch of Aorta.*

April 2th.—Condition same, with in reased cough.

May 12th.—Complains of pain in side of neck and head, and over the sternum, difficulty in respiration very marked and amounting to decided dyspœa, especially when attempting to assume the erect position. The least particle of phlegm in the trachea, gives much trouble and distress until removed. Clears his throat in a peculiar manner as if the bronchial tubes were compressed. Great difficulty in the deglutition of food.

Impulse not so marked over sternum, as if the tumor was embedding itself in the pesterior walls of the thorax, and against the vertebral column.

May 25th.—Pain not so great, but general appearance less favorable. Hypodermic injection of Morphia and Atropia administered last evening, and the patient is this morning in a nervous state; pulse 96, temperature of axilla 101°75; pulse in right arm very indistinct.

May 31st.—Bronchial rales, over both lungs; rales and vocal resonance more marked over right lung; these physical signs appeared to be clearly referable to the pressure of the aneurismal tumor upon the trachea and bronchial tubes.

The sternum appears to be more prominent upon the right side; apex of heart still further displaced to left of nipple; sounds at this point apparently normal, though with less force than before; and the sound heard over the base; viz., the second.

The bronchial rales are unattended with much expectoration, and it appears, as if the mucus is with great difficulty expectorated, through the compressed bronchial tubes.

June 10th.—Symptoms greatly aggravated; great difficulty of deglutition: great oppression in breathing, with prolonged wheezing inspiration and expiration, as if the air passed through the compressed bronchial tubes and trachea with great difficulty. The patient although oppressed, distressed and weak, still moves about the ward and hospital.

When the ear is placed against the walls of the chest, the sounds of the voice and of respiration appear to issue directly out over the space of at least five inches in diameter, as if the sonorous vibrations were transmitted directly through a tumor. Percussion revealed dullness over the sternum, and over the greater portion of the clavicular and infra-clavicular spaces. The form of the tumor and its position may be made out with great clearness, by combining percussion and auscultation. The diagnosis is especially aided by causing the patient to speak when the ear is applied to different portions of the thorax. The position of the tumor may be made out by auscultation and percussion on the back as well as upon the front of the chest.

When the patient coughs, the sounds are transmitted, almost like peals of distant thunder, to the ear, applied over the walls of the chest, just above the tumor. The loud bronchial rales, heard most distinctly, over all the upper portion of the lungs, appeared to be due solely to the pressure exerted by the tumor.

The patient is evidently near his end, and at this examination the opinion was expressed that his life would terminate suddenly from suffocation in the course of a few days.

During the night of the 13th of June, the patient was seized with great difficulty of respiration, became black in the face, struggled violently for breath, and died suddenly from the effects of the compression of the bronchial tubes or arrest of respiration.

This patient had friends, who carried off his body, before a post-mortem examination could be made. This was greatly to be regretted.

It was clearly shown in the preceding cases also, that the most extensive aneurisms are not necessarily attended with dropsy.

CASE XXVII.—*Aneurism of Ascending Aorta and Arch of Aorta; Dilatation of left Ventricle: Sudden Death; Absence of Dropsical Effusion or Œdema.*

Mooney, age 56, native of Ireland, tall, well-formed man, entered the Charity Hospital, ward 16, bed 150, January 16th, 1870. Has been in this hospital several times before.

At the time of my examination, January 18th, the patient presented well developed limbs. Suffered with great oppression in breathing, loss of rest, and almost complete prostration after making any effort. I attempted to examine this patient, but he suddenly became greatly oppressed, his lips and hands turned blue, and the patient appeared to be dying.

The results of this imperfect examination, was, dullness upon percussion, over and around the space normally occupied by the heart, for an area, the diameter of which was at least seven inches transversely, and eight inches laterally; the apex beat of the heart was at least two inches below its normal position; great oppression in breathing, inspiration and expiration prolonged, with a wheezing sound, as if the air was passing through a greatly constricted trachea. It was necessary to prop the patient up in the sitting posture before an open window. The symptoms of enlargement of the heart and aneurism of the aorta were well marked. This patient died suddenly next morning.

The post-mortem was performed eight hours after death.

The exterior was full and without marks of œdema.

When the cavity of the chest was opened, the heart was found to be enlarged, with all the cavities distended to their utmost capacity, with dark fluid blood. The ascending aorta was greatly dilated, the dilatation commencing at the heart, and increasing rapidly upwards, and just after emerging from the pericardium, the arch of the aorta expanded into a large aneurismal sack, six inches in diameter. The arteries given off from the arch of the aorta were greatly dilated, and the innominate artery, was, at its junction with the aneurismal tumor, as large as a healthy aorta. The pericardium was adherent to the heart, this adhesion appeared to have been of long standing, and was probably coincident with the changes in the semilunar valves. The heart measured

in its longest diameter, seven inches, and in its short diameter six inches. The semilunar valves of the aorta were thickened, adherent at certain points and insufficient. The aortic regurgitation accounts for the great dilatation of the left ventricle. As far as we could learn, this patient had suffered with deranged action of the heart and oppression of breathing for more than six months, and he referred the first distressing symptoms, to the lifting of a great weight.

We shall consider in the next place, briefly the treatment of cardiac dropsy.

Treatment of Cardiac Dropsy.

When dropsy depends upon serious organic lesions of the heart and large blood-vessels, treatment should be regarded as chiefly palliative; the physician may relieve certain symptoms of the most grave and distressing character, and relieve intense suffering and thus prolong life, for a considerable length of time; but the cure of the disease, is in many cases out of the question, as it is impossible either by drugs, diet or mechanical means, to restore the enlarged, dilated, degenerated heart and insufficient valves, to the normal state.

Cardiac dropsy supervenes in most cases, after the forces have been depressed, and the blood rendered watery, venesection therefore as well as drastic purgatives should be used with great caution. Local blood-letting (cut cups over the region of the heart and kidneys) may accomplish good results by relieving congestion and promoting free diuresis.

It is well known that diminished fullness of the vascular system promotes the absorption of serous effusions; when therefore obstruction to the circulation of the blood through the heart, co-exists with pulmonary congestion and anasarca, and at the same time, the general vigor is as yet unimpaired, the abstraction of a moderate quantity of blood, affords relief to the over-loaded blood-vessels, and congested lungs, and facilitates the action of hydragogue remedies.

Bitartrate of Potassa, the Compound Jalap Powder, Gamboge and Elaterium, are peculiarly valuable, from their certainty of action as hydragogue purgatives.

From one ounce to one ounce and a half of the bitartrate of potassa, in eight ounces of water, taken in two doses at an interval of two or three hours, forms one of the most effective and safe purgatives.

The Extract of Elaterium may be adminished in doses of from one-sixth to one-half of a grain. Caution, however, must be employed in the use of the Extract of Elaterium, on account of its intense activity, and occasionally depressing effects. A bolus of the following composition has been recommended and employed with success by various physicians: *R. Pulveris Jalapæ, Pulveris Rhei., Pulveris Scammonii, ââ, gr. v; Elaterii, gr. ss; Bitartratis Potassæ; Sulphatis Potassæ, ââ, ʒss; Syrupi Zingiberis; quantum sufficet ut fiat bolus.* It is an observation of long standing, that in the exhibition of remedies, more decided and beneficial effects may be obtained by combining several analogous remedies in small quantities, than by giving a single one in a large dose.

In cardiac, as in other forms of dropsy, the urine is almost always scanty, and the progress of the effusion frequently bears a direct relation to its diminution; the attention therefore should be strongly directed to the secretory function of the kidneys, as affording the most probable channel for the relief of the disease.

Although sometimes uncertain in their action, diuretics, upon the whole prove most effective in the control, moderation and even complete removal of dropsical effusions.

As far as my experience extends, the Bitartrate of Potassa, or Cream of Tartar, is the best diuretic, and I have relieved many cases of dropsy by this remedy alone. When used as a diuretic from half an ounce to one ounce and a half, should be suspended in a pint of water, and the mixture should be taken in wineglassful doses, every two or three hours, so that the whole may be administered during the twenty-four hours. The bottle containing the mixture should be always most carefully agitated, as the cream of tartar is almost insoluble, and falls to the bottom of the vessel upon standing. When the digestion is impaired, or should dyspeptic symptoms be induced by the cream of tartar, we should employ as a vehicle for the salt, an infusion of juniper berries, or

wild carrot seed, and some aromatic, cardamom, fennel or ginger may be added.

It would be foreign to our purpose to enter into any recapitulation of the remarks made at the bedside with reference to the various diuretics, and we shall simply name those of the most undoubted efficiency; as:

Acetate, Nitrate and Citrate of Potassa; Acetate of Ammonia; Iodide and Bromide of Potassium; Nitric Ether; Squills; Digitalis; Veratrum; Colchicum; Tobacco; Decotion of Scoparium and of Chimaphila.

Squill as an active diuretic has enjoyed a high reputation with the profession, and it appears to be peculiarly useful in dropsy of the chest, with scanty, high-colored and uncoagulable urine, which deposits a sediment on standing. It should be used at short intervals and in such doses as to produce nausea, and the patient should be subsequently kept just within the nauseating point. In cases which demand the mercurial influence, the squill may be advantageously combined with calomel. Small doses of Blue Pill, occasionally at bedtime, will frequently promote the action of diuretics.

Diaphoretics are much less efficient than diuretics and cathartics; beneficial results, however, may be obtained by the free diuresis excited by the vapor or hot air bath.

When drugs fail to control the dropsy, mechanical means become necessary for controlling its influence; such as tapping, puncture with a sharp lancet and acupuncture. Owing to the danger of the supervention of erysipelas, incisions should be made with great caution, and whenever practicable, puncturing with the needle should be preferred, the point of the needle should merely penetrate the true skin, the punctures should vary in number from twenty to fifty or sixty, according to the part or the extent of the effusion, and they should be at least half an inch asunder.

When the blood is anæmic, Iron and the bitter tonics, and nutritious diet should be employed.

Experience has established the fact, that no advantage arises from the denial of water to dropsical patients.

In some cases attended with great debility, spirituous liquors, in moderate amount, are indicated; hard cider and gin, are amongst the best forms of alcoholic stimulants.

Of course, the results of treatment will depend, in a great measure, upon the extent and character of the organic lesions.

Hepatic Dropsy, arising from some obstruction to the circulation of the blood through the Liver.

The distinguishing character of dropsy, from diseases of the liver or portal vein, as laid down by systematic writers, are :

1st. In uncomplicated portal obstruction, the dropsy commences in the abdomen, and the legs are only affected secondarily and in consequence of the pressure of the ascitic fluid on the inferior vena cava. When the affection of the liver is complicated with heart disease, the ascites may be preceded by dropsy of the legs.

In cardiac disease, on the other hand, anasarca commencing in the feet and gradually proceeding upwards, precedes the ascites; and even when the belly becomes swollen, the swelling of the legs is out of all proportion to the ascites.

2d. No signs of dropsy in the face, arms or upper part of the trunk, are observed in dropsy arising from obstruction of the portal system; whilst in that form of the disease which is dependent upon structural alterations of the kidneys, œdema of the face and arms is a very common symptom even in the early stages.

3d. Dyspnœa, never precedes the hepatic dropsy, although it may accompany the serous effusion when great; from the pressure of the fluid interfering with the action of the diaphragm and abdominal muscles; in cardiac dropsy on the other hand, the dyspnœa *precedes* the ascites, and is distressing out of all proportion to its extent. In cardiac dropsy, from the congestion of the lungs and imperfect aeration and circulation of the blood, there is more or less lividity of the lips, face and extremities, whilst this symptom is not characteristic of uncomplicated portal obstruction.

4th. If there be no concurrent disease of the kidneys, albumen is absent from the urine, except in those cases, in which the

ascites itself, when extensive, may, in consequence of the pressure of the fluid on the renal vein, lead to the appearance of albumen in the urine. The albumen, however, disappears upon the withdrawal of the pressure, as in the operation of paracentesis. The absence of puffiness of the face, or pitting of the upper extremities, and of granular, fibrinous and oil casts from the urine, will still further distinguish hepatic dropsy, from that dependent upon alteration and degeneration of the kidneys.

5th. The ascites occasioned by portal obstruction, is still further distinguished, by enlargement of the spleen, enlargement and tortuosity of the superficial veins of the abdomen, hæmorrhoids, gastro-enteritis and hæmorrhages from the stomach and bowels. Enlargement of the superficial veins of the abdomen, however, is not in all cases a certain indication, as the same appearance is sometimes observed in cardiac dropsy and in renal dropsy, as the result of the pressure of a large quantity of ascitic fluid upon the inferior vena cava; but in such cases, there will be usually also a varicose state of the veins of the legs.

It is important that we should consider briefly those morbid conditions of the liver, which give rise to dropsical effusions, in connection with those diseased states of this organ, which seldom or never gives rise to this symptom.

In waxy, lardaceous or amyloid degeneration, the liver undergoes greater enlargement than from any other disease, excepting, perhaps, cancer; the enlargement being often so great as to fill up a large portion of the abdominal cavity. The enlargement being uniform in every direction, the form of the organ is not essentially altered, the outer surface is smooth, and the lower margin more rounded than natural, regular and free from all indentations. In rare cases, this change may co-exist with cirrhosis, or with syphilitic gummy tumors, and then the organ may present a nodulated surface, and this complication may be attended with ascites.

In like manner when accompanied with waxy degeneration of the kidneys, dropsy may result from the derangement of the excretory function of these organs.

In those cases of waxy deposit of the liver, which have come under the observation of the students of the Medical Department of the University of Louisiana, the statements of pathologists has been verified, that there is but little tendency to obstruction of the portal circulation; and consequently ascites, and enlargement of the subcutaneous veins of the abdominal walls, are not common phenomena in its clinical history. The absence of ascites in waxy liver, has been accounted for by the fact, that the branches of the hepatic artery, and not of the portal vein, are implicated in the disease. In some rare cases of waxy liver, ascites results from the pressure of enlarged waxy lymphatic glands in the fissure of the liver, upon the trunk of the portal vein.

In fatty liver, the enlargement is due to the accumulation of oil, as has been well shown in the post-mortem examinations, and in the specimens of fatty liver mounted in alcohol. In fatty liver, as in the waxy disease, the enlargement is uniform in every direction, and without tumors or nodules upon the surface, and the natural form of the liver is but little altered; there is no ascites or enlargement of the superficial veins of the abdomen, the secretion of bile is not arrested or impeded, and jaundice is not a symptom, and as in waxy liver, throughout the progress of the disease, pain is absent. This degeneration of the liver is often accompanied by similar changes in other organs, and more especially the heart and kidneys. Fatty degeneration of the heart is evidenced by the feeble cardiac impulse, faint cardiac sounds, slow or quick, feeble and irregular radial pulse, attacks of vertigo, syncope or pseudo-apoplexy, and dyspnoea on slight exertion. When fatty degeneration of the liver, is attended by fatty degeneration of the kidney, there will be a tendency to general anasarca; the urine is diminished in quantity, oftentimes turbid, and contains albumen and casts of the tubuli uriniferi, containing oil globules.

In simple hypertrophy of the liver, attended by an increased size of the lobules, and by an increased size or number of the secreting cells, without any alteration of structure, the enlargement is uniform, and rarely great, and is not attended by any prominent symptoms nor by dropsical effusion.

Whilst the enlargement may be very great in hydatid tumor of the liver, ascites, œdema of the lower extremities, enlargement of superficial veins of the abdomen, and hæmorrhoids are not distinguishing characters; and as the hydatid tumor rarely interferes with the functions of the kidneys, those of the urine so common in waxy and fatty enlargements, are absent; in rare cases however, the kidneys also may be the seat of hydatids, and dropsy may arise from this cause, or from the pressure of the hydatid tumors upon the portal trunk; or from the bursting of the cyst, or through the supervention of peritonitis.

Ascites rarely results from mere congestion of the liver, unless this depend on mechanical obstruction of the circulation in the heart and lungs.

In the venous engorgement of the liver resulting from mechanical obstruction of the cardiac circulation from valvular disease of the heart, the primary enlargement of the liver gives place after a time to an opposite condition of contraction, atrophy of the *central portion of the lobules*, being induced by the pressure of the constantly distended veins. The congestion of the liver dependent upon cardiac disease, induces a form of granular liver very different from true cirrhosis, where the atrophy commences at the *circumference of the lobules*.

The diseases of the liver which most commonly give rise to portal obstruction, with ascites, are, according to those pathologists who have had the most extensive opportunities of observation: 1. Cirrhosis and other forms of chronic atrophy of the liver; 2, cancer of the liver; 3, peri-hepatitis; 4, thrombosis, or obstruction of the trunk of the portal vein.

We shall confine our observations to the first and most common cause of portal obstruction and ascites; viz., cirrhosis of the liver.

Cirrhosis of the liver is most common in those countries, where the drinking of alcoholic stimulants prevails, and the disease can almost always be traced to the abuse of strong spirits; and hence the name *gin drinker's liver*.

Most observers have noted in the early stages of true cirrhosis, a temporary congestion and enlargement of the liver, apparently caused by the irritant effects of the alcoholic stimulants.

The lobules of the liver have been described by Malpighi, Kiernan, Müller, Leidy and others, as isolated from each other, and each invested with a layer of areolar or fibrous tissue. In the pig, in which these lobules were first noticed, and in the Polar bear according to Müller, and in the *Octodon Cumingii*, according to Hyrtl, the lobules are invested by fibrous tissue, but in the liver of the human subject, and in that of the vertebrate animals generally, the lobules are not separated from each other by a fibrous partition, and there is no areolar or fibrous tissue or prolongation of Glisson's capsule between them or in their interior. Vogel, Henle, Bowman, and Beale have failed to detect any fibrous tissue in the interlobular fissures of the normal human liver.

In cirrhosis of the liver, on the other hand, there is a remarkable development of fibrous tissue in the parenchyma of the liver; and the individual, secreting segments become prominent or even form isolated lobules. The increase of fibrous tissue in the cirrhused liver, may be manifest to the eye, and especially when slices of the organ are subjected to the action of a stream of water, and gently washed between the fingers. The character of the fibrous tissue may be determined by microscopical examination. Cirrhosis of the liver is of slow development and progress. The whole structure of the liver is not pervaded with fibrous tissue in a few days. It is reasonable to conclude with Dr. Budd, that the remarkable changes in cirrhosis, are mainly the consequence of adhesive inflammation in the areolar tissue about the small twigs of the portal vein, and in the areolar tissue of the portal canals, by which serous fluid and coagulable lymph are poured out.

In this stage the liver may be enlarged. The serous part of the effusion is next absorbed, the lymph contracts, becomes converted into dense fibrous tissue, which divides the lobular substance of the liver into well defined masses, and gives great density and toughness to the organ. Finally, this fibrous tissue compresses the small twigs of the portal vein and the small gall ducts, and thus impeding the escape of the bile and the flow of blood induces great atrophy of the original hepatic tissue, and

causes, by a deprivation of the blood and the admixture of this dirty white fibrous tissue, marked changes in the color of the liver.

In cirrhosis, the normal, dull, reddish brown color of the liver is altered to a bright canary yellow, sometimes to a brownish or greenish, and occasionally to a reddish color. A section of the liver, upon a general view, presents the grayish and yellow color of impure beeswax.

Owing to the contraction of the organ in the latter stages, the outer surface presents a granular or nodulated character, which has given rise to the designation, "*lob nail liver.*" The yellow color of the organ is also due to the large amount of yellow pigment contained in the secreting cells, and hence the term cirrhosis. The capsule is also sometimes thickened and adherent to the surrounding parts.

In the firm tenaceous granular liver, resulting from the congestion caused by obstructed cardiac circulation, and which has frequently been mistaken for cirrhosis, the depressions however correspond to the centre of the lobules, whereas in true cirrhosis they are at the circumference.

Ascites, resulting from portal obstruction, is met with oftener in cirrhosis than in any other disease of the liver. The fluid in the peritoneum, is a clear yellow serum, rich in albumen, and without any blood or inflammatory products. In consequence of the congestion and distention of the veins that return the blood from the intestines and peritoneum, the serous portion of the blood transudes through the walls of the vessels into the peritoneal cavity, and when once ascites appears, it persists and gradually increases; and when the amount of the effused fluid is large, it may compress the inferior vena cava and iliac veins, and thus produce secondary œdema of the legs, but it is a peculiarity of dropsy from uncomplicated portal obstruction, that the ascites precedes and preponderates over dropsy elsewhere. A large accumulation of fluid in the peritoneum may also interfere with the action of the diaphragm, and cause embarrassment of respiration, but it is distinguished from the ascites caused by cardiac disease, by the fact that the *dyspnœa follows and never precedes*

the ascites. Pressure exerted on the renal veins by a large quantity of fluid in the peritoneum, may also embarrass the action of the kidneys, and lead to the appearance of albumen in the urine, independently of any disease of those organs, the albumen disappearing from the urine, after the removal of the pressure by the operation of paracentesis.

The following cases will illustrate the characters of dropsy resulting from portal obstruction.

CASE XXVIII.—*Dropsy resulting from obstruction of the portal circulation in Cirrhosis of the Liver.*

This case illustrates in a striking manner, the effects of obstruction of the portal circulation, in the production of ascites, and of serous effusion into the cellular tissue of the lower extremities.

S. McL—, native of Rapides Parish, Louisiana; lately a resident of Catahoula Parish; has been engaged in farming during the past two years; age 35; height 6 feet; blue eyes. dark hair, dark complexion, thin beard; no hereditary tendencies; up to the present attack has enjoyed good health with the exception of occasional attacks of chills and fever. Patient says that he has used ardent spirits in moderation, and never to excess, except upon one occasion when he had an index finger shot off.

Patient states, that three months since, was seized with violent abdominal pains, extending from the umbilicus to the pubis, and attended with griping. A few days afterwards was seized with violent vomiting and ejected a large quantity of blood ("an ordinary blue bucket full"); the vomiting and loss of blood was attended with great exhaustion; four days afterwards, there was a repetition of this attack, attended with vomiting of blood.

Two weeks afterwards, an increase in the size of the abdomen was observed, attended with swelling of the lower extremities. Purgatives and diuretics, were administered; the patient remembers that Eleterium was used which appeared to be productive of no beneficial effects. Three weeks since his lower extremities began to ulcerate, and the ulcerations involved the subcutaneous areola tissue, and ragged indolent ulcers appeared.

This patient was admitted into the Charity Hospital, ward 19, bed 284, on the 13th of April, 1869, in an exhausted restless state; abdomen greatly distended; lower extremities œdematous and ulcerated. Auscultation and percussion revealed no disease of the heart and lungs.

The lungs and diaphragm were forced upwards by the effusion in the cavity of the abdomen the heart also appeared to be pressed upwards and forwards.

The sounds of the heart were unusually distinct, and abrupt and sharply defined but no enlargement, dilatation, degeneration or valvular disease, could be discovered. The lungs were resonant; the respiration was more frequent than usual, from the abdominal pressure, but there were no signs of obstruction in the pulmonary circulation; no pleuritic effusion, and no tubercular deposit.

The abdomen was enormously distended with dropsical effusion, and the veins of the abdominal parietes were enlarged and filled with blue dark blood, and presented a distinct arborescent appearance upon the abdominal parietes. The lower extremities were greatly swollen, and the legs ulcerated, with thickened, indurated discolored integument. The general complexion was sallow and anæmic. The urine was scant, high-colored, and loaded with biliary acids. The swelling was circumscribed by the superior wall of the abdominal cavity, and in fact, by the diaphragm. All above this was of the normal appearance, and the face and arms and thorax were thin and wasted, almost skeleton-like, whilst all below the diaphragm was swollen and infiltrated with serous fluid.

The sallow, jaundiced hue; the presence of the constituents of bile in the urine; the limitation of the swelling to the abdominal cavity and lower extremities; the absence of all organic disease of the heart and lungs; the absence of albumen and of fibrinous casts from the urine; the abdominal dropsy, and the congestion of the venous system of the abdomen and lower extremities, all sustained the diagnosis, that this was a case of CIRRHOSIS OF THE LIVER, in the latter stage of contraction, unattended by disease of the heart, lungs or kidneys.

The bowels were opened with two Compound Cathartic Pills, and the patient was placed upon the diuretic mixture composed of Cream of Tartar oz. i, Juniper Berry Tea (Juniper Berries oz. i, boiling water f. oz. xvi; after cooling strain) f. oz. xvi; to be taken in wine-glassful doses during the twenty-four hours.

The ulcerated extremities were treated with a stimulant and antiseptic ointment, composed of Carbolic Acid drachms i; Tincture of Iodine f drachms i; Simple Cerate oz. ii Mix; and apply lightly to ulcerated legs; and cover the ulcerations with English lint coated with Simple Cerate. Simple, but nutritious diet was directed. One sixth of a grain of Morphine was ordered at bed time, with directions to repeat in three hours, if necessary.

April 15th.—Temperature of axilla 97°; it is of importance to note that the temperature is below rather than above the normal point. This depression appears to be due to the obstruction in the portal circulation, caused by the cirrhosis and contraction of the liver, and also to the interference of the circulation and respiration from the abdominal pressure.

This observation, as well as others, confirmed the accuracy of the diagnosis, as to the absence of tuberculosis, and also confirmed the view that the affection of the liver was of long standing and in the stage of contraction.

Only eight ounces of urine were collected during the twenty-four hours; specific gravity 1030; high colored, loaded with biliary acids; upon standing let fall a copious deposit of urates, which disappeared when the urine was heated, and yielded a large crop of crystals (lozenge-shaped) of uric acid.

The diminution in the amount of urine appears to be due in a manner to the pressure of the fluid distending the abdomen, and also to the small amount of nourishment taken, the anæmic state of the blood, and the depletion of the serous or albuminoid elements of the blood.

April 16th.—During the night the patient was aroused about 1 o'clock A. M., with violent retching and vomiting, and ejected a greenish black matter in sufficient amount to fill an ordinary wash basin. This afforded some relief, but the patient was considerably depressed. In two hours the nausea returned, and the patient vomited a smaller amount. The matter was so disagreeable in its odor, that vomiting was excited in his nurse, whilst removing the matter from the ward.

Twenty-two ounces of urine were collected. Sp. gr. 1030; high colored; bowels free. Appetite poor.

April 17th.—The nausea, with occasional efforts at vomiting, continuing, the Bitartrate of Potassa and Infusion of Juniper Berries were discontinued. No appetite. Bowels free. Seven and a half fluid ounces of urine collected; high colored and loaded with biliary acids and urates. Ulcerations of the lower extremities improving under the use of the Carbolic Acid ointment. Patient restless and unhappy. It has been necessary to administer Morphine each evening to produce rest. Tincture of Cinchona of Gentian and of Rhubarb, in proportion of two parts of the former to one of the latter, have been given, properly diluted, in wineglass-ful doses, as a tonic and gentle laxative.

April 18th.—Symptoms the same; the distention of the abdomen has progressively increased. Only four fluid ounces of urine collected during twenty four hours.

April 19th.—No change; distention of the abdomen so great as to embarrass in the most distressing manner the action of the heart and lungs.

It was determined to tap the patient upon the following morning. Sixteen and a half ounces of urine were collected; upon careful testing no albumen was discovered; urine high colored and loaded with urates and biliary acids; sp. gr. 1030.

April 20th.—At my request, Dr. Warren Stone, Jr., performed the operation of paracentesis, midway between the anterior superior spinous process of ileum and umbilicus; three and a half gallons of serous fluid were drawn off, which presented a light golden yellow color. Specific gravity of serous fluid 1009, and upon the application of heat, the coagulated albumen filled about one-fifth of the test-tube. The patient expressed great relief. Percussion revealed no enlargement of the liver, but an actual diminution in the volume of this organ. After the application of the bandage around the abdomen, the patient was put on stimulants and nutritious diet.

Seventeen ounces of urine collected, high colored, loaded with urates and biliary acids; free from albumen; sp. gr. 1027.

April 21st.—Condition of the patient apparently improved by the tapping; appetite good; swelling rapidly subsiding from the lower extremities, and ulcers healing. Twenty-four fluid ounces of urine collected; high colored; sp. gr. 1027; no albumen.

April 22.—Patient perspiring freely; previously the skin has been dry and harsh. Serous fluid gradually accumulating in the abdomen. Appetite good, spirits cheerful, bowels regular. Urine presented similar character.

The patient was placed upon a gentle course of mercury, one grain every four hours, and on the 27th his gums were slightly touched; the abdominal swelling, however, went on steadily increasing. The patient continued to lose strength, and the accumulation of serous fluid in the abdominal cavity continued until the distention was as great as before the first tapping, bedsores began to form on the 29th, and a persistent diarrhoea set in, which was not arrested by astringents.

The patient became delirious on the night of the 30th, and lay in a semi-comatose state, and passed his urine and excrements in bed; and gradually sank by almost imperceptible stages, lying for two days in a state which could with difficulty be distinguished from actual death, and finally died at 4 o'clock P. M., May 3d.

The *post-mortem*, performed twelve hours after death, revealed the following points:

Upper extremities, head, neck and thorax, greatly emaciated, merely the skeleton with the skin stretched over; abdominal cavity and lower extremities greatly swollen and distended. The abdominal cavity contained near four gallons of serous fluid.

The lungs were healthy; without tubercles, or adhesions, or any marks of inflammatory change.

The heart was normal in size, with no lesions of the valves; the pericardium, however, was adherent, and this adhesion of the serous membrane of the heart, throughout its entire extent, accounted for the more distinct sounds of the heart.

The liver was greatly contracted, hardened, and of a slate color; and the spleen also was enlarged and hardened, and of a similar color with the liver. The kidneys were congested but healthy. No derangement beyond congestion of the bloodvessels was discovered in the kidneys.

The liver was cirrhotic, hardened and greatly diminished in size; the weight being only twenty-four ounces; the length ten inches, and breadth four and a half inches, and greatest thickness two and a half inches. The liver had lost the appearance of divisions into lobules upon the exterior, and resembled an elongated flattened spleen.

The color of the liver was slate on the exterior, and a mottled olivo green yellow and bronzo within.

The peculiar color of the liver appeared to be the result of the previous attacks of malarial fever, and the slow action of the malarial poison. Under the microscope, the fibrous tissue was found to be greatly increased, and the dark masses of altered hæmatin were scattered throughout the structures, giving to the organ, its peculiar malarial hue. The liver cut like leather and was firm and hard.

The spleen was enlarged and indurated and had lost the natural splenic mud. Weight of spleen: nine ounces; length, six inches; breadth, three and a half inches; thickness, one inch. Spleen cirrhotic like the liver, and cut like leather. Contained numerous masses of hæmatin and altered blood corpuscles.

This then was a case of undoubted induration and contraction of the liver, unaccompanied by disease of the heart or kidneys; but attended with the marks of pre-existing malarial disease.

The relations of the action of the malarial poison, to the induration and contraction of the liver, are of the most important character, and demand farther investigation.

The question is, whether the effects of the malarial poison were merely concurrent with, or subsequent to, the establishment of the cirrhosis, or whether they caused the peculiar state which lead to the throwing out of fibrous matter, and the subsequent contraction and induration of the organ.

This case, resembles the chronic atrophy of Frerich, or the red atrophy of Rokitansky; in which there is no nodulation or granulation of the outer surface, and not necessarily any thickening or adhesions of the capsule. The liver affected with the chronic atrophy of Frerich, like that of the case now under consideration, presents a dark-brown, or bluish-red color, firm consistence and homogeneous appearance, with little or no indication of a division into lobules; the secreting cells being smaller than natural and loaded with dark-brown pigment granules. In like manner, the atrophy of the organ is general, and as in the present case it has been known to weigh only twenty-four ounces. But the most important anatomical character of chronic atrophy, is said to be, the destruction of the ramifications of the portal vein, the branches of which terminate in club-shaped extremities, so that the organ cannot be minutely injected from the portal vein.

Pathologists describe this comparatively rare form of liver disease, as being occasionally seen in connection with simple and cancerous ulcerations of the stomach and intestines, or with a deposit of blood pigment in the minute vessels of the liver, in the bodies of persons, who have suffered long or often from intermittent or remittent fevers.

It is well known that both the liver and spleen are congested during the cold stages of intermittent and remittent fever, and during the action of the malarial poison, either in its most active manifestation, or in the state of chronic malarial poisoning, the colored blood corpuscles are destroyed in large numbers both in the liver and spleen.

It is reasonable therefore to refer the induration and atrophy of the liver in this case, in its first origin, to the action of malaria.

CASE XXIX. *Dropsy resulting from Cirrhosis of the Liver and Cardiac disease.*

This case of the stout seamen, William Woods, who died in ward No. 18, a few days after coming under my treatment, presents several points of interest, and the dropsical effusion in the cavity of the abdomen, and into the cellular tissue of the face, and upper and lower extremities, were due to both cardiac disease and cirrhosis of the liver. The following outline of this case will serve for comparative deductions.

William Woods; aged 47; dark hair, dark complexion; in health a large powerful, stout, athletic man; ship carpenter by trade; has been sick about two years; says that his disease commenced whilst working in the water; has always used ardent spirits daily in large, or rather, pretty free quantities.

Entered the Charity Hospital November 9th, 1868. At that time the abdomen was much distended with serous effusion, and it has been necessary to tap the abdomen upon several occasions; and several gallons of water have been drawn off.

When this patient came under my treatment in the month of March, 1869, the complexion was of a wax-like, unhealthy jaundiced hue; the features of the face were swollen and livid from venous congestion; the abdomen was distended with dropsical effusion, and the extremities were œdematous. Patient feeble, but able to sit up, and walk about a little. Great obstruction of venous circulation; veins of neck distended with black blood. Lips livid. Arteries in all parts of the body, where they could be carefully examined, greatly enlarged and tortuous, with a powerful beat. The column of blood is sent out with great force from the heart, giving a powerful beat to the arteries, which appeared to be universally enlarged and degenerated. This degeneration of the arterial system is still farther shown by the *arcus senilis*. Great oppression in breathing. At times the restlessness and oppression very great. Patient cannot lie down with comfort, but requires to be propped up in bed. Percussion and auscultation revealed dullness in the lower dependent portions of the lungs, and greater flatness over the chest than in health; there were no symptoms of pneumonia or pleurisy or of phthisis, and the dullness was referred wholly to the obstruction of the circulation. Heart greatly enlarged, with a powerful beat. The dullness upon percussion extends from the junction of the second rib with the sternum, to the lower edge of the seventh rib, and even beyond the right border of the sternum. The region of dullness, indicating the position of the enlarged heart, is eight inches in the longitudinal and about six inches in the lateral or transverse diameter.

The first sound of the heart is entirely altered to a low bellows sound, terminating abruptly by the powerful closure of the pulmonary and aortic valves. Both sounds of the

heart are merged into one—a powerful, low, blowing sound, with a sharp, loud termination : thus TU-U-CHUCK. The sounds of the heart resemble those made by an ordinary steam tug. The sounds of the heart are heard with great distinctness along the track of the large arteries, and especially of the carotids.

Abdomen greatly distended with serous effusion. Liver apparently diminished in size and hardened.

Derangement of the liver is evidenced aside from the ascites, by the yellow jaundiced hue of the complexion, and the great amount of bile in the urine. Oedema of extremities. Bowels constipated. Appetite poor. No marked febrile phenomena. Patient dull and lethargic, but calm and sensible.

The diagnosis of this case was :

Hypertrophy and Dilatation of Heart.

Universal Degeneration and Dilatation of Arterial System.

Great Enlargement of Aorta.

Cirrhosis of Liver.

The dropsical effusion was referred directly to these causes.

The patient continued to grow worse; treatment was only palliative, and he died on the 27th of March, 1869.

The *Post-mortem Examination*, performed six hours after death, revealed enormous hypertrophy of the heart; this organ was eight inches in the longest diameter, and six and a half inches in transverse diameter, after being emptied of the dark venous blood which distended its cavities, and after being preserved in alcohol. During life, when distended with blood, its dimensions were much greater. All the cavities of the heart, but more especially the left ventricle, were dilated, and the auriculo-ventricular openings were greatly dilated. No thickening of the auriculo-ventricular valves was observed.

The valves of the aorta and pulmonary arteries were somewhat enlarged and perhaps degenerated, but no deficiency or adhesions or calcareous degeneration were observed.

Aorta and pulmonary artery; but especially the former, degenerated, roughened and dilated. The dilatation of the aorta amounted in the ascending portion and arch almost to an *aneurism*. The arteries were universally dilated and degenerated in their structure, and appeared in a great measure to have lost their elasticity. Microscopical examination showed that this dilatation and loss of elasticity was due to the conversion of the unstriped muscular fibres into fat. The liver presented a rough hob-nail appearance upon its exterior; it was contracted, diminished in size; the capsule was greatly thickened, and could be peeled off, and the structures were cirrhotic.

Kidneys congested, but healthy in structure—no degeneration or alteration of secretory textures.

Spleen somewhat enlarged.

This liver, as in all the other patients who had been exposed to the malarious climate of the Mississippi valley, presented a darker color than usual in cirrhosis, and also gave evidence in the dark granular masses of the preceding destruction of the colored blood corpuscles.

The dropsy in the preceding case was clearly referable to cirrhosis of the liver, and cardiac disease.

We will consider briefly in the next place :

The Treatment of Hepatic Dropsy.

The treatment of dropsy arising from portal obstruction, must depend not only upon the cause of this condition, but also upon the various complications, as cardiac and renal disease. The preceding cases illustrate in a clear manner, the fact, that dropsy may be referred in the same case, to several causes, as cirrhosis of the liver, and cardiac disease; it is therefore absolutely essential that the physician, should, as far as possible, clearly recognize in each case the cause or prominent cause of the dropsical effusion. It would be foreign to our purpose, to discuss the mode of treatment applicable to all the diseases of the liver, which may give rise to ascites; and our effort will be to indicate briefly the mode of treatment of that form of dropsy illustrated by the preceding cases, viz., ascites arising from *cirrhosis of the liver*.

Cirrhosis of the liver is at the outset obscure and insidious, and is slow in its progress, often extending over several years, the physician therefore rarely has an opportunity of treating the disease at its commencement. When, however, the existence of the disease is indicated by the symptoms of disordered digestion, loss of appetite; flatulence, irregular action of the bowels, pain after food, dull pain, with slight tenderness in the right hypochondrium, and slight enlargement of the liver, occurring in a person addicted to spirit drinking, attention should at once be directed to the habits and diet of the patients. Alcoholic stimulants, and rich, indigestible, stimulating food and condiments, should be interdicted, and the patient confined to spare, but nutritious diet, consisting of such articles as milk, eggs, and farinaceous substances, with a moderate allowance of meat and fish. In order to avoid the occurrence of delirium tremens, it will be necessary in some cases in which the habit of taking large quantities of alcoholic stimulants has been fully established, to reduce the amount gradually. The bowels should be kept freely open, by saline purgatives, and occasional doses of blue mass and calomel, and the general health preserved by regular exercise in the open air.

If the pain and uneasiness, in the region of the liver, is well marked, sinapisms, leeches, dry cups and cut cups may be used over the affected organ, with benefit.

If the liver still remains enlarged, after the subsidence of pain, the alterative effects of Iodine—ether locally, in the form of the tincture or ointment, over the region of the liver, or internally, in the form of the Iodides of Potassium and Iron, or of Lugol's Solution should be carefully tried. If these measures fail in reducing the liver, recourse may be had to the mineral acids, the Hydrochloric, Nitric and Nitro-muriatic Acid, internally, and to the Nitro-muriatic acid bath*.

When the stage of contraction of the liver sets in, as evidenced by diminution of the area of hepatic dullness, jaundice and

* The Nitro-muriatic Acid Bath is prepared by adding two ounces of strong Hydrochloric Acid, and one ounce of strong Nitric Acid to two gallons of water, at 93° F. Deep, glazed, earthen or wooden vessels should be used, and the feet and legs are immersed in the bath, whilst the thighs and right side are spenged with the acid solution. The patient should remain in the bath from half an hour to one hour. The bath thus prepared should be renewed at least every third or fourth day.

ascites, there appears to be no known treatment, which will restore the liver to its normal condition, or remove the obstruction to the portal circulation. In this stage the efforts of the physician are directed chiefly to the relief of symptoms, and the support of the patient's strength, in order that life may be prolonged to its farthest limit.

The diet should be nutritious but not stimulant, alcoholic stimulants should be entirely prohibited, or used only in cases of emergency and with great caution; the digestion should be improved by such tonics as Quinine, Gentian, Nitro-muriatic Acid and Strychnia; and the bowels should be kept open, whenever sluggish, by mild purgatives.

The ascites should be treated by diuretics and purgatives. A pill composed of half a grain of powdered digitalis, one grain and a half of powdered squill and two grains of blue pill, has been administered with benefit in cases of ascites, dependent upon hepatic disease, two or three times daily.

The diuretics and purgatives previously recommended in the treatment of cardiac disease may be employed. As a rule, however, the ascites slowly increases, and sooner or later it is necessary to resort to the operation of paracentesis; this should be delayed, as long as possible, for notwithstanding the temporary relief afforded, and the increased action of the kidneys, the fluid usually collects again rapidly, and the patient is exhausted by the great drain of albumen from the blood.

4.—*Dropsy arising from derangement or lesion of those organs which regulate the amount of the blood, as well as its constitution, by regulating the amount of the watery element, and by the elimination of excrementitious material.*

The kidneys not only regulate the amount of the watery element of the blood, but they also eliminate certain noxious substances, resulting from the metamorphosis of the tissues, and the chemical changes involved in the generation of the physical forces; any arrest or alteration or suppression of the action of these important organs, must, therefore, be followed by an accumulation of the watery element, and certain excrementitious

matters in the blood, derangement in the processes of absorption and exhalation, and disturbance of the sympathetic and cerebro-spinal nervous system.

It has been estimated upon reliable data, that the amount of water taken by an adult, in twenty-four hours, is, on an average, from one-half a fluid ounce to six-tenths or seven-tenths of an ounce for each pound avoird. of body weight; a man weighing 140 pound, will therefore take about seventy to ninety fluid ounces daily, and in ordinary diet about twenty to thirty ounces of this are taken in the so-called solid food, and the remainder is drank as liquid of some kind.

But the amount taken varies within wide limits in different circumstances, and from individual peculiarities; some men take only sixty ounces—others as much as one hundred and twenty, or even more; more water is consumed in a dry than in a moist climate, and during great exertion than during a period of rest. The mean amount of water, excreted through the kidneys by different male adults, varies from thirty five to eighty-one fluid ounces a day. The variations in the amount of water excreted by the kidneys, will depend upon the varying quantity introduced into the system, and upon the varying quantity eliminated by the skin, lungs and bowels.

It results from the preceding calculation, that the kidneys alone, eliminate during the year, in adult men, on an average, from eight hundred to eighteen hundred pounds of water. This great and continuous circulation of water through the living being is essential to the existence of life; and the performance of the various functions. Thus during the development of heat, and of the forces which work the animal machine, a portion of matter is chemically altered, decomposed and broken up into simpler forms; if these matters, as urea, uric acid and carbonic acid, and urate of ammonia, be not continuously removed, ill-health and finally death will result. To accomplish the continuous removal of the various useless and noxious substances, there is first, the almost universal solvent water; second, the circulatory apparatus, in which these substances are received and by which they are distributed; third special organs as the lungs and kidneys, which separate these matters from the blood, and

cast them out of the circle of living molecules. We are thus enabled to understand the reason, why general dropsy so rapidly and so surely supervenes, when the function of the kidneys is arrested or materially impaired.

An additional cause of dropsy is also known to exist in certain diseases of the kidneys: viz., the constant loss of albumen by transudation through the capillaries and excretory tubes of these organs, and the consequent derangement of the composition of the blood.

The diseases of the kidneys, which are almost universally attended with dropsy, are:

Congestion and acute inflammation of the kidneys, occurring as a sequel to scarlatina;

Acute nephritis caused by exposure to cold or wet;

Acute Bright's Disease ("croupous nephritis.") The course of this disease is always acute, and terminates either in recovery or death in most cases within a few days. It is a frequent complication of scarlatina. Post-mortem examination shows the kidneys to be congested, enlarged, with the urinary tubes filled up and occluded with an extravasation consisting of a coagulating exudation, containing epithelial cells and blood-corpuscles.

Chronic Bright's Disease ("parenchymatous nephritis.") The predisposing causes of Bright's disease, are cold; incautious exhibition of certain irritating diuretics, as cubebs, copabia and oil of turpentine; the abuse of ardent spirits; the alcohol eliminated with the urine acting locally upon the structures of the kidneys, the disease appearing almost as frequently among hard drinkers, as cirrhosis of the liver; tedious suppuration, accompanying caries and necrosis of the bones; the conditions of dyscrasia, occasioned by gout, rachitis, scrofula and malarial cachexia.

In the *so called* large white kidney, the cortex is pale and hypertrophied, and the uriniferous tubes crammed with granular epithelium. The large white kidney, is often merely an advanced stage of acute nephritis, but it may also be developed independently, as the result of chronic inflammation.

In the fatty kidney, the organ is large and pale, and the secreting cells loaded with oil; and the observations of patho-

logists render it probable, that this stage is preceded by the stage of exudation, characteristic of the large white kidney.

On the other hand, in the two common forms of chronic kidney disease, characterized by the contracted, granular, or gonty kidney, and the waxy or amyloid kidney, anasarca rarely shows itself, except shortly before the fatal termination:

Dropsy arising from renal disease, has the following distinguishing characters.

The anasarca of the subcutaneous areolar tissue, is general from the first, and most generally noticed first in the face; fluid is also always almost effused into the pleuræ, pericardium and peritoneum. The urine is scant, turbid or smoky, containing large quantities of albumen and sometimes blood; also renal epithelium and casts of the uriniferous tubes, varying in their character, according to the particular disease of the kidney. The countenance is swollen, heavy and pale, with a peculiar wax-like appearance. There is a tendency to nervous disturbances, convulsions, loss of memory, restlessness, delirium and coma. The digestion is deranged, with dry tongue, fœtid breath, and obstinate vomiting.

In the production of the anasarca, which accompanies and forms a prominent symptom in certain diseases of the kidney, several causes are in operation.

1st. In the acute affections, when dropsy comes on rapidly in a few hours, and is almost the first indication of the disease, this symptom is most probably produced by the retention in the blood-vessel system of the water urea and salts which should be eliminated in the form of urine. The anasarca comes on before any great amount of albumen has been thrown off from the blood by the kidneys; the blood is still rich in this constituent, and the change in the blood results rather from a relative increase in the watery element and the retention of those noxious compounds as urea, which should be continuously eliminated. The circulation of the blood through the capillaries, depends not alone upon the continuous action of the heart, but also upon the relations of the blood to the capillaries and to the organs and tissues through which it circulates; whatever therefore alters the constitution of the blood, deranges the capillary circulation,

by deranging the chemical affinities of the blood and tissues, and by deranging the action of those portions of the nervous system which preside over and regulate the amount and character of the capillary circulation. If water be injected into the blood-vessel system of living animals to an extent greater than that which may be readily and rapidly overcome by the kidneys, congestions of important organs, and serous transudations will speedily result. Whether the view be held that urea, as urea acts as a poison, or it be maintained that the poisonous effects resulting from the injection or retention of this substance in the blood, be due to certain changes of chemical constitution in the urea, in consequence of which it is converted into a more active substance, viz., carbonate of ammonia; the cause of the anasarca is with equal justice traced in part, at least, to the paralyzing or deleterious influence of certain excrementitious matters upon the nervous system, heart, smaller arteries and capillaries.

2. In chronic Bright's Disease, in addition to the retention to a great extent of the watery element, and the consequent distention and relaxation of the swollen arterial branches and capillaries, and the retention of the poisonous urinous excrements, there is a continuous and great loss of albumen, which results in the production of a thin poisoned blood; and the consequent derangement of the nutrition circulation and functions of the organs and tissues. The researches of Gregory, Bostock, Christison, Andral and Gavarret, Becquerel and Rodier, have shown clearly, that a diminished proportion of albumen, and a consequent decrease in the density of the serum, constitute the leading changes of the blood in Bright's Disease, and from which may be deduced, in part at least, the pathogenesis of the dropsy developed under such circumstances. The diminution of the albumen, as well as the extent of the dropsy, bear a relationship to the duration of the disease, being much less in acute, than in chronic Bright's Disease. The diminution of the proportion of albumen in the blood, is scarcely perceptible in the acute stage, before the fourth day. A great change takes place in the blood, in chronic Bright's Disease; its mean density falling from 1060. to 1045.6; the globules fall likewise, whilst the fibrin is somewhat increased; the serum likewise undergoes a considerable

change, the mean specific gravity being represented by 1021; and the albumen being so much diminished, that its mean is represented by 55.

These propositions were discussed at length in the lectures by the bedside; it would be impossible to record this discussion at the present time, and we will conclude this subject, with the following cases illustrating in a striking manner, the production of dropsy by kidney disease.

CASE XXX. *Dropsy resulting from Bright's Disease of the Kidneys.*

Frederick Mayer; aged 30 years; height 5 feet 7 inches; weight 160 pounds; light sandy colored hair; blue eyes; fair complexion; native of Sweden; laborer by occupation; has generally enjoyed good health, with the exception of chills and fever, in the last two years.

Admitted March 21st, 1869, to Charity Hospital, ward 29; bed 422; œdema of the lower extremities; scrotum and penis greatly distended with serous effusion; some effusion in abdominal cavity; face puffed; complexion sallow and wax-like; action of heart somewhat irregular, with a slight murmur in the first sound; slight cough attended with pain, referred to the præcordial region; cough most troublesome during the night; very slight expectoration; percussion sounds over lungs duller than in health, indicating œdema of those organs, with some pleuritic effusion. Patient has a large and well formed chest and there are no symptoms of tuberculosis. No enlargement of the heart was detected, and the cardiac murmur was referred chiefly to the anæmic state of the blood. Bowels regular. The diagnosis that this was a case of BRIGHT'S DISEASE, was still further confirmed by an examination of the urine. Heat and nitric acid showed the presence of albumen in the urine and casts of the urinary tubes of the kidneys were detected in moderate abundance under the microscope.

The bowels were opened freely with Compound Cathartic Pills, and the attempt was made to excite and increase the action of the kidneys, by the Cream of Tartar and Juniper Berry mixture previously described. The patient was directed to shake up the Cream of Tartar before using, so that the entire amount of one ounce, in a pint of the Infusion of Juniper Berries should be taken during each twenty-four hours. Under this treatment the urine increased in amount, the pulse became regular; the tongue cleaned; the bowels were moved regularly every day; and the patient became more active and cheerful, and there was a marked diminution of the œdema.

April 3d.—Amount of urine passed f. ozs. lxxiv; color pale; albumen abundant; numerous casts of tubuli uriniferi; the casts contained numerous oil globules, with degenerated cells and granular matter.

April 3d.—Amount of urine passed f. ozs. lxxvi; pale yellow; sp. gr. 1013; upon application of heat, the albumen, after coagulation, filled one-fifth of the test-tube.

April 4th.—Pulse 76; respiration 20; tongue clean, appetite good; bowels regular; sallow, unhealthy wax-like complexion. Amount of urine passed, f. ozs. lxxvi; sp. gr. 1013, amber colored; contains casts of tubuli uriniferi and albumen. Under the use of the Cream of Tartar and Juniper Berry tea the swelling is slowly diminishing, and the general condition of the patient improving.

April 5th.—Continues to improve slowly; the diuretics still keep up a full flow of urine, seventy-five fluid ounces having been passed during the last twenty-four hours; amber-colored, and containing granular casts of the tubuli uriniferi and albumen.

April 6th.—Amount of urine passed during twenty-four hours, f. ozs. lxxv; sp. gr. 1013; careful microscopical examination shows the presence of numerous small oil globules in the excretory cells of the cast-off tubuli uriniferi.

April 7th.—The amount of urine has slightly decreased, seventy fluid ounces having been discharged during the past twenty-four hours; but with this slight decrease, there is an elevation of the specific gravity to 1016; so that the whole amount of solid matter eliminated is probably greater than when the urine was somewhat more abundant, with a specific gravity of 1013.

The patient under the persistent use of diuretics and gentle purgatives, and simple but nutritious diet, slowly improved, and left the hospital at the end of April; the swelling had not entirely disappeared, but the patient left of his own accord.

My attention was again called to this patient in the month of August, 1869; he had returned to the hospital in a most distressing condition, with general œdema, and the abdomen enormously distended with dropsical effusion. The scrotum was so greatly distended that the skin burst, and from the cracks the serous fluid issued.

The patient was not then under my treatment, and I was not informed what measures were instituted for his relief, beyond the free use of squill and calomel. The patient died about the middle of September; no post-mortem was held as his friends claimed the body.

CASE XXXI.—*Dropsy resulting from Bright's Disease of the Kidney.*

John Shone. The patient gave the following history: Was admitted to Charity Hospital in 1858, with what he terms swamp fever, and was discharged in one week, after which time, was attacked with dropsy, and then entered the Marine Hospital, where he remained three weeks. The dropsy was relieved, and he enjoyed good health for the space of two years; at the end of which time he began to be afflicted with periodic headaches and vomiting.

Entered the Charity Hospital, on the first of February, 1869, and was treated for Albuminuria, and left of his own accord, on the 16th, and returned again on the 5th of March. The patient appears to have been benefited by a mixture compound of Tincture of Sesqui-Chloride of Iron, Digitalis and Nux Vomica. Purgation is said to have given the greatest relief to the pain in the head and vomiting.

Came under my treatment in ward 18, bed 264, on the 2nd March 1869. Age 26; height five feet eight and a half inches; weight in health one hundred and eighty-five pounds, at the present time one hundred and seventy-two pounds; has a large and well proportioned frame; color of hair red and sandy; eyes blue; complexion in health florid; native of Germany; seaman; has no hereditary tendencies as far as known.

Complexion sallow, and of a waxen hue; bowels constipated except when moved by purgatives; skin soft and moist; tongue red around the edge and tip; pulse regular; impulse of heart regular, but a murmur is heard over the region of the aortic valves synchronous with systolic impulse of the heart; respiration natural; temperature of axilla 98.5 F. The features are full, swollen and oedematous, and the cheeks hang in a dead flabby manner, and the expression of the countenance is heavy, though not disagreeable, and there is no expression of pain or distress. The cellular tissue generally of the body, and especially of the lower extremities, is oedematous and pits when pressed, and the pits formed by the pressure of the fingers remain for a great length of time. The urinary secretion is abundant and contains both albumen and casts. The patient suffers, periodically about every seven days, with attacks of severe headache and vomiting. The patient was placed upon the Cream of Tartar mixture as a diuretic, and the bowels kept open by the compound Jalap powder mixed in molasses.

April 7th.—In much the same state.

May 1st.—Has been troubled with dyspnoea at night, during the past week, and in addition to the Cream of Tartar mixture, has been put on a tonic composed of Huxham's Tincture of Bark and Tincture of Gentian. The tonic has improved his appetite and reduced the amount of urine.

May 18th.—Tincture of Sesqui-Chloride of Iron, in moderate doses, substituted for the Tincture of Bark and Gentian.

May 24th.—Suffering with headache and difficulty of breathing; urine have increased in quantity since the Tincture of Bark and Gentian has been omitted. The amount of albumen in the urine has decreased during the last month, averaging from one-seventh to one-tenth of the bulk of the urine, when coagulated and allowed to settle in the test tube.

May 30.—The condition of the patient much the same; his spells of vomiting have not recurred so frequently; suffers with considerable dyspnoea during the spells of headache and vomiting. The amount of albumen has decreased somewhat, ranging from one eighth to one-twelfth in moist volume. The patient is still taking the infusion of Juniper Berries and Cream of Tartar, together with the Tincture of Murrate of Iron.

June 10th.—Suffering with pain in head and dyspnoea. Urine passed in last four days contained more albumen, averaging about one-sixth in moist volume, and the amount of urine ranging from fifty to sixty-five fluid ounces.

June 22d.—Patient suffering greatly with dyspnoea; pale, anæmic; action of heart tumultuous; great difficulty in filling the lungs; the left lung is dull upon percussion, from the diaphragm or borders of the ribs upwards, to the nipple, between the fourth and fifth ribs. Upon careful examination of the patient in the sitting and recumbent posture, it is evident that a considerable amount of fluid has been effused into the pleural cavity of the left lung, compressing and embarrassing its action. Right lung more resonant than left, but there is evidently some effusion upon this side also. Dullness upon percussion, over region of heart, greater than normal. Action of heart irregular, and sounds indistinct; blowing sound with the first sound, whilst the second sound is prolonged. Serious effusion in abdominal cavity, with tenderness in epigastric and hypochondriac regions.

The following table will present in a condensed form some of the chief symptoms:

DATE.	Pulse.	Respira- tion.	Tempera- ture of Axilla.	CHARACTERS OF URINE.			REMARKS.	
				Am't in 24 hrs. in ounces.	Sp.Gr.	Celer.		Albumen.
April 1st, 1869, 9 A. M.	72	18	F. 98.5	68	1010	reddish	1-6	In bed and suffering with headache. Headache.
" 2d, "	72	18	98.5	110	1010	yellow	1-3	
" 3d, 1869, 5 P. M.	72	18	99.5	110	1010	amber	1-3	
" 4th, 1869, 9 A. M.	70	18	98.	150	1010	pale	1-3	
" 5th, "	70	18	99.5	45	1014	yellow	1-3	
" 6th, "	80	....	99.	72	1013	..	1-7
" 7th, "	82	....	99.2	75	1012	..	1-3
" 8th, "	82	....	98.5	75	1012	..	1-3
" 8th, 1869, 6 P. M.	86	....	100.5	100	1010	..	1-3
" 9th, 1869, 9 A. M.	83	....	100.	100	1010	..	1-3
" 10, "	88	22	99.5	83	1010	..	1-3	During night head- ache.
" 12-13	88	....	99.	80	1010	..	1-7
" 14th, 9 A. M.	90	....	99.	85	1010	..	1-7
" 15 and 16	90	....	99.	75-85	1010	..	1-3
" 17-20	80	....	99-100	65	1010	..	1-3
" 21st, 9 A. M.	91	99.2	50	1014	..	1-3	On 20th headache and vomiting.
" 22d, "	96	....	100.7	60	1010	..	1-7
" 24-25, 9 A. M.	80	100.5	60	1010	..	1-3	De de
" 26th, "	82	100.5	80	100.9	..	1-3	Do do
" 27-May 1st	80	100.5	100	100.9	..	1-3	Headache.
May 2d-9th	82	100	70	1010	..	1-7	Headache and dysp- noea.
" 11-15	82	....	99.5-100	35-75	1010	..	1-7 1-10
" 16-24	82	....	99	40-0	1010	..	1-8 1-12
" 25-30	80	....	99.	35-65	1010-1012	..	1-8 1-12
June 6th	80	99.5	40-65	1012	..	1-8 1-12	

In conjunction with Dr. B. A. Pope, this patient, together with several other cases of Bright's Disease, under my treatment were subjected to a careful examination with the ophthalmoscope; the characteristic alterations of the retina indicative of Bright's Disease, were discovered, although they were absent in other cases of this disease; thus showing that the ophthalmoscope is incapable of indicating the disease in all cases.

This patient left the ward for another on the 22d of June, and passed from my care and treatment.

I was informed that after the transfer, the diuretics and purgatives were discontinued, and the dropsy rapidly increased, and the patient died about the middle of July.

In this case, the dropsical effusion was restrained within certain limits by the judicious use of diuretics and purgatives, and as soon as they were discontinued death speedily ensued.

CASE XXXII.—Dropsy Resulting from Bright's Disease of Kidney.

Charles Daley; age 60, height 5 feet 5 inches; weight in health 140 lbs; left leg shorter than right, from having had compound fracture of both tibia and fibula: the patella is now quite prominent; black hair, hazel eye, florid complexion in health; native of Ireland; laborer; no constitutional tendencies as far as could be gathered from statements concerning the health and diseases of his relatives; has never had syphilis or scrofula; has been in the habit of drinking whisky freely, at times to excess, for forty years; has enjoyed pretty good health, with the exception of a spell of chill and fever, about five years ago.

Was admitted to the Charity Hospital on the 15th March, 1869, ward 29, bed 429, with general anasarca and with albuminous urine. The anasarca appears to have come on gradually. Complexion sallow and of a waxy appearance. Features swollen. Trunk and extremities œdematous; pressure causes pits which disappear very slowly. Appetite and spirits very good, but muscular and nervous forces depressed. Diagnosis, Bright's Disease of the kidneys.

The patient was placed upon the Cream of Tartar and Juniper Berry tona, Tincture of the Sesqui-chloride of Iron, and nutritious diet, and the bowels were kept gently open by saline purgatives.

March 30th—Patient appears to be improving; the amount of urine has increased; the complexion is somewhat clearer and the anasarca has disappeared to a considerable extent. Weight at the present time about one hundred and twenty pounds. Patient cheerful, with a good expression of eyes, but is very weak and confined to bed most of the time. Bowels regular; skin softer and more moist. Tongue natural. Urine loaded with albumen and casts.

The following table will exhibit some of the more prominent symptoms:

DATE.	Pulse.	Respiration.	Temperature of Hand.	Temperature of axilla.	Complexion.	Decubitus.	CHARACTERS OF URINE.			
							Am't of Urine in 24 hours. f oz.	Specific Gravity.	Color of Urine.	Abnormal Constituents.
April 1st, 1869, 9 A. M.	75 18	...	98	Sallow.	Confin-	52	1008	Pale.	Albumen.	
" 2d,	75 18	...	98	Waxy	ed to	34	1010	Yellow	Casts of Tubu-	
" 3d,	75 18	83°5	97 5	featurcs	bed.	30	1010	..	li Uriniferi.	
" 3d, .. 5 P. M.	75 18	...	99 5	swollen	Lies on	30	1010	..	albumen.	
" 4th, .. 9 A. M.	98 25	...	98	..	back.	32	1010	..	..
" 5th, .. ..	..	..	97 5	..	..	40	1 10	..	..
" 6th, .. ..	..	..	97 5	..	..	38	1 08	..	..
" 7th, .. ..	..	..	..	..	..	35	1010	..	1.6 ..
" 8th, .. 6 P. M.	..	..	100 5	..	..	35	..	..	1.6 ..
" 9th, .. 9 A. M.	..	..	98 5	..	..	8	1016	..	1.3 ..
" 1 th,	98 26	...	98 5	..	..	11	1 25	..	5.6 ..

April 10th.—Lungs dull upon percussion; and there is a decided increase of heat, every day towards night. The urinary secretion progressively decreased, and with this decrease, the swelling increased in the cellular tissue and abdominal cavity.

On the 12th of April the patient got out of bed, and passed a portion of the day on the gallery, in the rear of the ward. The day was damp, rainy and cold. From this exposure the patient contracted a severe bronchitis, which seemed to prostrate him greatly, and he gradually grew worse, and died on the 5th of May. Death was preceded by convulsions and coma.

The post-mortem examination revealed adhesions of the liver, stomach, heart and lungs to their respective serous cavities and membranes; the liver was congested; spleen normal; lungs contained milary tubercles; *kidneys in a state of fatty degeneration.*

CASE XXXIII. — Dropsy resulting from Bright's Disease of Kidney.

John Crowley; seaman; native of Pennsylvania; age 27; no hereditary tendencies can be traced; had syphilis twelve years ago, the disease is said to have yielded readily to treatment, and disappeared in three weeks; well made, muscular man, with full well developed chest; blue eyes; light yellow hair; during his sea-faring life has been in the habit of using strong alcoholic stimulants freely; during a portion of his life has acted as fireman on board steamship, and whilst performing his duty, would frequently be exposed to sudden changes of temperature and to wet and cold, and at such times would indulge freely in alcoholic stimulants. Enjoyed good health up to the last twelve months, when he was shipwrecked, and remained in the water some nine hours, and contracted a severe cold, from the effects of which the patient has suffered in the way of a slight cough, up to the present time.

Entered Charity Hospital, ward No. 13 bed 199, December 8th, 1869. Features of face swollen; slight serous effusion in abdominal cavity; lower extremities œdematous, pitting on pressure; scrotum swollen; complexion has a sallow, wax-like appearance; urine albuminous, and under the microscope loaded with casts of the tubuli uriniferi. Upon auscultation, subpirant rales are heard in the anterior portion of the right lung, referred to chronic irritation of the bronchial tubes; no signs of tubercular deposit were discovered. The heart sounds are not altogether normal, and the soft murmur was referred to the anæmic condition of the blood. Liver slightly enlarged. Excretion of kidneys augmented; the amount of urine passed daily ranging from eighty-eight to one hundred and eleven fluid ounces, of low specific gravity, ranging from 1008 to 1009. Patient says that during the last three weeks he has been easily fatigued, and during the last twelve months has suffered with pain in his back in the region of the kidneys, but has been following his usual occupation to within the last month. Temperature of axilla 98°8 F.; pulse 72; respiration 18. Amount of urine passed during the last 24 hours 88 f oz.; sp. gr. 1009. When the urine was subjected to the action of heat and nitric acid, the moist coagulated albumen filled one-fifth of the test-tube. The patient was placed upon the Cream of Tartar and Juniper Berry tea, Tincture of Sesqui-chloride of Iron and simple but nutritious diet.

December 18th.—The apex beat of the heart is most forcible to the left of nipple; percussion also renders it probable that the left ventricle is hypertrophied to some extent. Auscultation over region of heart reveals a soft murmur, heard loudest over base of the heart, during second sound; it is also heard at apex with loss of murmur over body of heart, the sound being transmitted along arch of aorta, but not from apex towards spinal column. The veins of the upper portion of the chest are somewhat enlarged and congested. Patient suffers with cough and oppression of breathing, after exertion. The respiration is prolonged with considerable roushus, with a few sibilant rales. The lungs are duller upon percussion than in health, and there is some effusion in both pleura. The dullness upon percussion appears to be due in part, also especially in the infra-clavicular and clavicular regions, to œdema of the pulmonary tissue. The cardiac murmur is probably due not only to the anæmic state of the blood, but also to fatty or calcareous degeneration of the aortic valves, permitting

some regurgitation of blood into the left ventricle. The urine contains albumen in abundance, with casts of the tubuli uriniferi. The amount of urine passed during the twenty-four hours, has ranged from sixty to one hundred fluid ounces. The temperature of the axilla ranged in the morning from 99° to 100° F., and in the evening from 99°5 to 101°.

Under the use of the Diuretics and gentle purgatives, the anasarca has slowly diminished and the patient appears to be more comfortable. There are times however, when the nervous system is much disturbed; (headache, restlessness and dilatation of the pupils), apparently from the retention of the constituents of the urine.

Dec. 27th.—In addition to the preceding treatment, the warm bath, at bed-time; and the steam bath (prepared by heating a brick and pouring water over it while under the bed-clothes), were ordered; and as a tonic and gentle stimulant, a tablespoonful of Huxham's Tincture of Bark, three times a day, one hour before each meal.

Dec. 28th.—In order still further to act upon the skin and kidneys, Syrup of Squills and Syrup of Ipecac were ordered in doses just sufficient to induce nausea, but not vomiting.

Dec. 31st.—During the past twenty-four hours, has been affected with vomiting; pupils greatly dilated, with dull pain in head, lethargy of intellect and imperfect vision. At times one pupil is dilated and the other contracted.

January 3d.—Vomiting and dilatation of pupils continue.

January 10th.—Patient feels much better than he did a week ago, has ceased to vomit and the pupils are not dilated.

January 13th.—Condition appears to be improved, the œdema has almost entirely disappeared; the lungs also are much less dull upon percussion. The same treatment has been continued up to the present time.

January 24th.—Patient has not been doing so well during the past five days. The cream of tartar mixture has disagreed with his stomach, and it has been necessary to intermit the diuretic. Pupils dilated. œdema of extremities increasing. The cessation of the diuretic medicine has been attended with a marked diminution of urine, only twenty-nine fluid ounces, of low sp. gr. (1010), were excreted during the past twenty-four hours. The amount of albumen in the urine has also increased, and it now reaches one-fourth of the volume in the test-tube, when heat is applied. The bowels were opened by ten grains of the Extract of Rhubarb, and on the following morning the patient appeared to be less lethargic and more cheerful, and the pupils were not so widely dilated.

January 26th.—Patient rested badly during the night; complains of pain in the lower part of the abdomen; pupils of eyes greatly dilated; nervous and restless, oppression in breathing; stomach very irritable, obstinate vomiting whenever the cream of tartar mixture is administered. Four grains of the Iodide of Potassium were substituted, three times a day.

January 28th.—Patient rested badly and was disturbed by frightful dreams. Pupils still more dilated; stomach irritable. œdema increasing.

January 29th.—Rest imperfect and troubled; pupils dilated; patient feels very weak and depressed.

February 1st.—Cough and oppression of breathing increasing; patient weak and depressed and nervous; can retain but little upon his stomach from the nausea and vomiting. It is impossible to administer sufficient medicine to act upon the kidney which secretes not one-half the former amount of urine. The urine is not only diminished in amount, but it is of low sp. gr. (1010) and loaded with albumen and casts. It is evident that the constituents of the urine are but partially eliminated. The warm bath and the hot air bath fulfil the office of the Diuretic Mixture but imperfectly.

February 8th.—The condition of the patient has continued steadily to grow worse, the nervous symptoms increasing and the anasarca in like manner augmenting. Patient very weak, unable to get out of bed, and passes his urine in small quantities and involuntarily. The patient lies in a dull, lethargic state, with pupils widely dilated; as if under the influence of some powerful narcotic poison. Urine scant, and loaded with albumen and urinary casts.

February 9th.—Continues to grow worse, and more feeble; is not able to move in bed without suffering great pain. Has been vomiting almost incessantly during the past twenty-four hours, the fluid ejected resembles milk. Urinary excretion suppressed, bowels constipated, constant hicough.

February 10th.—Vomiting continues, but the matters ejected have changed color being green instead of white. Pupils greatly dilated, muscles of extremities trembling, intellect dull and lethargic when aroused appears to be under the influence of some powerful poison. The slightest touch upon the surface causes pain. The patient continued in this state with vomiting and hicough and suppression of urine, and died February 11th.

The following table presents the changes of the pulse, respiration, and temperature and the amounts of urine.

Pulse, Respiration and Temperature, and amounts and Sp. Gr. in Urine in Case of John Crowley—Bright's Disease.

Date.	Hour of Day.	Pulse.	Respiration.	Temperature of Axilla.	CHARACTER OF URINE.			Date.	Hour of Day.	Pulse.	Respiration.	Temperature of Axilla.	CHARACTER OF URINE.			
					Sp Gr. of Urine.	Albumen and Urinary Casts.	Albumen.						Sp Gr. of Urine.	Albumen.	Albumen.	
1869.	Dec. 9	72	18	98.8	1069	1-5	Albumen.	1870.	Jan. 7	72	17	99.5	50	1008	1-4	Albumen.
	9 a. m.	73	18	101.4	88	1-5	Urinary Casts.		7 a. m.	72	18	99.6	58	1008	1-4	do.
	7 p. m.	73	18	99.4	88	1-5	do		9 a. m.	80	17	99.5	67	1010	1-4	do.
	10 9 a. m.	70	17	99.4	88	1-6	do		9 a. m.	80	17	99.5	58	1010	1-2	do.
	11 9 a. m.	91	18	98.8	111	1-6	do		9 a. m.	84	17	101.	29	1010	1-4	co.
	11 7 p. m.	75	20	99.4	103	1-6	do		6 p. m.	74	18	100.	31	1008	1-4	do.
	12 9 a. m.	88	20	100.2	103	1-6	do		9 a. m.	62	15	100.	31	1008	1-4	do.
	13 9 a. m.	76	19	98.5	103	1-6	do		5.6 p. m.	90	20	100.	37	1010	1-3	do.
	17 9 a. m.	72	17	100.8	65	1-4	do		9 a. m.	80	18	99.	37	1010	1-3	do.
	17 7 p. m.	72	17	99	100	1-4	do		6 p. m.	64	18	99.	36	1010	1-3	do.
	18 a. m.	72	17	100.8	100	1-4	do		9 a. m.	72	19	99.	40	1010	1-2	do.
	18 7 p. m.	72	17	100.8	100	1-4	do		27 9 a. m.	84	19	100.	40	1010	1-2	do.
	20 9 a. m.	80	17	100.5	75	1-4	do		27 6 p. m.	96	20	100.	40	1010	1-2	do.
	20 7 p. m.	99.5	..	100.5	75	1-3	do		28 9 a. m.	80	19	100.	34	1010	1-2	do.
	21 9 a. m.	..	..	100.	68	1-2	do		28 p. m.	80	19	100.	34	1010	1-2	do.
	21 7 p. m.	..	..	99.5	68	1-2	do		29 6 p. m.	84	20	100.	36	1010	1-2	do.
	22 9 a. m.	..	..	99.5	68	1-2	do		30 9 a. m.	90	22	100.	30	1010	1-2	do.
	22 7 p. m.	..	..	99.7	65	1-2	do		31 9 a. m.	84	23	99.	29	1010	1-2	do.
	23 9 a. m.	..	..	99.8	65	1-2	do		Feb. 1	80	19	101.	29	1010	1-2	do.
	23 7 p. m.	..	..	99.8	70	1-2	do		2	84	23	99.	30	1010	1-2	do.
	27 9 a. m.	100	29	100.	70	1-2	do		2 a. m.	84	21	100.	30	1010	1-2	do.
	27 7 p. m.	90	29	100.	50	1-2	do		2 6 p. m.	84	22	99.	30	1010	1-2	do.
	28 9 a. m.	90	29	100.	50	1-2	do		3 9 a. m.	80	22	100.	30	1010	1-2	do.
	28 7 p. m.	95	29	100.5	50	2-3	do		4 9 a. m.	90	24	99.	36	1010	1-2	do.
	29 9 a. m.	90	29	100.5	42	2-3	do		4 6 p. m.	90	24	99.	32	1010	1-2	do.
	29 7 p. m.	90	29	101.	42	2-3	do		5 9 a. m.	90	24	101.	32	1010	1-2	do.
	30 9 a. m.	90	29	101.	32	2-3	do		5 7 p. m.	84	23	101.	34	1008	1-2	do.
	30 7 p. m.	90	29	101.	32	2-3	do		6 9 a. m.	85	22	100.	34	1008	1-2	do.
	31 9 a. m.	90	29	101.	32	2-3	do		6 7 p. m.	90	24	100.	34	1010	1-2	do.
	31 7 p. m.	90	29	101.	32	2-3	do		7 9 a. m.	100	24	100.	34	1010	1-2	do.
1870.	Jan. 3	90	29	99.2	33	2-3	do		7 6 p. m.	100	30	100.	34	1010	1-2	do.
	3 7 p. m.	83	29	99.2	33	1-2	do		8 9 a. m.	115	30	104.	34	1010	1-2	do.
	4 9 a. m.	83	29	99.2	38	1-2	do		8 6 p. m.	98	22	101.	34	1010	1-2	do.
	4 7 p. m.	87	29	99.5	38	1-2	do		9 9 a. m.	102	23	99.	34	1010	1-2	do.
	5 9 a. m.	87	29	99.5	38	1-2	do		9 6 p. m.	102	26	105.	34	1010	1-2	do.
	6 9 a. m.	78	29	99.5	38	1-2	do		10 9 a. m.	84	23	99.	34	1010	1-2	do.
	6 7 p. m.	78	29	99.5	38	1-2	do		11 9 a. m.	96	24	100.	34	1010	1-2	do.

A number of other cases of Bright's Disease have been under observation during our medical service in the Charity Hospital, and careful post-mortem examinations were made in the presence of the Medical Class; and it was observed that the degeneration of the kidneys was frequently associated with fatty degeneration of the liver, heart and arteries. These diseases occur most commonly in the ill-fed and ill-conditioned laborers and drunkards, who consume the alcoholic stimulants undiluted, and to a great extent substitute them for more substantial food. Fatty degeneration, cirrhosis of the liver and Bright's Disease of the kidney, appear therefore to depend in a measure upon similar causes.

It is also worthy of note, that the temperature in this class of diseases, does not rise to the height that it does in phthisis and idiopathic fevers; but still the temperature of the trunk is elevated above that of health, and is also subject to morbid perturbations.

The truth of this observation might be illustrated by numerous observations upon various diseases, recorded under our direction, but these must be deferred for the present.

We will conclude these observations on the different causes of dropsy, with some general observations on the

Treatment of Dropsy arising from Bright's Disease of the Kidneys.

There are so many minute yet important modifications, depending upon constitutional peculiarities, habits of life, and special conditions of age, climate, and inherited or acquired constitutions, that it is difficult to describe in detail, the treatment of any disease; and the attempt is especially difficult in diseases of the kidney. We shall therefore attempt nothing more, than the indication of those general principles of treatment which should be kept at all times clearly in view. The student should ever remember, that no description however minute, will relieve him of the duty of studying each case carefully by the bed-side, and of adapting his remedial agents and measures to the causes of the disease, and the symptoms and the natural or acquired constitution of each patient.

In chronic disease of the kidneys, it is almost always necessary

to continue the plan of treatment persistently for a length of time; and without general principles, only disappointment will result from the frequent change of remedies. In this class of diseases, it is especially necessary that we should not only remove the secondary effects of the diseased action, but also correct, as far as possible, the morbid action of distant organs, and relieve the kidneys as far as possible, by the supplementary function imposed upon them. The supplementary actions of the skin and gastro-intestinal membrane, are of the most important character, and the physician should be careful lest convulsions and coma, and even death may follow the sudden and injudicious arrest of the vomiting and diarrhœa, by which the constituents of the urine are eliminated and cast out of the system. It should be borne in mind also that the effusions in diseases of the kidneys, are not simple in their character as in cardiac and hepatic dropsy, but they contain urea and other constituents of the urine; and the very act of effusion may be a process of purification of the blood. Hence even bandages to the lower extremities should be applied with caution or wholly abandoned, as tending to throw the effusion upon important internal organs; and for the same reason, the recumbent position should not be retained too long, and the patient should take moderate exercise, as by this means the internal organs, and especially the kidneys, are relieved, to a certain extent, from the dropsical effusion.

As the skin and even the lungs may act as supplementary organs to the kidneys, special attention should be paid to the clothing and to the surrounding temperature and hygrometric condition of the atmosphere.

The amount and character of the urinary secretion may also be greatly influenced by *diet*. It is well established that an exclusive diet of meat greatly increases the nitrogenized elements (urea and uric acid etc.) of the urine, whilst an exclusive farinaceous diet greatly diminishes these constituents of the urinary excretion. The importance of attention to the diet is placed in a clear light, when the relations of the retained urea to the nervous phenomena and convulsions characteristic of Bright's Disease are considered.

Alcoholic stimulants, and stimulating diuretics not only in-

duce the disease, but when persisted in, they aggravate the symptoms and accelerate its progress. Alcoholic stimulants should be withdrawn at the earliest possible moment.

In the acute form of Bright's Disease dependent upon the action of cold or the poison of scarlet fever, the bowels should be kept freely open by saline purgatives, and the congestion of the kidneys relieved as far as possible, by cut cups and leeches over the region of the kidneys, and the function of the skin should be freely excited by the warm bath, hot air bath, vapor bath, and warm clothing. As purgatives, the compound jalap powder, or epsom salts, or a combination of carbonate of magnesia and epsom salts (magnes. carb. gr. vi; magnes. sulph. ʒi to ʒiiss; aquæ menth. pip. f. ʒiiss; mix; administer every four or six hours), may be employed. As a general rule, mercurials should be avoided in both acute and chronic Bright's Disease.

The diet should be of the severest antiphlogistic character, composed chiefly of farinaceous substances; for in the acute form, the blood is not sufficiently deteriorated to demand rich nitrogenized food, and but little diet is wanted.

Stimulating diuretics are contra-indicated, and in order to excite the action of the kidneys, and to promote also the absorption of the dropsical effusion, such diuretics as the Acetate of Ammonia, and Bitartrate and Tartrate of Potassa, and the Seltzer and Vichy waters may be employed.

When convulsions and coma supervene in consequence of the retention of the urea in the blood, local depletion by leeches and cupping to the temples, and in some cases general blood-letting, and blisters to the shaven scalp, are in conjunction with the hot bath and brisk purgation with elaterium and brisk hydragogue cathartics the main measures to be instituted.

In the treatment of the chronic form of Bright's Disease, the patient should be required to dress warm, with flannel next the skin, he should occupy a dry and warm dwelling, and avoid all sudden changes of temperature, and all exposure to the night air, or to cold damp weather. When the circumstances will permit of it, the patient should remove to a warm moist climate, for by this change, not only is the function of the skin excited to increased activity, but the changes of the body are less, and the amount of work performed by the kidneys necessarily diminished.

Owing to the constant loss of albumen from the blood, as well as to the poisonous action of the constituents of the urine, it is necessary that the diet should be more nutritious than in the acute form.

The German physicians have claimed important results in the treatment of chronic Bright's Disease, by confining the patients to an exclusive diet of milk, without any medicine whatever. In this plan of treatment, from five to six pints of *good undiluted* cow's milk were administered daily; and some of the patients, who prior to the treatment, had been in the most wretched condition, got rid of their dropsy, recovered an appearance of health, and regained so much of their strength, as to be able to resume their business and even to perform hard labor.

From the active measures should be excluded blood letting and mercurials; and reliance, for the relief of the dropsy especially, and the elimination of the deleterious materials from the blood, should be placed upon the judicious establishment of diaphoresis, diuresis and purgation.

One of the most efficient modes of establishing active diaphoresis, as previously indicated, is by the daily use of the hot bath followed by sweating for one or two hours in woolen blankets.

Stimulating diuretics should be avoided on account of their irritating action on the kidneys; such diuretics as the Tartrate and Bitartrate of Potassa, may be employed persistently for a great length of time and as far as my experience extends, if administered in the manner previously recommended, their action is always attended with benefit and relief of the dropsical symptoms.

Of course, in those cases where the stomach is so irritable that neither the Cream of Tartar nor any other diuretic is borne, there is little or no chance of recovery.

The dropsy may also be controlled, and to a certain extent, relieved, by the judicious employment of such purgatives as Elaterium, Colocynth; Compound Powder of Jalap; Cream of Tartar and Sulphur; Epsom Salts and Glauber Salts.

It should be borne in mind that the duration and results of Bright's Disease, depend upon the extent to which the kidneys have been altered; the most frequent termination being death, caused either directly by the affection of the kidney, or by

intercurrent inflammation; complete recovery may take place, but it is very rare; some cases run their entire course in a period of from six weeks to three months, and in others the malady continues for years. Although in most cases, a cure may not be effected, the physician may accomplish much good by relieving the symptoms and prolonging life.

It is important therefore in a disease of such a chronic nature, that the continual tendency to the deterioration of the blood, should be counteracted by the use of Iron and Quinine, and nutritious diet.

Tabular Summary of Cases treated in Charity Hospital, Service of JOSEPH JONES, M. D., during Fifteen Months, 1st January, 1869, to 1st April, 1870; arranged according to the "Nomenclature of Diseases of the Royal College of Physicians of London."

DISEASES.	Admitted.	Discharged Cured or Relieved.	Died.	Remaining or Transfer'd.
General Diseases.				
Small Pox.....	1	...	1	...
Measles.....	4	4	...	...
Typhoid Fever	3	3	...	...
Yellow Fever	1	1	...	...
Malarial Intermittent Fever.....	103	97	...	6
" Remittent "	12	12	...	...
* " Congestive "	2	...	2	...
Chronic Malarial Poisoning.....	8	8	...	...
Mumps	1	1	...	...
Erysipelas	1	1	...	...
Acute Rheumatism.....	4	3	...	1
Gonorrhœal Rheumatism.....	2	1	...	1
Muscular "	5	5	...	...
Chronic "	32	20	...	12
" Gout	1	...	...	1
Primary Syphilis.....	28	26	...	2
Secondary "	61	45	...	16
Medullary Cancer	2	...	...	2
Epithelial "	1	...	...	1
Osteoid "	2	...	2	...
Scirrhus "	2	...	1	1
Scrofula	6	1	2	3
Scrofulous Ophthalmia	2	2	13	...
Phthisis Pulmonalis	63	34	...	16
Purpura	1	1	...	...
Scurvy	2	2	...	...
Anasarca, effect of action of Malaria.....	2	2	...	...

* The two cases of congestive or perulcious fever were brought into the Hospital comatose and moribund, and died within eighteen hours. Quinine and stimulants had no perceptible effect.

DISEASES.	Admitted.	Discharged Cured or Relieved.	Died.	Remaining or Transfer'd
Local Diseases.				
DISEASES OF THE NERVOUS SYSTEM.				
<i>Diseases of the Brain and its Membranes—</i>				
Meningitis.....	1	...	1	...
Apoplexy.....	1	...	1	...
Sun-stroke.....	2	1	1	...
<i>Diseases of the Spinal Cord and its Membranes—</i>				
Spinal Meningitis	1	1	...	...
Spinal Atrophy.....	1	1	...	...
<i>Diseases of the Nerves—</i>				
Hemiplegia	2	...	...	2
Paraplegia.....	5	1	1	3
Lead Palsy	1	1	...	...
<i>Functional Diseases of the Nervous System—</i>				
Infantile Convulsions.....	1	...	1	...
Epilepsy.....	5	5	...	...
Chorea	1	1	...	...
Facial Neuralgia.....	1	1	...	...
Brow Ague (Hemicrania).....	3	3	...	...
Sciatica	1	1	...	...
Delirium Tremens	5	5	...	...
<i>Disorders of the Intellect, Brain and Spinal Cord.</i>				
Mania ; Dementia and General Paralysis of the Insane	2	...	2	...
Chronic Dementia and Paralysis.....	1	...	...	1
<i>Diseases of the Eye—</i>				
Conjunctivitis	1	1	...	...
Purulent Ophthalmia.....	1	1	...	...
Scrofulous Ophthalmia	1	...	...	1
Gonorrhœal Ophthalmia	2	2	...	...
Opacity of Cornea.....	3	1	...	2
Syphilitic Iritis	3	2	...	1
Scrofulous Iritis	2	...	...	2
Cataract	4	...	...	4
Blindness.....	6	2	...	4
<i>Diseases of the Nose—</i>				
Ozœna.....	1	1	...	...
<i>Diseases of the Ear—</i>				
Otorrhœa.....	1	1	...	...
DISEASES OF THE CIRCULATORY SYSTEM.				
<i>Diseases of the Heart—</i>				
Valve Disease—Mitral	8	3	...	...
Aortic	1	1	...	...
Fibrous Concretion in Cavities of Heart.....	1	...	1	...
<i>Diseases of the Muscular Structures of the Heart</i>				
Hypertrophy and Dilatation.....	6	1	2	3
Dilatation	2	1	1	...
Hyperrophy, Dilatation & Fatty Degeneration	3	1	2	...
Hypertrophy, Dilatation and Valvular Disease.	2	...	1	1
Palpitation and irregular action of Heart.....	2	2	...	...

DISEASES.	Admitted.	Discharged Cured or Relieved.	Died.	Remaining or Transfer'd.
Local Diseases—Continued.				
<i>Diseases of the Bloodvessels—</i>				
Aneurism of Ascending Aorta, Fatty and Calcareous Degeneration and Dilatation of Heart	1	..	1	..
Aneurism of Ascending Aorta.....	1	..	1	..
Aneurism of Ascending Aorta & arch of Aorta	2			2
<i>Diseases of Absorbent System—</i>				
Non-Syphilitic Bubo.....	1	1	..	..
Scrofulous Disease of Glands.....	1	..	..	1
<i>Diseases of the Supra-Renal Capsule—</i>				
Addison's Disease.....	1	..	1	..
DISEASES OF THE RESPIRATORY SYSTEM.				
<i>Diseases of the Trachea and Bronchi—</i>				
Acute Bronchitis	3	3	..	..
Chronic Bronchitis	8	7	1	..
Asthma	1	1	..	..
<i>Diseases of the Lungs—</i>				
Pneumonia	7	7	..	..
Vesicular Emphysema	1	1	..	..
<i>Diseases of the Pleura—</i>				
Chronic Pleurisy	1	1	..	..
Hydrothorax.....	1	1	..	..
DISEASES OF THE DIGESTIVE SYSTEM.				
<i>Diseases of Fauces and Palate—</i>				
Tonsillitis	1	1	..	..
<i>Diseases of the Stomach—</i>				
Dyspepsia.....	1	1	..	..
<i>Diseases of the Intestines—</i>				
Acute Dysentery	4	1	2	1
Acute Diarrhœa.....	3	3	..	..
Chronic Diarrhœa	3	1	..	2
Chronic Dysentery and Diarrhœa	23	6	10	7
Constipation.. ..	1	1	..	..
Hernia	1	1	..	..
<i>Diseases of Rectum and Anus—</i>				
Cancer of the Rectum.....	1	..	1	..
Hæmorrhoids	5	5	..	..
<i>Diseases of the Liver—</i>				
Hepatitis	1	1	..	..
Cirrhosis of Liver with Ascites.....	1	..	1	..
Fatty Liver.....	2	2	..	..
Amyloid Disease of Liver.....	1	1	..	..
Jaundice	2	2	..	..
<i>Diseases of the Spleen—</i>				
Hypertrophy of Spleen.....	1	1	..	..
Leucocythemia.....	1	..	1	..
<i>Diseases of the Peritoneum—</i>				
Peritonitis.. ..	1	1	..	..

DISEASES.	Admitted.	Discharged Cured or Relieved.	Died.	Remaining or Transfer'd
Local Diseases—Continued.				
DISEASES OF THE URINARY SYSTEM.				
<i>Diseases of the Kidney—</i>				
Chronic Bright's Disease.....	7	3	3	1
<i>Diseases of the Bladder—</i>				
Chronic Cystitis.....	1	1	...	...
<i>Diseases of the Male Urethra—</i>				
Stricture.....	2	2	...	...
Urinary Fistula.....	1	...	...	1
DISEASES OF THE GENERATIVE SYSTEM.				
<i>Diseases of the Male Organs of Generation—</i>				
<i>Diseases of the Penis—</i>				
Gonorrhœa.....	6	6	...	...
<i>Diseases of Tunica Vaginalis—</i>				
Hydrocele.....	2	2	...	...
<i>Diseases of Testicle—</i>				
Orchitis.....	4	4	...	...
Enlargement and Induration of Testicles.....	1	1	...	...
<i>Diseases of the Female Organs of Generation—</i>				
<i>Diseases of the Uterus—</i>				
Cancer of Uterus.....	1	1	...	...
Fibrous Tumor of Uterus.....	2	1	1	...
Prolapsus.....	2	1	...	1
<i>Diseases of the Vagina—</i>				
Gonorrhœa.....	5	5	...	...
Vesico-Vaginal Fistula.....	1	1	...	...
Recto-Vaginal Fistula.....	2	1	...	1
<i>Functional Diseases of Female Organs of Generation—</i>				
Amenorrhœa.....	1	1	...	...
<i>Disorders of the Female Generative System—</i>				
Metritis.....	2	2	...	...
Abortion.....	3	3	...	...
DISEASES OF ORGANS OF LOCOMOTION.				
<i>Diseases of Bones—</i>				
Scrofulous Disease of Bones.....	1	1	...	...
Necrosis.....	3	2	...	1
<i>Diseases of Joints—</i>				
Synovitis.....	1	...	...	1
<i>Diseases of the Spine -</i>				
Caries and Necrosis with Curvature.....	1	...	...	1
P-ous and Lumbar Abscess.....	2	1	...	1
Lateral and Anterior Curvature.....	1	...	...	1
DISEASES OF CUTANEOUS SYSTEM.				
Urticaria.....	1	1	...	...
Psoriasis.....	2	2	...	...

DISEASES.	Admitted.	Discharged Cured or Relieved.	Died.	Remaining or Transfer'd
Local Diseases—Continued.				
INJURIES AND ULCERS.				
Burns and Scalds	6	6	...	...
Ulcers.....	17	15	...	2
Amputation for Ulcer of Foot	2	1	...	1
Felon	3	3	...	...
Contusion of Head	3	3	...	...
Scalp Wound of Head	3	3	...	...
Concussion of the Brain	1	1	...	...
Fracture of Rib	1	1	...	...
Contusion of Back.....	1	1	...	...
Sprain of Back.....	1	1	...	...
Contusion of Abdomen	1	1	...	...
Incised Wound of Shoulder	1	1	...	...
Fracture of Acromion Process of Scapula	2	2	...	...
Fracture of Fore Arm	1	1	...	...
Incised Wound of Thigh.....	2	2	...	...
Dislocation of Femur.....	1	...	...	1
Fracture of Femur	1	...	1	...
Gun-shot Wound of Thigh	1	1	...	...
Incised Wound of Leg.....	2	2	...	...
Incised Wound of Knee	1	1	...	...
Contusion of Lower Extremities.....	4	4	...	...
Conditions not necessarily associated with General or Local Diseases.				
Perturbation	14	11	1	2
Still-born	3	...	3	...
Old Age.....	16	...	4	12
Debility	4	4	...	...
Total.....	660	467	67	126

The cases treated, embraced white males, colored males and colored females.

The heaviest mortality occurred amongst the colored females; thus the average mortality in all cases treated, was about ten per cent.; whilst the mortality among the colored females was 17.5 per cent. Nearly one-fifth of all the cases, entered upon the sick reports of the colored females, were primary and secondary syphilis.

The diseases causing death, stand in the following order, according to the rate of mortality, as compared to the whole

number of deaths: Phthisis Pulmonalis, 13 deaths, or 19.4 per cent, of deaths from all causes: Diarrhœa and Dysentery, 12 deaths, or 17.9 per cent. of deaths from all causes; Diseases of the Circulatory System, 9 deaths, or 13.4 per cent. of all deaths; Diseases of the Nervous System, 7 deaths, or 10.4 per cent. of all deaths. These diseases alone caused 41 deaths out of 67; whilst Small Pox, 1; Congestive Fever, 2; Osteoid Cancer, 2; Scirrhus Cancer, 1; Scrofula, 2; Addison's Disease, 1; Chronic Bronchitis, 1; Cancer of Rectum, 1; Cirrhosis of Liver, 1; Leucocythemia, 1; Chronic Bright's Disease, 3; Fibrous Tumor of Uterus, 1; Fracture of Femur, 1; Parturition, 1; Stillborn, 3; Old Age, 4; caused the remainder.

No death occurred amongst the entire number, 123, cases of Intermittent and Remittent fever and chronic Malarial poisoning; and these forms of malarial disease yielded in most cases readily and satisfactorily to treatment. The cases of Pneumonia and Typhoid fever, in like manner recovered.

Post-mortem examinations were instituted in most cases in the presence of the students of the Medical Department, of the University of Louisiana.

Through the kindness of my esteemed friend and colleague, Prof. Frank Hawthorn, M. D., I was enabled also to observe many other interesting cases and post-mortem examinations, and to obtain valuable pathological specimens.

The following catalogue presents a general view of the results of my labors during the past fifteen months, in behalf of the Pathological Museum of the University of Louisiana.

PATOLOGICAL SPECIMENS, *Illustrating various Diseases, prepared by JOSEPH JONES, M. D., during fifteen months service in the Charity Hospital, New Orleans, 1st Jan'y 1869—1st April 1870.*

- | No. | DESCRIPTION OF SPECIMEN. |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.— | Aneurism of left Ventricle of Heart. The aneurismal cavity in the muscular wall of the heart is capable of containing about two fluid ounces, and the walls of the heart have been reduced to a mere membrane, a few lines in thickness. |
| 2.— | Aneurism of Ascending Aorta. Death occurred in the case from rupture of the aneurismal sack within the pericardium. Case XXIV. |
| 3.— | Aneurism of Ascending Aorta and Arch of Aorta. Hypertrophy and dilatation and some fatty degeneration of heart. Death was caused by loss of power in the heart, and by the arrest or interference of respiration, |

caused by the pressure of the aneurismal tumor upon the bronchial tubes and trachea. Case XXVII.

- 4.—Aneurism of Ascending Aorta and Arch of Aorta. Hypertrophy and great dilatation of heart. The lungs, as well as the heart and aneurismal tumor, are preserved in this specimen. Death was caused by the pressure of the aneurismal tumor upon the trachea and bronchial tubes. Case XXVI.
 - 5.—Aneurism of Descending Aorta. The aneurismal tumor presents an hour-glass contraction. Case XXIII.
 - 6.—Vertebræ showing the effects of the aneurismal tumor of the descending aorta, in causing absorption and erosion of the dorsal vertebræ. Case XXIII.
 - 7.—Aneurism of Internal Iliac; pelvic bones preserved; the tumor occupies a larger space than the pelvic cavity; heart and aorta in state of fatty degeneration. Case XXII.
 - 8.—Hypertrophy, dilatation and fatty degeneration of heart; dilatation of arch of aorta; fatty degeneration of arterial system. Case XXIX.
 - 9.—Portion of cirrhotic liver, with thickened capsule from preceding case, XXIX.
 - 10-11.—Dilatation of Heart. The larger heart in the superior portion of the glass jar was taken from the negro woman Case XIX, and the lower heart from negro man. Case XX.
 - 12.—Dilatation, Hypertrophy and Fatty Degeneration of Heart. Case XVII.
 - 13.—Dilatation of Heart.
 - 14.—Calcareous Deposit upon semilunar Valves of Aorta.
 - 15.—Hypertrophy of Heart.
 - 16.—Atrophy of Heart.
 - 17.—Dilatation of Heart and of ascending Aorta.
 - 18.—Hypertrophy and valvular disease of Heart.
 - 19.—Fatty Degenerated Heart.
 - 20-28.—Diseased Hearts, representing Hypertrophy Dilatation, Valvular Disease, Fatty Degeneration and Pericardial Adhesion.
 - 29.—Fibrinous clot formed in Cavities of Heart during life. Patient entered Charity Hospital, January 27th, 1869, with hurried, embarrassed respiration, rapid, irregular pulse, and rapid irregular action of the heart; the action of the heart was tumultuous, irregular and thumping, and the sounds of the right auriculo-ventricular valve, and of the pulmonary semi-lunar valves were muffled and suppressed by the fibrous concretion.
- The peculiar and distressing dyspnœa was not caused by a check of respiration, for the respiratory murmur was audible enough, but by the arrest of the current of the blood in the lungs. The dyspnœa evidently depended upon the imperfect circulation of the blood through the lungs, the damming back of the blood in the venous system, and the imperfect supply of arterial blood to the lungs, muscles and nervous centres. The left side of the heart being imperfectly supplied with blood, the arterial circulation is weakened, the pulse is small and intermittent, and the surface of the body cold, or more correctly, the animal temperature was depressed from the diminished supply of oxygen. At the same time, the arrest of the circulation, in the right or venous heart causes stagnation of the blood in the venous circuit, and this together with imperfect oxidation was manifested in the purple almost black hue of the lips, extremities and cheeks. The patient continued to grow worse; the dyspnœa increased; the action of the heart became more tumultuous and irregular; the restlessness was progressively aggravated; the patient could obtain no rest, night or day; was compelled to maintain the sitting posture, and threw his arms about, and heaved his chest, and incessantly groaned and called for more breath. On the 28th, after eating his dinner, got up from his bed, walked a few steps and fell dead. The large, dense light yellow, firm, irregular shaped fibrinous clot was found firmly attached to the *Carneæ Columnæ* and *Chordæ tendinææ* of

- the right ventricle and extending through the auriculo ventricular opening; it was attached to the valves, and sent off branches which were firmly adherent to the muscular columns of the right auricle, and sent off a long ribbon-like concretion through the pulmonary artery, which divided and sub-divided, and followed the course of the divisions of the pulmonary artery.
- 30.—Fibrin of Blood.
 - 31.—Fibrinous exudation from the surface of Pleura.
 - 32.—Lungs and Heart: Melanotic Deposit in Lungs: thickening of Pericardium.
 - 33.—Miliary Tubercles and Melanotic deposit in Lungs.
 - 34.—Hepaticized Lung of Pneumonia
 - 35.—Abscess of Lungs, with Tubercular deposit.
 - 36.—Indurated (Cirrhosed Lung) effects of Chronic Pneumonia.
 - 37.—Miliary Tubercles in Lungs.
 - 38.—Scrofulous deposit in Lymphatic Glands and Bones.
 - 39.—Tuberculous deposit in Lungs, Liver and Spleen of Monkey.
 - 40.—Tubercles deposited in Lungs and Spleen of Monkey.
 - 41.—Fatty Liver.
 - 42-46.—Fatty Liver and Fatty Kidneys.
 - 47-48.—Cirrhosis of Liver and Spleen.
 - 49.—Tubercular deposits in Liver
 - 50.—Enlarged Spleen of Malarial Fever.
 - 51.—Lobulated Kidney of Russian Bear.
 - 52.—Horse-shoe Kidney. Both Kidneys united by a bridge.
 - 53.—Diseased Kidney and Ureter. Subject had but one large Kidney. The mucous membrane of the pelvis and Ureter was thickened and altered. The Ureter was greatly enlarged, thickened and indurated, being half an inch in diameter.
 - 54.—Fatty Kidneys, Bright's Disease.
 - 55.—Fatty Kidneys, Bright's Disease.
 - 56-59.—Fatty Kidneys, Bright's Disease.
 - 60.—Fatty Kidneys, Bright's Disease.
 - 61-63.—Fatty Kidneys, Bright's Disease.
 - 64.—Diseased Kidney.
 - 65.—Disease of Supra-Renal Capsule of Kidney.
 - 66.—Cancer of Kidney, organ greatly enlarged and infiltrated with cancerous deposit.
 - 67.—Cancer of Testicles.
 - 68.—Cancer of Testicle.
 - 69.—Diseased Intestines, Chronic Diarrhœa and Dysentery.
 - 70.—Inflamed Stomach (Gastritis).
 - 71.—Diseased Intestines, Chronic Diarrhœa and Dysentery.
 - 72.—Ulcerated Intestines of Chronic Diarrhœa and Dysentery.
 - 73.—Perforation, Ulceration and Fibrinous Deposit in Chronic Diarrhœa and Dysentery.
 - 74-76.—Diseased Intestines, Chronic Diarrhœa and Dysentery.
 - 77.—Cancer of Rectum.
 - 78.—Human Fœtus.
 - 79.—Human Fœtus rendered transparent, showing structure and development of the bones.
 - 80.—Placenta
 - 81.—Enlarged and Inflamed Uterus after delivery, death from Puerperal Peritonitis.
 - 82.—Extra Uterine Pregnancy.
 - 83.—Fibrous Tumor of Uterus.
 - 84.—Fibrous Tumor of Uterus.
 - 85.—Fibrous Tumor of Uterus.
 - 86.—Fibrous Tumor of Uterus.
 - 87.—Fibrous Tumor.

- 88.—Fibrous Tumor.
- 89.—Colloid Cancer of Thigh.
- 90.—Fibrous Deposit and thickening of Meninges of Human Brain, (Chronic Meningitis).
- 91.—Fibrous Deposit and thickening of Membranes of Spinal Cord, (Chronic Meningitis).
- 92.—Human Brain.
- 93.—Fractured Femur. The patient, a stout, athletic man, during an attack of Delirium Tremens, jumped out of the second story of the Charity Hospital, and fractured the neck of the femur, and died from the effects of the severe concussion.
- 94-96.—Tibia and Fibula of man who had suffered from Rickets in childhood. The bones are remarkable for their great strength, solidity and density. If the patient outlives rickets and die afterwards, after attaining adult age, it will be found as in this case, that the bones have assumed great weight and density, and in some instances, the cavities of the cylindrical bones are said to have been filled up with earthy matters. In these specimens the cancellated structure of the tibia is very dense and compact, and the medullary cavity of the shaft very nearly obliterated.
- 97.—Ankylosis of knee joint from mechanical injury. Patella firmly consolidated with femur. Tibia and fibula firmly consolidated with each other, and to the femur. Bones present the characters and density of healthy bone.
- 98.—Ankylosis of knee joint; effect of Syphilitic and Rheumatic Inflammation. Patella consolidated with femur, and tibia and fibula consolidated with each other, and the tibia (articulating surface), with the articulating surface of the femur. The bones are light and spongy, and of far less weight relatively than the bones of the ankylosed knee joint, resulting from mechanical injury. (No. 97)
- 99.—Carious Vertebrae. Lateral curvature of Spine in adult man. Death from sudden cause not connected with the disease of the vertebrae, which was of long standing.
- 100.—Cranium of common cat, showing disease of lower jaw bone of the left side. The ramus of the maxillary bone, is thickened and hypertrophied, and presents a ragged plumose outline.
- 101.—Sequestrum from Thigh of confederate soldier.
The following is an outline of this case:
Charles R. Barker. C. S. vols. 7th Reg. La. Vols; height, 5 feet 8 inches; weight in health, 154 lbs; brown hair and eyes; nervous, sanguine temperament. Wounded in right leg at first battle of Manassas, 21st July, 1861. Minie ball struck the lower portion of the right femur, about two inches above its inferior termination, the knee joint. The bone was not fractured; the ball simply buried itself in the femur. The force of the ball must have been greatly spent, otherwise it would have passed entirely through the bone. The wound inflamed, and assumed an unhealthy appearance, and twenty days after the reception of the wound, the thigh was amputated near the middle, or about eight and a half inches from the trochanter major, in the General Hospital at Culpepper Court House, Va. After the operation, the wound did not heal, and the stump assumed an unhealthy, suppurating state. The patient was confined to his bed for more than four months, during which time, there was but little progress in the healing of the wound, the discharge continuing, although there was partial union of the flaps. At the end of this period, the patient attempted to walk on crutches, and on the 20th of February, 1862, whilst the snow covered the ground, went out. This caused the stump to inflame, an accumulation of pus took place around the bone, and the flaps were opened. At this time, large quantities of offensive pus were discharged. The patient was so much reduced by this condition of the stump, that he was compelled to remain in bed, until the first of June. After this date, the wound slowly improved and considerable portions of the flaps united. In December, the patient was able to travel to Georgia, and enter

the General Hospital at Augusta, January 10th, 1863, and at this time came under my treatment. After careful examination, the bone was found to be extensively diseased; and the discharge from several fistulous openings was profuse and foetid. At the time that this patient entered the general hospital, he was in a most weak and feeble condition, and suffered from hectic fever, consequent upon the condition of the stump. The pulse was rapid and feeble, and the complexion dusky and unhealthy. The sloughing went on rapidly, until the bone of the thigh was exposed and denuded. The patient was placed upon the Tartrate of Iron and Potassa, Sulphate of Quinia, generous diet, and stimulants and opiates. Under this treatment, the patient gathered sufficient strength to resume the use of his crutches. After some imprudence, the patient was again prostrated. The bone which was examined daily, finally protruded a little and gave unmistakable evidence that it was detached. On the 24th of May, I placed the patient under the influence of chloroform, and abstracted the bone, $7\frac{1}{2}$ inches in length and extending to the trochanter. I lost sight of this patient, until I found him in the Charity Hospital this winter, just after I had exhibited the diseased bone to the Medical class. The limb healed up entirely, and the patient wears a stump. The periosteum of the bone threw out another bone, and the thigh feels as if it had a large bone.

102.—Superior portion of Femur of an adult male, afflicted with Cancer of the thigh.

The trochanter minor and the shaft of the femur for four inches below, present a rough, hypertrophied, cancellated appearance, with numerous spiculae of bone. The bone is light, and porous very different from healthy bone. The following is an outline of this case: John Morris, male, age twenty-five; height five feet six inches; weight 160 pounds; dark-brown hair; blue eyes; ruddy complexion; native of Norway; seaman; has been subject to rheumatism, three or four years. Had syphilis one year ago. Admitted to Charity Hospital, ward 18, bed 268, March 22d, 1869, with swelling of left thigh, extending to Poupert's ligament, accompanied with pain; says that his leg began to swell two months ago. During a period of two months before the swelling commenced, the patient had been standing in the water, whilst surveying on the coast. As the patient presented the appearance of a cutaneous eruption which was supposed to be syphilitic, he was placed upon Iodide of Potassium and Bin-Iodide of Mercury. The eruption disappeared, and the general health improved under the use of these alteratives, and the skin affection disappeared; but the swelling of the thigh, which presented a hard, nodulated feeling like a collection of lymphatic glands, continued to increase. The local application of Tincture of Iodine and Iodine Ointment, neither relieved the pain nor arrested the progress of the tumor. The pain was so intense that it was necessary to administer opiates freely at bed time. The following are the changes of the pulse and temperature:

April 2d.—Complains of sharp lancinating pains in right shoulder and left thigh, and knee. Pulse 100; respiration 25.

April 6th.—Complains of continuous pains during the night in left leg. The patient locates the pain in the bone of the leg. Bowels loose. Pulse 100, respiration 32.

April 15th.—As the case did not yield to ordinary measures, I called a consultation and it was decided to plunge an exploring needle into the tumor. When this operation was performed, nothing but bloody serum to the extent of one or two pints issued.

May 12th.—Pulse 100; respiration 28; temperature of axilla 100° F.

May 14 —Pulse 100; resp. 25; temp. hand 97.25° F; temp. axilla 100° 5

“ 15 “ 100 “ 25 “ “ 96.5 “ “ 100° 75

“ 16 “ 100 “ 58 “ “ 100° 5

“ 17 “ 100 “ 27 “ “ 100° 20

“ 19 “ 100 temperature of axilla 99.75° .

May 29th.—Pulse 100; respiration 26; temperature of axilla 100.

May 31st.—Pulse 102; temperature of axilla 102.

June 4th.—Pulse 130; respiration 35; temperature of axilla 101.5°.

June 6th.—Pulse 105; temperature of axilla 100°.

During an attack of illness with which I suffered in July, the wound was freely probed and lanced. Suppuration of the structures of the thigh took place, the bowels became loose, the patient became restless and feverish, and was bathed in profuse clammy sweats, and finally died about the middle of July, in a greatly emaciated condition. Upon post-mortem examination a colloid cancer in a state of destruction and gangrene surrounded the upper third of the femur.

103.—Femur of adult female who died from cancer of the thigh. The trochanter minor and shaft of the bone for four and a half inches is hypertrophied and roughened, and has shot out wing-like projections and elongated spiculæ. These spiculæ are most numerous, forming a porous cancellated structure, upon the posterior surface of the femur, and the roughness extends down, in a line, half an inch broad on the posterior aspect of the bone, within two inches of the lower extremity of the femur. The bone is light, porous and unlike the bones in health.

The following is an outline of this interesting case:

Cordelia Hamilton, colored; aged 47 years; field hand and cook; native of Kentucky; was admitted to ward 34, Charity Hospital, July, 1869. Patient says that up to July, 1868, one year ago, her health had been good. At that time, she noticed a swelling in her right thigh about the middle third; but this did not give her much pain, or interfere with her duties for several months. The swelling increased, with lancinating pains, and occasional loss of sleep at night. Patient was never married, never had any children, and the mammæ were not developed at all. Height, 4 feet, 7 inches. On admission, the patient was somewhat emaciated, apparently feeble, and was too weak to stand up long at a time, and was unable to walk without crutches. The right thigh was very much enlarged, and felt warmer than the left and the leg below. The pulse was about 95 per minute. Some disturbance in action of heart referred to pericardial effusion. Respiration normal. Patient suffered with a cough which sometimes gave trouble at night. Temperature under axilla, 100°. Appetite poor, bowels torpid, skin moderately cool, except over the affected thigh. The thigh felt nodulated and hardened, and the disease was pronounced to be a malignant growth surrounding and involving the bone. Exploration with trochar gave no evidence of pus. The right thigh continued to enlarge, and the knee and leg became œdematus. On the 18th of August, the right thigh measured at knee, 16½ inches in circumference, at middle, 25 inches, at junction with trunk, 22 inches; the sound left thigh measured at knee, 11 inches, at middle, 12 inches, and at the junction with trunk, 12 inches. The following are the observations on the pulse, respiration and temperature upon the four days preceding death:

Aug. 25, 9 A. M.—Pulse 96; respiration, 16; Temp. axilla, 101° 2

“ 6 P. M.— “ 96; “ 16; “ “ 100° 5

Aug. 26, 9 A. M.— “ 88; “ 16; “ “ 99° 5

“ 6 P. M.— “ 86; “ 16; “ “ 101° 2

Aug. 27, 9 A. M.— “ 88; “ 16; “ “ 100° 5

“ 6 P. M.— “ 85; “ 16; “ “ 100° 5

Aug. 28, 9 A. M.— “ 88; “ 15; “ “ 99° 5

“ 6 P. M.— “ 86; “ 15; “ “ 100° 0

Died August 29th. The forces gradually gave way without any marked symptoms. Before death the emaciation had been extreme.

The following are the results of the post-mortem examination:

Exterior. Great emaciation. No mammary development upon chest. Right thigh greatly enlarged; left a mere shadow; the bone with the skin and thin layer of muscles.

Chest. No adhesions. Lungs emphysematous. Pericardium contained considerable fluid.

Abdomen. Peritoneum very thin ; sigmoid flexure greatly distended with gas ; small intestines greatly contracted and anæmic.

Liver friable, and on its convex surface a small circumscribed abscess. Kidneys lobulated and contained cysts and small abscesses. Generative apparatus poorly developed. The abdominal aorta and its branches, presented appearances of calcareous degeneration. The blood was remarkably thin.

The right thigh was carefully dissected. A large encephaloid cancer involved the muscular structures of the thigh and surrounded the bone, and numerous osseous spiculæ extended from the femur into the cancerous mass. Under the microscope the tumor was found to consist of cancer cells, fibrous tissue, oil globules and granular masses. At one portion near the head of the femur, the tumor was undergoing softening, and this portion was loaded with granular matter.

104.—Skleton of adult female, 24 years of age, exhibiting the effects and ravages of constitutional and inherited syphilis.

I observed this unfortunate woman, in the Charity Hospital, only a day or two before her death. At the time of my observation, she appeared to be exceedingly feeble and was a mass of offensive running sores. I obtained the body after death, and had the skeleton carefully prepared. The hymen was perfect, and the disease appeared to have been derived from inheritance, and to have manifested itself in early childhood. The feet are very small—not much larger than those of a child four years old, and appear never to have been used in walking. All the long bones of the body were more or less carious, and in almost every case were fractured or rather ulcerated through at one or more places. The pelvic bones were carious and the os-sacrum a mere shell. The vertebræ were all carious. The upper jaw contained one small tooth and the lower jaw three teeth. The alveolæ were completely absorbed. The outer and inner tables of the skull were perforated in several different places. The lower jaw on the right side was eroded through. The position of these fractures or erosions, were marked during life by open running sores.

It is impossible with the pen to portray adequately the terrible condition of this unfortunate female, whose bones literally rotted piece-meal by piece-meal during life. And the best description which we can give of the skeleton is to say that the bones of the feet, ankle, the os calcis were carious; the tibia and fibula; the femur; the pelvic bones; the os-sacrum the radius and ulna; the humerus; the scapulæ and sternum; the lower jaw and the cranium, were all eroded through in various places.

In the clinical report of the cases, and in the record of the temperature, pulse and respiration, during the term of Hospital Service, I have received valuable assistance from members of the Medical Class, amongst whom it gives me pleasure to mention honorably for their attention and courtesy; Messrs. W. P. Adkins*, of Texas; Henry Bezou, La.; Rollin T. Burr*, Ala.; S. T. Birdsong*, Miss.; Benj. H. Baldwin*, Texas; S. R. Blakewood*. La.; Wm. H. Cunningham, Ga.; D. A. Cook*, Texas; L. S. McCrindell, La.; Geo. N. Monette, Miss.; E. N. Potts*, B. F.

* NOTE—Now, M. D.

Rogers, La.; D. W. Ramsay*, Ala.; R. F. Wright*, La.; H. M. Longino*, La.; J. M. Hooper*, Miss.; J. M. McFarland*; F. H. Tucker*; L. C. Cheek*, Miss.; J. D. Terrell*; J. D. Beck*; H. McDonnell*; R. B. Carson*; W. G. McInnis*; W. C. Moody*; R. G. Williams*; S. M. Jordan*. My thanks are also due to Dr. Jno. M. Cullen, of this city, for valuable assistance in the preservation of the pathological specimens.

The Yellow Fever, Sanitary Condition, and Vital Statistics of New Orleans during its military occupation, the four years 1862-5.

Article No. II. By STANFORD E. CHAILLÉ, A. M., M. D. Prof. Physiology, and Path. Anat., Medical Department, Univ. of La.

“ Il faut modifier la théorie pour l'adapter à la nature, et non la nature pour l'adapter à la théorie.”—CLAUDE BERNARD.

THE military occupation of this city was characterized by three exceptional facts; the absence of epidemics, notwithstanding the annual presence of Yellow Fever, and of an unusually large number of the unacclimated; the existence of a Quarantine, more perfect than civil authority can possibly effect, and so perfect that an able advocate (Dr. Elisha Harris, U. S. San. Com., 1865, Supt. N. Y. Met. Board Health, 1870,) says, “by the exercise of absolute and relentless military authority, an *impregnable* system of Quarantine was maintained;” and the enforcement of “excellent sanitary regulations” by an efficient sanitary police, so efficient, says the same advocate, that “so clean a city had never before been seen upon the continent.” It is not singular that the co-existence of these three exceptional facts should have produced a deep impression upon the minds of the officers, by whom the Quarantine and scavenging were enforced; of the medical profession which in part has advocated the former, and unanimously the latter; and of the public which enjoyed an unusual exemption from the scourge. The first and last of these are convinced that the unusual Quarantine and cleanliness were the unquestionable causes of the unusual exemption from Yellow

* Now M. D.

Fever epidemics, and eoneur with General Butler, who on December 24th, 1862, after seven and a half months' rule, recounts in his "Farewell address to the Citizens," very many benefits conferred on them, and among these "I have demonstrated that the pestilence can be kept from your borders." Parton, the enthusiastic biographer, devotes pages to the illustration of this noble deed of the "Hero of New Orleans." General Banks, his successor, entertained the same views, and the U. S. Provost-Marshal of New Orleans, General James Bowen, writes in 1865, that "from a careful observation during two years in New Orleans, I am satisfied that it was only by the vigorous exercise of military power in the enforcement of the sanitary regulations, that the city was exempt from the yellow fever; and that with the usual lax administration of such laws by civil authority, the city will again be subject to its visitation."

The medical profession has been divided in its views. Many physicians coincide with the military and popular opinion; among these are Drs. E. Harris (U. S. San'y Com., Memoirs, 1867), E. D. Fenner (N. O. So. Jour. Med. Sciences, May, 1866), A. Flint (Pract. Med., 1866), and M. Clymer (Am. Ed. Aitken's Practice, 1868). It is believed that much the larger number of the old resident physicians of New Orleans oppose the opinion so generally accepted; among these are Dr. J. C. Faget, (Report of 1864 as a member of a "Consultative Commission" appointed by General Banks), the author of an able editorial (Nov. No. 1866 So. Jour. Med. Science), and he, whose professional opinion is more potent in this community than any other's, and who has for nearly forty years served in the Charity Hospital, and annually observed the yellow fever of New Orleans, Prof. Warren Stone (published lecture in New York, 1867). The question is important, and requires for its decision a fair consideration of all the facts known as to yellow fever here during the war. To appreciate even these, other facts are needed, which shall now preface the former.

Facts referring chiefly to population, 1862-1865.

Louisiana seceded from the United States January 26th, 1861, and aided to form the "Provisional Government of the Confederate States," February 8th, 1861. From this time to May 1862, thousands

of the citizens, with musket in hand, were scattered from the Rio Grande to the Potomac; many found a last home from Bull Run to Shiloh, and in the city there was an endless coming and going of brother soldiers. Commodore Farragut's fleet (U. S. N.) arrived in front of New Orleans, April 25th, 1862, and on May 1st, Gen'l Butler, U. S. A., with some 15,000 soldiers took military possession of the city, whose civil population was diminished by the thousands of citizens who had abandoned it. On December 16th, 1862, Butler was relieved by Gen'l Banks, who was succeeded by Gen'l Canby, in May, 1864. Civil replaced military government March 19th, 1866. The military Board of Health extended its mortuary records of the civil population from November 1862, to May 20th, 1866. The war had been virtually terminated by the surrenders of Gen'l Lee, April 9th, Johnston, April 26th, Taylor, May 4th, and Kirby Smith, May 26th, 1865. Succeeding these surrenders, thousands of Confederate soldiers and refugees, and many freedmen flocked to the city, giving it during the balance of 1865 the largest civil population it had ever contained. There was now some relaxation, probably, in the enforcement of Quarantine, and certainly some in the vigorous execution of scavenging and sanitary regulations.

The facts given indicate that the civil population was at its minimum in 1862, and its maximum in 1865. The general opinion of intelligent citizens who remained in New Orleans is that the population was much diminished from May 1862, to May 1865. Dr. Harris, in July, 1865, estimated that then "the total population, including the permanent or the transient military forces, was little less than 200,000." Dr. J. J. Woodward, U. S. A. Surgeon General's Office, writes: "As to the civil population of New Orleans during the period referred to, I have myself no doubt at all that, the army of camp followers, sutlers, traders, etc., far exceeded the number of fugitives, and should not be surprised if, in fact, the civil population were shown to be really larger than before the war, but I know of no reliable reports bearing on the case."

The United States census, 1860, estimated the population at 168,675, which fact associated with the considerations above

given satisfy me that the civil population varied from about 150,000 in 1862 to 185,000 in 1865, or say for the four years 660,000. It is quite certain it did not exceed 200,000 per annum, or 800,000 for the four years. For the benefit of the death rate of new Orleans, let the above figures be accepted as the extremes, and let full estimates be assigned for statistical purposes, as follows: Total civil population of New Orleans, 160,000 for 1862; 170,000 for 1863; 180,000 for 1864, and 200,000 for 1865. It certainly cannot be complained that these figures under-estimate the facts.

Facts as to yellow fever in New Orleans prior to 1862.

During sixty-five years, viz., from the first yellow fever epidemic in 1796, (seventy-eight years after the foundation of the city), to 1862, there occurred about thirty-five epidemics, some too slight to deserve the epithet; however, of these thirty-five, not less than eleven were violent, and the one of 1853 was so exceptionally terrible as to have well deserved its characteristic designation, "The Great Epidemic." This, though supposed at the time to have exhausted the unacclimated material on hand, was nevertheless followed by the epidemics of 1854 and 1855, each of which caused a mortality which brought them in rank with their vilest predecessors, except 1853. Two years exemption was followed by the epidemic of 1858, which in this evil comparison attained an eminence never surpassed to the present day, except by 1853. Thus then, the six years, 1853-58, and more especially the three successive years, 1853-4-5, constitute a culminating epoch in the yellow fever and mortality history of this city, from its foundation to the present day;—and, for subsequent use, it is important to insist on the fact, that in the entire history of New Orleans, no three successive years can be found at all comparable in fatality with those mentioned.

Though epidemics occurred in about one half only of the sixty-five years, yet it is probable that there were some cases of yellow fever every year, and it is certain that such was the case from 1840 to 1861. Though averaging one epidemic every two years, yet their recurrence was so irregular that several intervals of exemption occurred, of as much as three, four and even five years, viz: 1805-8, 1813-16, 1844-6, 1848-52, for the slight mortality in 1848 and 1849 scarcely justifies the designation of epidemics;

and to this list must be added the three last of these sixty-five years, those three which immediately preceded the military occupation of the city. During these the yellow fever mortality was less than for any other three successive years of which we have authentic reports, viz: 91 deaths in 1859, 15 in 1860, and none in 1861.

In many past years, the first cases of yellow fever have been traced to the shipping, and in many others there has been as complete proof, as such negative proposition admits of, that there was no such connection, nor other reason to assign the origin of the disease to contagion, or other mode of foreign importation. During the thirty-five years since 1843, an epidemic has never occurred when the first case was later than the month of June; I believe this would hold good for the whole time since 1796. The only apparent exception, I have found, is for the severe epidemic of 1822, in which there was uncertainty as to the date of the first cases, but it was certainly "as early as the beginning or middle of July." First cases have appeared as early as June without being followed by epidemics.

The first Quarantine established was maintained only four years, 1821-4, having been abandoned early in 1825 from the general conviction that it had proved worse than useless, for yellow fever was present every year, and to the extent of a very violent epidemic in 1822, and an epidemic in 1824. After thirty years discontinuance, the Quarantine was re-established in March, 1855, and is still enforced. Very violent epidemics occurred in 1855, 1858, and 1867, and excepting perhaps the year 1861, there have been cases of yellow fever every every year of the existence of the present Quarantine.

Thus including the whole time, seventy-three years, from 1796 to 1870, there have been nineteen years with Quarantine. During these, there have been cases of yellow fever every year (1861 perhaps to be excepted), and there have been five epidemics of which four were very violent. Now with these facts as to epidemics and Quarantine, let there be associated another fact so notorious as to require no proof, that the sanitary condition of New Orleans for the whole time, excepting the four years 1862-5, has been one long, disgusting story of stagnant drainage, foul sewer-

age, environing swamps, ill- and un-paved streets, no sanitary regulations, and filth, endless filth every where. An official description of this notorious and habitual filth will be found on a subsequent page. There has been no improvement since the war in these matters, which could never have been worse than in 1868 and in 1869. This year, 1870, has brought a little hope, small as a babe, may it grow as well!

A logical mind, which, cautious as to facts, is yet self-sufficient enough to judge for itself, and which analyzes the motives and reasons for the decisions of the multitude, knows well how fear exaggerates facts, and hope jumps at conclusions, and will not be surprised, after reading the above brief record of the epidemics of sixty-five years, that the hostile population of New Orleans, so greatly scourged by yellow fever, should have confidently anticipated that if the enemy should take New Orleans, the yellow fever would take the enemy. Nor is it surprising, that the U. S. authorities should have shared these anticipations, and that all should have attributed the non-realization of them to the only exceptional conditions known to and comprehensible by them, viz; the rigid enforcement of Quarantine and of Sanitary Regulations. Is it necessary to warn, that conclusions originating in hopes and fears, and founded on insufficient premises are not trustworthy?

THEORIES OF YELLOW FEVER.

Some prefatory remarks on this subject should precede the record of 1862-5; in order that each reader may judge for himself, which theory the evidence favors. The various opinions entertained by the profession may be summarized under three heads, with a fourth for numerous modifications of the three.

1. Yellow fever is communicable by both person and fomites, *i. e.*,—is both contagious and portable, as is small-pox.
2. Yellow fever is communicable by fomites, but not by person, *i. e.*,—is portable but not contagious.
3. Yellow fever is not communicable either by person or fomites, *i. e.*,—it, like malarial fever, is neither contagious nor portable; and attacks those only who are exposed, to the *places* (never the person) where the poison is.

4. Yellow fever is produced by two different poisons;—or by one which causes different results, depending on the place where it is generated, the quantity produced, and the different conditions of those poisoned. Thus, the poison is sometimes either contagious or portable, or both, and at other times is not. To illustrate, some physicians in New Orleans who have favored contagion and Quarantine, and yet been forced to acknowledge that the disease originates here, have contended that only foreign yellow fever ever caused epidemics, and that the domestic poison never manifested itself except endemically and sporadically. This fourth theory or theories embrace La Roche's "contingent contagionists."

In considering these theories, it is well to recall that there are many medical questions in regard to which, the evidence is too contradictory, and the premises are insufficient to justify an absolute conclusion; and that it has been said, well if not always truly, that "when two physicians quarrel over their opinions, there is in the midst of their contradictory arguments but one thing certain, which is that their theories are insufficient to account for all the facts, and that neither represents the whole truth."

Unbiased minds are now properly prepared, as I think, not only to receive, but also to judge, each for itself, the facts which follow:

YELLOW FEVER IN NEW ORLEANS, 1862-65.

1862. No evidence of the existence of the disease has been found in the official records, which however are defective from July to November. Dr. E. D. Fenner says (May No. 1866, Southern Jour. Med. Sciences): "I myself saw a fatal case of yellow fever near St. Mary's Market, in July, 1862, that was imported from Key West, Florida. There may have been others which have not been brought to light, for every effort was made to ignore the existence of yellow fever in the city, to prevent panic among the soldiers." The editorial in the November No., 1866, So. Jour. Med. Sciences, says: "On the 12th of September, 1862, we saw, with our own eyes, as malignant a case of the disease near the St. Mary's Market, as we ever beheld. It was characterized by black vomit, hæmorrhage, etc. The subject was a robust man

from New York, who had arrived here recently on a tug-boat from that city, the boat having laid in the harbor of Nassau [in the British Bahama Island of New Providence,] at which place the disease was for the first time prevailing, four days, and this man having gone ashore more than once. He died on the fourth day of his illness. He was attended by unacclimated persons male and female, and we made it our business to watch the neighborhood until October 1st following, but up to that date no new cases appeared." There is then ample proof of the existence of imported cases of yellow fever in New Orleans in 1862, and of the non-extension of the disease to any observable degree.

1863. The official records of the civil population, report only two deaths by yellow fever in 1863, occurring in the two weeks September 6th—20th. Dr Harris writes (no doubt as to the same cases), that two well marked and fatal cases occurred in the autumn of 1863, and were received in the Charity Hospital, both were boat hands from a river tug. "Nearly one hundred cases of the fever occurred in the river fleet and in the *Naval Hospital that season. The history of all these cases in detail shows that they were not of imported origin. They nearly all occurred in crowded, filthy and unventilated gunboats that were at anchor in the river at New Orleans." The Quarantine officer (Dr. Baldwin), reported at the Quarantine, about sixty-five miles below the city, three of the river fleet sent down from New Orleans with twenty-three cases of yellow fever, of which nine died (September 22d, to October 20th); and on July 4th, 1863, the Spanish man-of war Pizarro from Havana was ordered into Quarantine while on the way up the river. There were fifteen cases of yellow fever on board.

* The Naval Hospital occupied "a large pile of old buildings," located one square from the river levee, and between New Levee, Tchoupitoulas, and Erato streets. The "Sailors' Home," located in the same place, has interest for the epidemic of 1867; and Girod street, a few squares lower down the river than Erato street, was the chief scene of the cases which occurred in 1857. The "St Mary's Market," which has been referred to for 1862, is between New Levee, Tchoupitoulas and St. Mary's streets, (the last is about three-quarters of a mile above Erato street.) Lake Pontchartrain and the "Basin" are to be referred to: The Lake is north of New Orleans, and four and a half to seven and a half miles distant from the various parts of the seven miles of river upon which the city fronts. There are two "Basins," each a terminus in the rear of the city of the two canals which extend to the Lake. One is about three-quarters of a mile from the river and from the Naval Hospital; the other is about half a mile from the river, and one and a half miles from the Naval Hospital.

† Dr. J. J. Woodward, "Circular No. 1, Surgeon-General's Office, 1868," gives this date as July 4th, 1864. The report of the Quarantine Officer and of Dr. Harris indicate positively the date given in the text.

Dr. Harris says that, from July 4th, 1863, to September 10th, 1865, the Pizarro was the *only* vessel at Quarantine which brought yellow fever from any other place than from New Orleans.

1864.—The official records report six deaths by yellow fever of citizens; the first occurring during the week September 26th--October 2d, and the last, December 12th--18th. One of these six deaths occurred October 19th, in the Charity Hospital, from which was discharged, November 29th, the second and only other case which entered this hospital. There is then a total of seven cases with six deaths officially reported for 1864. It is no doubt to five of these six deaths that Dr. Harris thus refers: "In 1864 there were five undoubted and fatal cases of yellow fever, terminating in black vomit." They "occurred in persons who resided or daily visited in the vicinity of" the Naval Hospital. "They were exposed to known causes of the fever. Other cases may have occurred; if so, they have eluded all search. A few lines below he rather singularly adds, "* * * the five cases occurred outside of the hospital premises. Other cases occurred, but they were directly dependent on intercourse with the infected vessels, and the bedding brought from those vessels."

The above account of yellow fever among the citizens of New Orleans in 1864 might no doubt be enlarged by research even now, but sufficient has been given to prove all which greater research could prove, viz., that in spite of an "impregnable Quarantine" and an "efficient sanitary police," yellow fever *existed*, but did not become an epidemic, nor extend to any notable degree. One additional fact, as to the six deaths in this year, should be borne in mind, as applicable to all years. So many deaths by yellow fever seldom indicate less than three times as many cases, and generally more; and that in many years, as is well known, civil physicians have rendered themselves liable to Dr. Fenner's criticism of the military authorities, in 1862 "every effort was made to ignore the existence of yellow fever in the city, to prevent panic."

What may be termed the naval history of yellow fever in New Orleans in 1864 is much more important than the above civil history, much of its interest is due to the facts, that it supplies the best evidence probably ever given or attainable; 1st, that

an "impregnable Quarantine" enforced by "rigid and relentless military authority," and the absence of any discoverable source of importation, did not avail to keep the disease out of New Orleans; and, 2d, that it originated in New Orleans in 1864, just as the majority of our physicians, having a long practical experience, have constantly maintained that it did in other years.

The three following statements deserve consideration :

1. "The official usages and the armed discipline of the naval fleet in the harbor of New Orleans and upon the river, enabled the medical officers to trace to its source every case of yellow fever that occurred in the gunboats."

2. "The infected vessels were under an armed surveillance and discipline," and "no communication with infected vessels was allowed." (It is observed of two only of the twenty-five vessels, to be referred to, that free communication with infected vessels or the shore did occur).

3. No infected vessel from a foreign port arrived even at Quarantine.

Now, notwithstanding all this, twenty-five vessels, iron clad gunboats, etc., were attacked with yellow fever. More than 200 cases, of which fifty-seven died, contracted the disease on board. Many of these cases were removed to the Naval Hospital, where thirteen persons are specified as being on duty, (there were doubtless more) of whom twelve were attacked, and three died. Thus a total is given of more than 212 cases, and certainly not less than sixty deaths. Of the thirteen cases contracting the disease at the Naval Hospital, five were in a guard of six soldiers, of which one died. Of the many United States soldiers in New Orleans in 1864, there were probably more cases and deaths than in these six; but unfortunately I have not been able to procure any reports of the army, so as to enable me to complete the civil and naval history of yellow fever in New Orleans in 1864 with its military history. In alluding to this defect, I will close the list of omissions to be regretted: these are the failure to state what was the total number of vessels of which the twenty-five were a part; what the number of the unacclimated exposed on board of these twenty-five to the poison infecting them; and

whether those on duty at the Naval Hospital, and attacked there had certainly not been on board of any of the infected vessels.

Of the twenty-five vessels, two were tin clads in the Lake Pontchartrain police service, and one was a sloop from the Lake (probably a trader) "lying in the Basin, tied up alongside of the wharf." This sloop had free communication with the shore. The other two were certainly not less than four miles distant from, and had no communication with the river or city. The first case on these three vessels occurred September 23d, in the "Fort Gaines, a tin clad in the lake police service." The remaining twenty-two vessels were in the river service. Four were in what may be comparatively termed, active service, two tug boats, and two "steamers," running between New Orleans and the blockading fleet off the Texas coast. The eighteen others were moored at the wharves, or at anchor in front of the city,—one, however, was two miles below the city, from whence it had not moved for a year, whilst a second "laid probably three and a quarter miles farther up the stream than most of the others." The river fronts the city for about seven miles, and "most of the others" seem to have been near the Naval Hospital.

The first of all the cases known in 1864, occurred on September 12th, and the last death was on December 18th. The first case occurred on the "Meteor," which came from the "Head of the Passes" of the Mississippi River, ninety five miles below the city. She had been at anchor at New Orleans some two months. The next two cases occurred on September 21st, one in the "Portsmouth" which "had been lying at anchor before the city for two years; no communication with infected vessels allowed; has visited no other port since leaving Portsmouth, New Hampshire:" the other in the ordnance ship "Fear Not," which had had yellow fever badly in 1863, but had not moved for a year from where she then was "lying two miles below the city." The fourth case recorded was on Lake Pontchartrain, as above mentioned. The fifth case was the first on the four vessels referred to as being in more active service, and occurred September 24th, on the steamer "Arkansas" which had been lying in the river, at the foot of Erato street, for about three weeks before the outbreak of the fever, and had been running between New Orleans

and the Texas blockading fleet. After September 26th, forty cases with fourteen deaths (included in the totals given), occurred on the "Arkansas," during a trip of twelve days from New Orleans to the fleet, and back to the Quarantine station. A sixth case of interest is recorded, as occurring September 26th, on the ironclad "Tennessee" which was captured August 5th 1864, in Mobile Bay, and brought to New Orleans. [Dr. Fenner says that "at Mobile, where we remained during the summers of 1863 and 1864, there were no unquestionable cases of yellow fever"] It was manned from various healthy vessels of the fleet. "The first man taken sick was a negro, native of New Jersey, who had not been on shore since he left New York."

It is said of these twenty five vessels generally, that they were remarkably close in their exterior construction, hot, filthy, ill-ventilated and overcrowded "gunboats and other vessels lying idly at anchor within a mile from the densest portions of the city." It is also asserted "that vessels and river boats of ordinary construction and in active service escaped yellow fever almost without exception." Of one hundred and twenty active steamers and sailing vessels under the control of the quarter master in charge of water transportation, "only one had yellow fever on board;" these were "open, ventilated, and moving briskly about from place to place, yet infinitely more exposed to all sources of exotic infection." In connection with these statements, should be recalled that which has been reported of seven of the twenty-five vessels, in active service comparatively to the other eighteen. Three of the seven were not in the Mississippi river, and had sixteen cases of which four died; the other four were in the river, and had sixty-one cases of which twenty-five died.

The preceding Naval History is only an abbreviated account of Dr. Harris' details, which account contains, it is believed, every fact of any importance, and completes the history of yellow fever in New Orleans so far as I have been enabled to gather the facts.

1865. Only one death by yellow fever is officially recorded. It occurred in the week August 20th—27th.

The details of the sanitary history of New Orleans for the five years, 1866-1870, will be given in a subsequent article, however, the following facts in reference to yellow fever and other epidemics, have an interest in connection with the present subject.

1866. There were 192 deaths by yellow fever, of which 93 occurred in the Charity Hospital out of 130 cases; and 97 of the 192 died in the month of October. The first case occurred August 9th. On July 14th, the cholera, prevailing in Europe and America, appeared, causing 1294 deaths, of which 998 occurred in the months of August and September. There were 188 deaths by variola and varioloid. The total deaths were 7754.

1867. There were 3107 deaths by yellow fever, a greater mortality than by any preceding epidemics, except those of 1853 and 1858. Of 1493 cases in the Charity Hospital, 672 died. Of the 3107 deaths, 2709 occurred in the months of September and October. The first case sickened on the 5th and died on the 10th of June. There were 581 deaths of cholera, and 444 of these in November and December. There were 47 deaths of variola and varioloid. The total mortality was 10,096.

1868. There were 5 deaths only by yellow fever. These are recorded as having occurred in the Charity Hospital, where there was a total of eight cases. There were 129 deaths by cholera, of which 120 occurred in January. Variola and varioloid caused 14 deaths. The first official annual statement published is in the April No. 1870 of this Journal, and reports a total mortality of 5343, which indicates the smallest death rate which has occurred since 1845.

1869. There were only 3 deaths by yellow fever. One of these occurred in the Charity Hospital where there were three cases. Cholera has disappeared since January 1868 to the present time. Variola and varioloid caused 141 deaths, of which 122 were in November and December; these diseases have continued to date (June 1870), causing a monthly mortality of from 56 to 122, and a total mortality for the five months of 446, more than three-fourths of which has been of negroes. The total mortality for the year 1869 was 6001; indicating a gain a small death rate for New Orleans.

MORTALITY IN NEW ORLEANS BY ALL DISEASES, DURING THE
FOUR YEARS 1862-65.

I owe to the official courtesy of Surgeon General J. K. Barnes, U. S. A., and to the personal kindness of his aid, Brevet. Lt. Colonel, J. J. Woodward, U. S. A., the weekly reports of the civil population as recorded by the Military Board of Health, from November 1862, to May 20th, 1866. For the remaining ten months of 1862, I have procured from data at the Board of Health's office, and in the daily papers, reliable reports for the first six months, whilst for the remaining four months, July—October, no records have been found which justify anything more than an approximative estimate (from total deaths of thirty-five weeks known) of 6278 as the total mortality for the year. If there be an error in this, it inclines to an under, rather than an over estimation. The official records furnish, with as much precision as usual, the total civil mortality of the three years, 1863-65. From all the facts the following table has been constructed :

ADDENDUM TO TABLE No. 1. (See N. O. Journal of Medicine, Jan'y 1870.)

Years.	Total Population Estimated.	Total Deaths of Civil Population By Board of Health.	No. of Deaths in every 1000 Population.
1862	160,000	6278, Est'd.	39.2
1863	170,000	7306	43.
1864	180,000	8498	47.
1865	*200,000	7016	*35.
4 years, 1862-65	710,000	29098	41.

* If the population did not exceed 185,000, as I believe, the death rate was 38 per 1000 in 1865.

If the above estimates be deemed unacceptable, then it will be found that a maximum greater than ever claimed, (viz., 200,000 per annum) gives a death rate for the four years of more than 36. per 1000, and that the minimum population which may reasonably be claimed for the four years, (viz. 660,000), gives a death rate of more than 44. Thus it may be accepted as certain that the death rate during the war averaged from 36. to 44. per thousand population, and that 41. per thousand, as above given, is an acceptable average for the four years.

In order that the mortality in New Orleans during the war may be thoroughly compared with the mortality in preceding as well as in succeeding years, the three last columns (Annual Averages) of Table No. 23 are referred to. It is the only portion of the pages of figures which follow, to which the general reader's attention is especially solicited. For these three columns accumulate, as to a focus, the most important facts, and effectually dispose of some very positive, but erroneous assertions. To appreciate the information given, the following facts must be kept in mind. The first column of "Annual Averages" gives the annual average of the three years 1863-1865, and not of 1862, because it is for these three years only, that we have complete and reliable official records. The same reason has limited all of the tables given, Nos. 22, 23 and 24 to the same years. The second column gives the annual averages of the five years 1856-1860, the first five years immediately preceding the war, of which we have complete official records. The last column gives the annual averages of the four years which have elapsed since the war, the details of which, with 1870, will be published in a subsequent article. This comparison shows plainly, that notwithstanding the facts, that in the five years 1856-1860, there was one year (1858) of the next to the most fatal yellow fever epidemic on record; and that in the four years 1866-1869, there was an epidemic of cholera in 1866, and in 1867 of yellow fever, the third in fatality on record; yet the total annual average mortality of the three war years (non-epidemic) was actually greater than in the years preceding or succeeding them. Still farther and more important, that there were annually more deaths of females, more deaths of children under ten years of age, and more deaths of men over seventy years of age, during the war, than annually during the two other periods of time cited. Now, however unsatisfactory may be the estimates of population, no one can claim that the population of females, of children under ten years, and of men over seventy years, was greater during the war than during the years which both preceded and succeeded the war. Yet the mortality was greater. It should be remembered, as to the three columns of annual averages, that if with the three war years, there had been compared the

three years which immediately preceded the war, viz, 1859, 1860, 1861, and the three non-epidemic yellow fever years which immediately succeeded the war, viz, 1866, 1868, 1869; then in such case the comparison would have been, not slightly, but immensely to the disadvantage of the three war years. The official records then permit no discussion, and leave no doubt whatever that the civil death rate in New Orleans, during the war, was fully equal to the non-epidemic ante and post-bellum death rate. Among other facts of interest demonstrated by the tables, is the augmented mortality of negroes, doubtless due, in large degree, to an augmented population of negroes.

TABLE No. 22.

Mortality Report of New Orleans for the three years, 1863—1865.

(Nomenclature and Classification of the Royal College of Physicians, England.)

Population of New Orleans by the U. S. Census of 1860, was 168,675.

“ “ “ from 1863-65 supposed to have been 150,000 to 200,000

GENERAL SUMMARY FOR THREE YEARS, 1863-65.

Class.	Order.	DISEASES BY CLASSES AND ORDERS.	Deaths in			Total Deaths 3 yrs 1863-65.
			1863	1864	1865	
1		* <i>General Diseases A</i>	1151	2105	582	4838
2		† “ “ <i>B</i>	1043	1140	922	3105
3		<i>Local Diseases—</i>				
1		Nervous System.....	807	971	1014	2792
2		Eye.....	0	0	0	0
3		Ear and Nose.....	0	0	0	0
4		Circulatory System.....	178	161	169	508
5		Absorbent System.....	0	0	0	0
6		Ductless Glands.....	1	0	0	1
7		Respiratory System.....	503	72	510	1741
8		Digestive “.....	2190	2352	1532	6074
9		Urinary “.....	37	44	36	117
10		Generative “.....	17	40	44	101
11		Locomotory “.....	1	2	3	6
12		Cellular Tissue.....	0	0	0	0
13		Cutaneous System.....	8	12	8	28
4		Conditions Unclassified.....	727	851	834	2412
5		Poisons.....	30	35	37	102
6		Injuries.....				
1		General Injuries.....	147	147	141	435
2		Local Injuries.....	†155	53	49	257
7		Surgical Operations.....	0	2	1	3
8		Parasites.....	2	8	12	22
9		Congenital Malformations.....	3	0	2	5
10		Conditions Unclassifiable.....	258	213	124	595
		Total Citizens and “Soldiers included”.....	||7258	8864	7020	23142
		Total No., “Soldiers included”.....	86	366	4	456
		Total No. Citizens, Soldiers excluded.....	7172	8498	7016	22686

* “Zymotic, apt to be Epidemic.”

† “Constitutional, apt to be inherited.”

‡ 133 of these 155 were “Gunshot Wounds.”

|| Report of 2d week, August 1863 defective—Only 2 Cemeteries out of 15 to 20 sent in R ports, giving only 24 deaths for 2d week, whilst there were 177 deaths in the 1st, and 158 in the 3d week Augt. Not less than 134 deaths should be added to supply this deficiency; thus making total deaths of citizens in 1863 not less than 7306.

TABLE No. 22—Continued.

DETAILED REPORT OF THE PRECEDING GENERAL SUMMARY.

Class.	Order.	DISEASES.	1863	1864	1865	Total'dths 3 years, 1863-65.	
1		Small Pox and Varioloid.....	2	605	613	1220	
		Measles.....	98	34	31	163	
		Scarlet Fever.....	43	200	161	404	
		Diphtheria.....	188	337	104	629	
		Whooping Cough.....	55	39	13	107	
		Gangrene.....	19	11	9	39	
		Erysipelas.....	15	26	20	61	
		Puerperal Fever.....	12	11	18	41	
		Pyæmia.....	8	4	2	14	
		Typhus Fever.....	9	11	5	25	
		Typhoid ".....	257	268	154	679	
		Brain and Nervous Fever.....	33	48	26	107	
		" Fever ".....	75	25	17	117	
		Malarial Fever.....	145	164	132	441	
		Congestive Fever.....	110	194	169	473	
		Pernicious Fever.....	79	122	105	306	
		Yellow Fever.....	2	6	1	9	
		Other Diseases of this Class.....	1	0	2	3	
			Total of General Diseases A.....	1151	2105	1582	4838
	2		Rheumatism.....	15	18	16	49
		Gout.....	2	2	2	6	
		Syphilis.....	3	11	5	19	
		Cancer.....	46	66	57	169	
		Tumors.....	7	2	2	11	
		Leprosy (Elephantiasis).....	0	1	0	1	
		Scrofula and Tab. Mesent.....	36	21	21	78	
		Phthisis Pulmonalis.....	761	839	664	2264	
		Purpura and Scurvy.....	5	9	4	18	
		Anæmia.....	15	23	35	73	
		Drop-y.....	153	148	116	417	
			Total General Diseases B.....	1043	1140	922	3105
3		1	" Disease of Brain ".....	4	10	0	14
	Congestion of Brain.....		81	111	97	289	
	Encephalitis.....		57	47	62	166	
	Meningitis.....		44	58	71	173	
	Softening of Brain.....		13	11	13	37	
	Apoplexy.....		61	75	100	236	
	Sun-stroke.....		6	1	22	29	
	Hydrocephalus.....		20	20	26	66	
	Insanity.....		9	7	7	23	
	Diseases of Spine.....		7	5	7	19	
	Paralysis.....		28	35	37	100	
	Tetanus.....		74	85	109	268	
	Tremor Nascentium.....		79	137	125	341	
	Convulsions Adult.....		29	12	18	59	
	" Infantile.....		265	296	275	836	
	Epilepsy.....		25	55	43	123	
	Hydrophobia.....		2	1	0	3	
	Catalepsy, Hysteria.....		0	3	1	4	
	Neuralgias, "Nervousness".....		3	2	1	6	
		Total Diseases Nervous System.....	807	971	1014	2792	

TABLE No. 22—Continued.

Class.	Order	DISEASES.	1863	1864	1865	Tot'l d'ths 3 years, 1863-65.		
3	4	"Disease of Heart."	142	135	130	407		
		Pericard- and Endocard-itis.....	5	5	8	18		
		Angina Pectoris.....	6	1	0	7		
		Aneurism.....	6	7	4	17		
		Cyanosis.....	4	5	2	11		
		Hæmorrhage.....	12	7	23	42		
		Other Diseases of Circulatory System.....	3	1	2	6		
		Total Diseases Circulatory System.....	178	161	169	508		
		3	6	Goitre.....	1	0	0	1
		3	7	Laryngitis.....	0	0	2	2
Croup	64			90	46	200		
Catarrh.....	26			48	32	106		
Bronchitis	60			84	62	206		
Asthma and Emphysema	13			18	28	59		
Pneumonia	282			417	287	986		
Abscess and Gangrene of Lungs.....	1			4	1	6		
Congestion of Lungs.....	24			32	17	73		
Hæmoptysis.....	14			12	13	39		
Pleurisy	9			16	16	41		
Hydrothorax.....	10			7	6	23		
Total Diseases Respiratory System	503			728	510	1741		
3	8			Angina—Inf. Throat and Tonsils.....	71	158	56	285
		Teething	104	214	164	482		
		Cholera Infant.....	68	80	79	227		
		Hæmatemesis.....	12	4	1	17		
		Inflammation Stomach and Bowels.....	303	351	315	969		
		(Cholera, Cholera Morbus and Colic.....	38	62	51	151		
		Diarrhœa.....	1126	913	425	2464		
		Dysentery	328	432	292	1052		
		Enterocolitis.....	36	27	32	95		
		Hernia	5	5	3	13		
		Inf Congest. and "Diseases" of Liver..	38	47	50	135		
		Abscess of Liver.....	8	8	10	26		
		Cirrhosis.....	2	13	16	31		
		Jaundice	16	6	7	29		
		Peritonitis.....	26	23	24	73		
		Other Diseases of Digestive System.....	9	9	7	25		
		Total Diseases of Digestive System.....	2190	2352	1532	6074		
3	9	"Disease," Inf. Kidney, Albuminuria....	28	28	27	83		
		Inflammation of Bladder ..	7	10	6	23		
		Other Diseases of Urinary System.....	2	6	3	11		
Total Diseases of Urinary System.....	37	44	36	117				
3	10	Inf. Uterus and Ovaries.....	3	13	9	25		
		Hæmorrhage from Womb.....	3	3	4	10		
		Difficult Parturition.....	5	10	8	23		
		Puerperal Convulsions.....	3	7	18	28		
		Other Dis. of Female Generative System..	3	7	5	15		
		Total Diseases of Female Generative System.....	17	40	44	101		

TABLE No. 22—Continued.

Class, Order.	DISEASES.	1863	1864	1865	Total'dths 3 years, 1863-65.	
3 11	Inflammation and Ulceration of Bones.....	0	1	2	3	
	Psoas, Lumbar, and Pelvic Abscesses.....	1	1	1	3	
	Total Diseases Locomotory System	1	2	3	6	
3 13	" Disease of Skin,".....	2	0	1	3	
	Carbuncle (Anthrax)	0	1	1	2	
	Penphigus	1	0	2	3	
	" Abscess "	0	8	2	10	
	" Ulceration "	5	3	2	10	
	Total Diseases Cutaneous System.....	8	12	8	28	
4	<i>" Conditions " not necessarily associated with General or Local Diseases :</i>					
	Premature Birth.....	60	90	80	230	
	Still Born	248	298	321	867	
	Debility Infantile	25	65	60	150	
	Marasmus "	173	177	183	533	
	" Adult	27	17	30	74	
	Debility "	87	75	69	231	
	Old Age.....	72	96	65	233	
	Atrophy.....	15	18	18	51	
	Inanition.....	20	15	8	43	
	Total Diseases of this Class	727	851	834	2412	
5	Poisons.....	0	0	4	4	
	Delirium Tremens and Intemperance.....	30	35	33	98	
	Total of Poisons.....	30	35	37	102	
6 1	Drowned	61	67	71	199	
	Asphyxia and Suffocation.....	16	12	9	37	
	Burns and Scalds	21	24	16	61	
	Exposure, Privation, Want	4	2	3	9	
	Killed accidentally	24	30	19	73	
	Killed or Murdered.....	12	5	9	26	
	Suicide	6	6	10	22	
	Other General Injuries.....	3	1	4	8	
		Total of General Injuries..	147	147	141	435
	6 2	Wounds	8	1	15	24
" Gunshot		133	33	9	175	
Compression and Concussion of Brain.....		6	7	10	23	
Fracture of Skull and Spine		4	7	11	22	
Other Local Injuries.....		4	5	4	13	
	Total Local Injuries.....	155	53	49	257	
7	" Amputation "	0	2	1	3	
8	" Worms".....	2	8	12	22	
9	Congenital Malformations.....	3	0	2	5	
10	Diseases Unclassifiable, Unknown, etc.....	258	213	124	595	
	Total of all Diseases	7258	8864	7020	23142	

TABLE No. 23.

Deaths by Nativities, Races, Sexes, Ages, during the three years 1863-64-65 also the Annual Averages of such deaths, during these 3 Years, compared with the Annual Averages during the five years preceding, and the four years succeeding 1853-1865.

	1863	1864	1865	Total for 3 Years 1863-65	Annual Averages of the		
					3 Years 1863-65	5 Years. 1856-60	4 Years. 1866-69
Total Deaths.....	7258	8864	7020	23142	*7714	7427	7298
<i>Deaths by Nativities.</i>							
Born in United States.....	3342	4345	4047	11734	3911	† [4041]	4103
Foreign Born	1274	1500	1477	4251	1417	[2707]	2007
Not Stated.....	2642	3019	1496	7157	2386	[1124]	1188
<i>Deaths by Races</i>							
Whites	5015	6032	4688	15735	5245	‡6327	5027
Blacks and Mulattos ..	1735	2832	2231	6798	2266	1100	2023
Not Stated.....	508	.....	101	609	203	.....	248
<i>Deaths by Sexes.</i>							
Males	4405	4895	3846	13146	4382	4535	4185
Females	2578	3739	2963	9280	3093	2792	2873
Not Stated	275	23	211	716	239	100	240
<i>Deaths by Ages.</i>							
Under 1 year.....	952	1365	1375				
1 to 2 years.....	694	806	578				
2 to 5 "	643	962	624				
5 to 10 "	279	595	446				
<i>Total from</i>							
0 to 10 years	2568	3728	3023	9319	3106	3072	2816
10 to 20 "	411	535	383	1329	443	396	402
20 to 30 "	782	803	650	2235	745	1308	1022
30 to 40 "	725	780	728	2233	744	1108	900
40 to 50 "	595	717	649	1961	654	712	685
50 to 60 "	367	600	445	1462	487	350	491
60 to 70 "	236	358	301	895	298	187	305
70 to 80 "	155	183	159	497	166	98	145
80 to 90 "	84	110	66	260	87	52	57
90 to 100 "	37	38	34	109	36	19	21
Over 100.....	14	21	12	47	16	5	11
Not Stated.....	1284	991	520	2795	932	120	443

* An. Av. of Citizens, 7607.

† An. Av. for the 4 years 1857-60.

‡ The An. Av. White Deaths for the 4 years, 1856-60 excluding the yellow fever epidemic year 1858 was 5267.

The records of the Charity Hospital for the four years, 1862-65, will complete all the statistical facts known to me, bearing upon the vital statistics of New Orleans during this time. The admissions for these four years were 22,296 or an annual average of 5574, which is considerably less than for the years immediately before and since the war. This diminution was due in greater part, to pecuniary and economical causes. The total deaths were 2891, or an annual average of 723. This gives a mortality of 1 in every 7.7 cases, in comparison with one death in 8 cases for the six years immediately preceding the war (1856-61), and with one death in every 7.6 cases for the four years immediately succeeding the war (1866-69). These facts fail to indicate any diminution in the fatality of diseases during the war.

Sanitary condition of New Orleans 1862-65.

Two facts, so called, have been stated, each of which demands investigation. Was the Quarantine "impregnable;" and is it indisputable that "so clean a city had never before been seen upon the continent"?

Quarantine.—Dr. Fenner writes, "In this, we learn, Dr. Harris was misinformed. Vessels of war were rigidly quarantined; but vessels for transportation were not. *Military necessity* sometimes required their admission at all hazards, and thus the disease was introduced on several occasions." Now, Dr. J. C. Faget, who of the three was the only one present in New Orleans, and in a semi-official position, reports: "La Quarantaine n'a existé cette année, 1864, que contre la marine marchande; elle a été nulle pour la marine militaire."

Hygienic Cleanliness of the City.—There is evidence enough to establish that New Orleans was kept in much cleaner condition than it ever had been before, or has been since. As clean perhaps as an "efficient sanitary police" could keep it. However, Prof. Warren Stone asserts from personal observation, that the cleanliness evident in the best portions of the city was much less manifest in the rear, where live the poorer and larger number of the inhabitants; and Dr. J. C. Faget wrote, June, 1863, "cette année,

1863, les *conditions locales* et atmosphérique, demeurent, eomme toujours, effrayablement favorable à l'éclosion du fléau." But leaving aside all contradictory evidence, it is well to recall that the objects of civic cleanliness are to secure purity of water and air; and that, since New Orleans drinks river water, the benefits to ensue here from cleanliness are reduced to the single and all important one of maintaining the purity of health-giving air. Therefore the question is, whether a sanitary police however efficient, can possibly secure this good in a city, where its innumerable privies are all underground with floating contents close to the surface; where the drainage is a most wretched specimen of the wretched system of superficial drainage; where the sewerage is, by this fact, necessarily bad; where near at hand on every side are malarial swamps, neither drained nor yet kept covered with water; and where heat and humidity, the handmaids of decomposition and putrefaction, ever prevail to notable extent? That an "efficient sanitary police" can and did diminish the aerial adulteration is not doubted, but it is beyond the power of human skill to determine the extent of this diminution; and the facts already given establish conclusively that the extent was too slight to demonstrate that any benefit whatever was conferred on the women, the children under ten years, the men over seventy years, and even on any portion of the whole population remaining in New Orleans. Notwithstanding this, common sense, medical experience founded on hundreds of years, suffice to establish the fact that benefit was and always is conferred by an efficient sanitary police. Whenever the proof of this fails, as in the present case, it can be answered with absolute assurance, that however bad the health may have been with, it certainly would have been worse without such a police.

In concluding this portion of my subject (the record and evidence of facts), I may add that neither in the climatic and meteorological conditions of this city during the war was anything exceptional observed, nor were there any conditions whatever other than those already mentioned, at all unusual.

ERRONEOUS ASSERTIONS AND CONCLUSIONS RECTIFIED.

It is not the purpose of these articles to discuss theories. It is a duty, however, to call attention to incorrect assertions and false conclusions which have led astray not only the public, but also the profession. Amidst assertions and conclusions the fact remains indisputable, that yellow fever existed in New Orleans during every year of the war, but in no year became epidemic. In explanation of this apparently exceptional fact, it is boldly asserted and widely credited that:

1. The Quarantine was "impregnable."
2. "So clean a city was never before seen on this continent."
3. The mortality by all diseases was much diminished.

The conclusions are that the diminished mortality, and the epidemic exemption were due especially to the exceptional cleanliness. Such is the position of a very large party, which has Dr. Elisha Harris as its fullest historian, and ablest representative; others have only repeated his assertions and conclusions. For this reason alone, certainly from no personal motive, or lack of proper respect, his views will be considered, and his party answered through him.

This answer is begun, with the emphatic, but not willingly discourteous accusation, that Dr. Harris has been guilty, no doubt unintentionally, of exaggeration of facts, suppression of truths, suggestion of falsehoods, and conclusions not logically deducible from the true premises. I proceed in the interest of science, which is always the vindication of truth, to prove the justice of the accusation; reminding the reader, that Dr. Harris and that party obtained their *few* statistical facts from the very same sources from which I, in this and the preceding article, have given *all* the facts, viz., from the official records and reports of the Board of Health.

1. Example of exaggeration of facts. Dr. Harris says, that the deaths in the seven weeks, July 26th to September 13th, 1863, were 1159, the deaths in the eleven weeks, June 25th to September 10th, 1865, were 1691; and implies July 1865, that the civil population, even in 1865 when at its maximum, was less than

200,000. He says, "New York [an example not to be envied by any healthy city] cannot boast a lower death rate for the same period"; and page 11 (N. Y. Report of Metrop. B. of Health, 1866) he says, that the death rate of New York in 1863 was "31.25 in 1000," and in 1865 "30.3 in 1000." Now, the number of deaths in New Orleans, for the limited time given as above by Dr. Harris, indicates, (even on the exaggerated supposition that the civil population was, more than he claims, 200,000,) a death rate of 43 in 1000 for 1863, and of 40 in 1000 for 1865. If the mortality for the whole year be taken, the death rate was, under the most favorable suppositions, not less than 39 in a 1000 for 1863, and 35 in a 1000 for 1865. Thus Dr. Harris' figures prove his own assertion to be exaggerated; and that New York did have a lower death rate for the same period.

2. Not satisfied with this exaggeration, Dr. H. exclaims "compare this [the number of deaths above given for 1863-5] with the mortality in that city [New Orleans] in August 1853, when 6201 of the inhabitants died." As well visit an eight feet giant, and then denounce every man of five and a half feet as a dwarf! "Or compare with the average mortality of the three years 1853, 1854 and 1855, which gave more than 1000 deaths per month, though the population was far less than during the past summer." Why should an earnest seeker for the whole truth have gone so far back as 1853, why should he select for comparison the three consecutive years of greatest fatality in the history of New Orleans, and why did he not select by preference the three years immediately preceding the war, and therefore best illustrative of his subject? It is true that, 1853-5 strongly favor that which 1859-61 totally defeat the theory he advocates. In the above quotations, as in the one which follows, he is convicted not only of exaggeration and suppression of facts, but also of the suggestion of what is false. He says of yellow fever, that "that enemy and pest of the city had been wont to destroy its thousand victims *every* year, and *sometimes* to kill no less than 5000 in a single month." Associate this with his previous statement "in August 1853, when 6201 of the inhabitants died," and what reader would imagine the facts as they are? The whole truth is, that

in August 1853 there did die 6201 inhabitants, of which 6201 there were over 5000 by yellow fever. Both the 6201, and the 5000 belong to the same month, the latter being a part of the former; and so far is it from being true that 5000 "died *sometimes* in a single month," the fact is, that nothing at all comparable ever occurred in any other month from the origin of this city to the present day. The nearest approach to anything similar was 2204 yellow fever deaths in September 1858. Take all of the 216 months in the eighteen years 1844-61, and there were but twelve months in which the yellow fever mortality exceeded even 500, and these twelve months were all parts of only five of the eighteen years, viz., 1847-53-4-5-8. The other portion of his statement that yellow fever "had been wont to destroy its thousand victims *every* year," is so notoriously false, that it would be waste of time to reply farther than has been done in previous pages. However, taking the eighteen years referred to, it is true that the five epidemic years in these eighteen years did destroy a number sufficiently large, to make an annual average of over 1300 yellow fever deaths.

Let the historical facts given be compared with Dr. Harris' assertions, and if these latter be judged to be a correct representation of the former, then I am willing to grant any conclusions whatever from premises so stated, even that a horse-chesnut is a chesnut-horse.

3. Believing that my accusation of the "suppressio veri, suggestio falsi," has been indisputably established, I proceed to prove that Dr. Harris has been guilty of a conclusion not logically deducible from the true premises. Avoiding tedious quotations, here is his syllogism in brief: New Orleans has for many years been desolated by yellow fever epidemics which destroyed "every year its thousand victims," and "sometimes 5000 in a single month," and during this time it has been a notoriously filthy city. In the four years 1862-65 it was exempt from epidemics, and was the cleanest city ever before seen on this continent. Therefore, concludes Dr. Harris, it owed its unusual exemption to its unusual cleanliness. Now, with equal brevity, I will state the correct syllogism with the true premises.

New Orleans enjoyed during eight years, 1859-66, an exemption, unexampled in her history, from yellow fever epidemics. During four of these eight years, viz., 1859-60-61-66, the city suffered notoriously with its habitual filth, and during the four remaining years, viz., 1862-65, it enjoyed an unusual degree of cleanliness. Therefore, — — — — — what? Enough! quite enough to prove, that, even if Dr. Harris' conclusion were an absolute truth, yet such conclusion is not logically deducible from his own, much less from the true premises. To justify this conclusion at least one other fact must be introduced into the premises, viz., that a yellow fever epidemic never has prevailed in any place as clean as New Orleans was during the four years, 1862-65. The student of yellow fever literature knows well that we have abundant assertions, and evidence as good as Dr. Harris', to the contrary. The "marble promontory" of rock-bound Gibraltar suffered a terrible epidemic in 1804, and also subsequently; Port du Passage, "remarkable for its salubrity," was devastated in 1823; etc. Can it be believed, that a "sanitary police," however efficient, could purify the air in New Orleans, as much as even unaided Nature accomplishes in these and other places where yellow fever epidemics have occurred?

Those who have adopted the views prevalent as to the exemption of New Orleans from yellow fever epidemics during the war, and who are disposed to press the pertinent, but unanswerable question, why, being present did yellow fever not become epidemic, especially in 1864, have apparently omitted all consideration of the many previous non-epidemic years. Let this omission be supplied by furnishing, as one example out of many, the history of yellow fever in 1857, which is in some respects strikingly similar to that of 1864. I submit brief extracts from the "Annual (official, published) Report, 1858, of Dr. A. F. Axson, President Board of Health, New Orleans."

"It will not fail to be noticed that the mortality from yellow fever (1857) runs up to a figure of 199, against 74 in 1856, and 2670 in 1855. How this fever originated, whether from the operation of causes natural to our locality, or by its introduction from

abroad, it is difficult positively to state." The first unquestionable death "was not until the 20th September," the patient had lived to September 12th on Girod street. "It is well known that nearly the whole mortality occurred within a comparatively narrow strip of the city, and occurred too in houses contiguous to each other and occupied by a class of persons, whose intercourse is regulated by none of the conventionalities obtaining among those living under different social necessities." Singularly enough, this "comparatively narrow strip of the city" to which the disease was confined, is nearly the same locality as the Naval Hospital of 1864, viz., "New Levee, Tchoupitoulas and Girod streets;" Girod street being less than a half mile lower down the river than Erato street. Now, what was the condition of this "comparatively narrow strip" in 1857? "There were no reeking offals, no vegetable and animal remains, no heaps of putrefying matter, no overflowing privies, no excessive dampness under foot in the quarters or rooms, or in the atmosphere, and no over-crowding." "In truth so exceptional — — was the appearance presented by this locality, that the Mayor— declared it to be singularly cleanly." And now, what was the condition of the city at large in 1857? The official report says that the lack of cleanliness was such as "would be shocking to the eyes of one accustomed to the filth of Constantinople or Cairo. Streets uncleaned for weeks together, two of our largest hotels pouring the contents of their privies into one of the main thoroughfares of the city, with the ceaseless resources of the Charity Hospital, swelling the stifling current, gutters choking with filth, or else emptying themselves by municipal authority into vacant lots and unpaved streets, canals seething and bubbling with their putrid waters were the customary spectacles greeting the senses in all quarters; and yet the fever appeared and lingered, with few occasional exceptions, in a portion of the city, which, in the language of the Mayor, presented "an unexpectedly clean condition." "If infectiousness were a property resulting from filth and putrescent organic matter, the whole city was a laboratory for its generation, unsurpassed in magnitude and extent, and yet, over its entire length and breadth, the

fever was confined to a narrow strip presenting an exception to the aspect of general immundicity" Under such local conditions, only some 200 deaths occurred, which indicates not less than 500 cases, each producing contagion say some, or endless quantities of fomites say others; and yet these 500 manufactories did not produce an epidemic in a city which was as filthy as described, and contained so many of the unacclimated, that in the very next year, 1858, the yellow fever carried 4855 victims to the grave.

If a sanitary police saved us in 1864, and the other war years, what saved us in 1857 and other non-epidemic years, before and since the war? "La seule preuve, qu'un phénomène joue le rôle de cause par rapport à un autre, e'est qu'en supprimant le premier on fait cesser le second"

Notwithstanding the weight due to the facts now stated, there are others to be considered, before Dr. Harris' hasty conclusion could be accepted. Among these, there is no need to go as far even as Philadelphia to illustrate, that of which there are innumerable examples, that yellow fever has gradually and mysteriously abandoned certain localities which had long been subject to its frequent visitations. There have been intervals in various such places of ten, twenty, fifty years, between its visits; whilst in the mean time a defective sanitary police has been, by no means improved, and whilst a "wide-spread epidemic tendency" has repeatedly prevailed. It has suddenly appeared and domiciliated itself, so to speak, in old and populous cities where there had been no appreciable change in any local conditions. All this, and much more was well known to our predecessors and has been repeated ad nauseam, but without solving that mystery which Gen'l Butler and others got out of, and Dr. Harris and many others in the profession have utterly failed to solve.

No one deploras more than I, that Dr. Harris' conclusion is not logically deducible from the true premises. Would that it were proved that the dire scourge could be driven by "an efficient sanitary police" beyond our borders! Yet, let it not be understood for a moment, that I would willingly utter one word against sanitary regulations, or fail to advocate with all my

power, drainage, sewerage, paving, and an efficient sanitary police as indispensable to the prevention or mitigation of all diseases, and therefore to the welfare of this city. As to these unquestionable benefits, I may say to Dr. Harris, that—

I am "with him upon this theme,
 Until my eyelids will no longer wag ;"
 "'Swounds show me that thou'lt do :
 Woo't weep ? woo't fight ? woo't fast ? Woo't tear thyself ?
 Woo't drink up eisel ? Eat a crocodile ?
 I'll do't."

But I will not do ill that good may come—will not torture nature to half-utter the *few* words I may wish to dictate, but humbly bend a listening ear to *all* those which flow voluntarily from her teaching lips.

CONCLUSION.

Thus far it has been attempted to establish and illustrate historical facts. These facts furnish evidence upon certain questions which have ever been involved in professional discussion. On these doubtful subjects I shall now venture to briefly present some of my *opinions*.

1. *Origin of yellow fever.*—In 1864 the first cases occurred, therefore the disease originated on various vessels, some at anchor in front of New Orleans, and others several miles distant from the city. The rigid Quarantine failed to discover any eases whatever, elsewhere than from New Orleans. The closest observation of the medical and other U. S. officers, exercised under the great advantage of the strictest military and naval discipline, failed to trace any cases to any foreign or exotic infection. These facts strongly confirm the opinion long and ably upheld in this city, that yellow fever is one of our own domestic products, and that New Orleans is very certainly within the "Yellow Fever Zone," whatever the limits of such Zone may be. This evidence also indicates for the poison a choice of birth-place in vessels, and says Dr. Faget in their *holds*; as is known there is much other evidence to the same effect.

2. *Contagion.*—Our more recent text books, particularly the English, French, and German, influenced greatly by the Southamp-

ton and St. Nazaire accounts, teach that yellow fever is contagious. It is well then to recall some familiar local facts for the benefit of those who found their conclusions on these, rather than on the opinions of others, however distinguished. These facts have been denounced as negative in character, and therefore without weight against such positive facts as have been credited. I respectfully submit that the negative facts occur generally, and that, if the positive facts occur at all, they are altogether exceptional. Such apparent exceptions cannot justify us in ignoring the general rule.

During the past eleven years, cases of yellow fever have been present in New Orleans not less than ten years; in one year only (1867) the disease spread or became epidemic. During the fifty past years, the New Orleans Charity Hospital has annually (three or four exceptions only) received cases of yellow fever. (See table No. 4, Article No. 1, January No. 1870, N. O. Med. Journal). Notwithstanding these annual cases, whether domestic or imported, the many different house surgeons and visiting physicians endlessly repeat that there has been no evidence of the transmission of the disease to the unacclimated in the same ward, though watched for weeks after exposure; no cases originating in the Hospital unless the disease prevails in the neighborhood surrounding the Hospital. In 1853 when I was Resident Physician of the U. S. Marine Hospital, then located opposite the city, more than 100 *unisolated* cases of yellow fever had been present for more than a month before a single case originated in the Hospital; and when this occurred the disease, gradually ascending the river's bank, had gained and was prevailing in the residences near to the Hospital. During the same year, one case of variola was admitted, at once isolated and in less than a month there had been twelve cases with three deaths, and this limit was secured by vaccination. Hundreds of cases are recorded, thousands known, of persons contracting yellow fever in New Orleans, and dying even a few miles from the city, without communicating the disease to any one whatever. Many of our most honored and experienced physicians (even after forty years' observation) assert that this is a rule to which

they have never seen a single exception, and none deny that it is, beyond all question, the general rule. Such facts as these are annually observed in this city and when multiplied by the same facts occurring elsewhere, amount to uncountable myriads. So that it is useless to weary the reader with prolix details, illustrating facts, which time has so augmented the strength of, that theories which discard their consideration, must stagger under their weight, and can be accepted by those only who know yellow fever in books, and not at the bedsides of its native land. No intelligent physician, experienced in the yellow fever of New Orleans can possibly grant more than, that if yellow fever be contagious here, then it is only so in rare and exceptional circumstances, and due to unusual and unknown conditions. Teach contagion if you will; but if you would merit a permanent reputation, let it be only the introduction of your chapter which explains those general instances of contagious failure which are certainly very much more numerous, than any disease known to be contagious ever presents. An explanation is demanded which will justify us in supposing that a disease may be contagious generally on ships, but never (certainly not generally) contagious in hospitals and jails; often violently contagious (?) in one special season only of the year, but never so in other seasons.

If it be granted that the yellow fever of New Orleans may or does come from local causes, is there any system of reasoning which justifies or renders necessary the introduction of another cause to account for the same effect? Human experience teaches that correct judgment is not frequent, and correct observation still less so; and that others may be amenable to this criticism as well as ourselves. In fine, if a conclusion as to the unknown is to be reached through what is known, then it is a very safe conclusion, that the poison of yellow fever does not manifest itself as those poisons do, which we know to be contagious.

I find difficulty in comprehending the distinction which is apparently made between the non-contagiousness of a patient in his clothes, and the portability of the disease by the same clothes. It is readily comprehensible that if the poison be generated in

any place, say the hold of a ship, it will attack all liable to it who may expose themselves to such *place*, just as the malarial poison manifests itself; and that when the place moves, as a ship does, then the poison in her moves too, and is thus portable.

3. *Quarantine*.—As to Quarantine, and all practical sanitary questions involved in professional discussion and doubt, the public is perfectly justifiable, even praiseworthy, which acts upon the safe side of the doubt. Quarantine laws are then perfectly defensible, however false may be the theory upon which they may be based; *provided that* their execution be practicable, satisfactorily enforced, and presents any evidence whatever that benefit has ensued. If the New Orleans Quarantine has any one important object, it is to keep out of the city all cases of yellow fever, which after nineteen years trial it has never accomplished in a single year. Even the “impregnable” war Quarantine, so much superior to anything which, in my estimate of republican civil government, can be possibly hoped for again, failed every year of the four. If any benefits have ensued, I fail to comprehend them. The execution of our Quarantine laws has been such, that it is constantly denounced by the very persons who make, execute, and advocate them. Ought not the opponents of Quarantine to be spared the explanatory apologies, which its advocates are annually so profuse of? Consideration is due the following remarks (Nov. No. 1866 So. Jour. Med. Sciences) as to the practicability of Quarantine, “Is it true that disease travels only over the sea—over salt water? Does disease shun transportation by rivers, railroads and dirt roads? Under every practical view this is the decision of our Board of Health.” “The front doors are half opened, the back doors are all left wide open, and the public is asked to believe that the city is Quarantined.” “Quarantine is impossible. The fitful voice of communities is both for and against it; and it is just as absurd to attempt to enforce Quarantine, as to enforce gambling laws or “Maine liquor” laws. The weakness of man will not admit of Quarantine being enforced.” I will not insist that, because in any special matter, perfection is not reached, therefore no good at all is obtained; but I do insist that, even accepting the views of the advocates of

Quarantine, its injuries are certain, its benefits most uncertain. Therefore common sense dictates that New Orleans should invest its money in, and insist upon those sanitary means whose benefits are certain, all good and no evil; and about which neither doctors nor outsiders disagree. Advocates of Quarantine have at least one strong argument in their own favor, it supplies many with a means of livelihood.

4. Sanitary Improvements are glaringly deficient in New Orleans, and are a certain means to unquestionably good results. For the accomplishment of these it should be a matter of comparative indifference to the public, whether they present or not an easy mode to rid the city of yellow fever epidemics; for on this subject contagionists and non-contagionists, quarantinists and anti-quarantinists, ex-rebels and radicals, cordially shake hands, and endorse it with unanimous approval. If exemption from yellow fever should result, so much the better; if not, we would still be left with abundant reason for rejoicing. My own decided opinion is that the "swamp" poison, annually present, causes more suffering, disease and death in New Orleans, than even the yellow fever poison, which is only occasionally present. This greater enemy can certainly be vanquished by sanitary improvements.

5. *Questions.*—What is the poison of yellow fever, under what conditions is it generated, how is it propagated, and what limits it in most years and places, but extends it in other cases to epidemic manifestations? Notwithstanding very much professional talent and labor, and much professional pretension, these questions remain unanswered. Additional facts must be discovered, and science extend its boundaries before the wearisome discussions of doctors can confer any substantial benefits on the public. Much said and written on these questions recalls the reply of a physician most familiar with our epidemics to one of less experience, "every doctor who has seen one epidemic thinks he knows all about yellow fever, whilst those who have seen many do not pretend to know anything." No need to go to European or Northern cities, but only step out of any door in New Orleans in order to find some one in sight and ready to answer,

satisfactorily to himself at least, questions which the wisest physicians refuse a reply to. For instance, will we have an epidemic this season, is demanded at the street corners? Whoever attempts to reply, as many do, is guilty of that irritating ignorance which is unconscious of its own ignorance. All our knowledge justifies only such prognosis as a robust man would receive as to the date of his death—every year without it is a year nearer to it!

Prophets and “bright lights” without number have, here in New Orleans, sprung from even the floor of the Representative, the sanctum of the editor, the office of the lawyer, the counter of the merchant, to bid us hope or beware; yet the former have, without exception, modestly declined to recall their prophecies after the day for their fulfillment had elapsed, and an ungrateful public knows not of them; and the latter, however brilliant, have never dazzled enough to keep their own ignorance from being plainly visible.

Those who really know most feel very sure that as yet there are but two certain means which can be confidently recommended to avoid yellow fever, viz., get out of the place whilst it prevails, or have it once and be thus done with it forever. As to all the other questions propounded, they cannot reply, as well even as science now can, about that wind which, says St. John, “bloweth where it listeth, and thou hearest the sound thereof, but can’st not tell whence it cometh, and whither it goeth,”—nor why.

END OF ARTICLE NO. II.