A TRULY VIRTUOUS WILL IS ALMOST OMNIPOTENT.

EDITED BY

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Case of extraordinary enlargement and ossific transformation of the Ovaria. Communicated by E. Geddings, M. D.

The utility of publishing isolated cases of disease has been much questioned, and at the present time especially, when efforts are everywhere being made to substitute observation for speculations, it must be confessed, that there is too great a propensity to swell the Archives of medical science with detached facts and observations, many of which are too devoid of interest to repay the labor of giving them publicity. The case I am about to offer, may perhaps be considered by some, more as a pathological curiosity, than as a fact capable of admitting any useful induction. I will not pretend to claim for it the highest rank in the scale of importance, in regard to therapeutics; but think, nevertheless, that it possesses some interest in relation to pathological science. For the few details I shall be able to furnish, relative to the previous history of the subject of the case, and the origin of the disease, I have been indebted to my friend...
and colleague, Prof. H. R. Frost, to whose kindness I also owe
the interesting opportunity of examining the body after death.

The subject of my remarks was a black woman, aged 60 years,
the mother of two children. Her occupation was that of a field-
hand, in which situation she was able to perform her task. Her
general health was good, and her principal complaint was occa-
sional pain of the abdomen, sometimes followed by convulsions,
which generally yielded to a dose of castor oil. She became
pregnant of her second child at the age of twenty years—was
delivered safely at the usual time, but had a painful parturition.
Shortly after delivery, a swelling was observed in the lower part
of the abdomen, which increased so rapidly, that she soon be-
came as large as before her confinement. She continued to men-
struate, and had no children afterwards. This circumstance,
together with the tumor of the abdomen, induced her to believe
that she was tricked (bewitched.) All attempts to influence
the tumor by medical treatment, were unavailing, and for some
time before death, her abdomen presented the appearance of that
of a female in the last stages of pregnancy. She continued to
be useful to her owners almost to the last, and finally died sud-
denly of convulsions.

Necroscopy.—The body presented no appearance of emacia-
tion. The large abdominal tumor was round, hard to the touch,
and slightly uneven on the surface. It reached from the pelvis
to near the ensiform cartilage of the sternum, and was slightly
inclined to the right side. On laying open the abdomen, the
tumor was found to occupy the right ovarium. The whole of
the anterior part of its circumference adhered so closely to the
inner surface of the abdominal parietes, especially at the um-
bilicus, that considerable difficulty was experienced in separating
the attachment. In the right iliac fossa, it was adherent to some
of the convolutions of the small intestines, and in its circumfer-
ce, from right to left, it was firmly united with the ascending,
transverse, and descending colon. Behind the line of this latter
adhesion, the posterior surface of the tumor, equal to about one
half of its extent, was perfectly free and smooth upon the surface
—most of the convolutions of the small intestines resting be-
tween it and the posterior part of the abdomen.

The tumor was detached from the parts with which it adhered,
and removed from the abdomen, with the uterus annexed. It was of an elliptic, or ovoid shape; somewhat uneven upon the surface; was covered by the thickened peritoneum, and upon its anterior part, with the false membranes by which it had been tied to the neighboring structures. The uterus was healthy, and presented the right fallopian tube extending to the body of the tumor, in which it was lost. The entire weight of the latter was fifteen pounds. In its longest diameter it measured nine inches: the transverse diameter was seven inches and a half: the lateral diameter eight inches. The portion which adhered to the umbilicus was somewhat soft, and presented evidences of fluctuation. When cut into, about eight ounces of curdy matter was discharged. All the rest of the tumor was so hard and resistant, that it could only be divided with a saw. From three to four fifths of its substance was composed of bone, part of which existed in form of homogenous solid masses, possessing the ordinary properties of bone, while in other portions, the osseous tissue was deposited in form of plates and spiculae, united by a firm, tough, fibrous tissue. The ossific transformation was not confined to the external fibrous envelop of the organ, but was disseminated through its entire substance, and had supplanted every vestige of its natural structure.

Partial ossific transformation of the ovaria, is by no means of rare occurrence; but I know of no instance in which it was as extensive as in the case just detailed. In most of the examples, indeed, that have been reported, it was either confined to the fibrous envelope of the organ, or if it occurred in the proper substance of the ovaria, it was merely in form of small isolated particles. It is proper, nevertheless, to remark, that calcareous deposits of considerable size are occasionally found in the same situation, many of which, have doubtless been described by persons not accustomed to make pathological investigations, as examples of ossification of the ovaria.

As some of the readers of this journal may be anxious to know some of the cases of osseous and calcareous deposits in the ovaria which have been recorded, I shall subjoin a brief synopsis of such as I have been able to find, by a hasty reference to the materials of my own library, premising, that the list might be extended by more extensive research.
Drelincourtius reports the case of a lady of noble birth, the
mother of five children, who died of a disease of the left ovarium.
It contained fifty pounds of fluid—some limpid—some albumin-
ous and meliceric, and, besides, a gypseous material, through
which many rough, hard, spiculae were disseminated.* Two
instances of more extensive ossific transformation have been de-
scribed by Morgagni. In the ovarium of a female, who died of
an affection of the chest, besides several small vesicles filled with
fluid, we found two large empty cells, the tunic of one of which
was composed partly of bone: that of the other was entirely
osseous, and presented upon its surface numerous inequalities,
similar to the convolutions of the intestines.† The other case
was that of a hystericy female, who died a few hours after deli-
very. In one ovarium, an osseous cell was discovered, contain-
ing a grumous fluid.‡ Stork has reported a case in which an
osseous concretion, as large as a pea, was formed in the lower
part of one of the ovaria; and in one instance observed by
Walter, a hard ossious concretion, as large as a nut was situ-
ated beneath the membranous envelope of the ovarium. The
individual was a female, aged 32 years.§ Le Clerc found the
right ovarium of a female, aged 60 years, as large as two fists,
and disseminated through its substance;¶ there were numerous
small points of ossification. In the case of an old woman, whose
body was examined by Nicolai, the right ovarium was as large
as a goose-egg, and the inner part of it was ossified.* Frank
also mentions the instance of a barren female, in whose ovarium
a small bone was discovered after death.† The following case,
reported by Chopart, is more interesting. A female, aged thir-
ty years, who had enjoyed good health, experienced an unusual-
ly copious flux of the menses, which continued beyond the ordi-
nary time. She had no subsequent recurrence of this evacu-
ation, and as her abdomen soon began to enlarge, she fancied

‡ Ib. Epist. xlviii. 41.
¶ Annus Med. ii. p. 266.
† Sammulung. Bd. v. p. 179.
herself pregnant. At the fifth month, she even imagined she felt
the motions of the child, and the same sensations were expe-
rienced up to within a fortnight of her death, which took place
nine months after the period of her last menstruation. The
house surgeon of Hotel Dieu, who was called upon to perform
the Caesarian operation, found in the abdomen a tumor, which he
at first mistook for the uterus containing a fetus. It proved to
be an ovarian tumor, which on being opened, discharged a san-
guinoelent serosity, and seemed to be composed, in part, of an ino-
dorous parenchymatous substance which occupied the two up-
per thirds of the tumor. The other third was occupied by an
osseous concretion, which was extremely hard, of the shape of the
cranium of an infant, concave within, and so intimately adherent
to the walls of the cyst, that it was with difficulty separated by
dissection. This mass of bone was more than an inch thick in
the centre, extremely hard and rough on the surface, and weighed
twenty one ounces. The walls of the cyst also contained
several laminæ of bone in their substance.* In a case observed
by Schlenucker, the left avarian was hard and stony, weighed
three ounces.† Voigtel‡ refers also to Graafe, Cavallini, Lud-
wig, Saviard, De Haen, Sandifort and Chambon de
Montaux, for other examples of osseous and stony concretions
of the ovaria; and Muckel mentions, that he has not unfre-
quently found ossious concretions in the substance of the ovaria
of young females of pleasure.¶ In a very interesting case de-
scribed by Hooper, in which an ovarian dropsy burst through
the walls of the abdomen, and discharged a large quantity of
gelatinous fluid, the surgeon in passing a bandage round the body,
heard a rattling noise within, and passing his fingers through
the opening, he easily detached and pulled out, several portions
of bone, of angular shape, some two inches long, and about one
in thickness, others smaller. Still the rattling was occasionally
repeated: another surgeon was sent for; and it was determined
that the opening should be enlarged, which was done, and sev-
eral more of larger size were extracted. The wound healed, and
the lady lived many years.

* Chopaet. Maladies des Voies Urinaires Tom. i. p. 207.
‡ Handbuch der Pathologischen Anatomic Bd. iii. p. 510.
The origin of these osseous transformations of the ovaria must be explained upon the same principles that influence analogous changes in other organs. In consequence of the operation of causes, often diverse in their character, a perversion of nutrition takes place in the component structures. They require an increase of developement; new materials are deposited in their substance; and their proper texture becomes either notably altered, or it is transformed into one of a totally different character. The fibrous tunic of the ovaria seems to be the part most prone to take on ossific transformation; but in undergoing this change, it first becomes thickened and indurated — then cartilaginous, and finally bony. The pathological condition in question is not however, confined to this structure. There is some reason to suspect, that the delicate membranes surrounding the graafian vesicles, which we know are very liable to become the seat of enormous watery accumulations, as in the encrysted forms of ovarium dropsy, not unfrequently participate in similar changes to those which take place in the external fibrous covering. Hence, it is common to find large watery cysts in the ovaria, the valves of which, very thick and resistant, are very frequently cartilaginous and osseous in certain portions of their extent.

In the cases quoted above, and the remarks offered, no reference has been made to those pathological states of the ovaria, in which bones and teeth have been found in these organs. Such instances are entirely different from those which form the subject of this communication, as they originate from causes of a totally dissimilar nature. Such bones and teeth, when found in the ovaria, owe their origin, either to an extra uterine conception, or to a conception by inclusion,— one germ being included within another, the one including only, coming to perfection.

As regards the influence exercised by the tumor, in the above case, upon the surrounding organs, and the system generally, it is not easy to offer any very satisfactory explanation. Whether the convulsions to which the individual was liable, were owing to the encroachment of the diseased mass upon the abdominal aorta, and the consequent determination of an increased quantity of blood to the head, or to pressure upon the abdominal nerves, cannot be satisfactorily determined. Be this as it may, it is not easy to conceive, how a tumor of such great
size, and immense weight, could be carried for so long a time, without giving rise to greater disturbance of the functions of the organs exposed to its influence, than was manifested during the life of the individual. Had its nature been ascertained during the early period of its growth, it might have been extirpated with considerable prospect of success. But after it had attained its full development, and become extensively attached to the intestines, and surrounding part, any attempt to remove it by an operation, could scarcely have failed to destroy the life of the patient. Its perfect freedom from attachment throughout the whole extent of its posterior surface, would, however, have rendered extirpation less difficult than it would be when the tumor is adherent by the whole of its circumference.

Charleston, May 7th, 1838.

ARTICLE II.

An Address delivered before the Medical Society, of Abbeville District, S. C. at their Second Anniversary, in May, 1837. By Dr. John P. Barratt.

Mr. President, and Gentleman of the Abbeville Medical and Philosophical Society—At your call, I stand before you to address you, on this, the second anniversary of your existence as an associated body:

Two years are now gone, since you formed yourselves into a society, and now is the time for the interrogatory: what have you done individually, or as a body, for the advancement of science, the improvement of your profession, or the benefit of your fellow man?

Have facts accumulated from your united efforts, or individual observation; have you interrogated the arcana of nature, traced visible effects to their hidden causes? If these are and have been your pursuits, then are you pursuing the legitimate objects of your association. The field for exploration is immense; a vast terra incognita lies before you; there is no barrenness; every inch of matter teems with objects worthy of your attention. The inorganic and organic world woo you to examine the design and harmony that exist through the whole of the Great Creator's works; the same Almighty plan develops, in every atom of
inorganic, and in every fibre of organic being that presents itself to our senses and intelligence.

If each individual member of your society contributes the thoughts, feelings and results of what has fallen under his own observation, a mass of intelligence will be brought to one centre—the whole will be instructed, and good will clearly be the result of united minds, which have been variously employed in the great school of Nature, each bringing into the common treasury, the stores he has gathered.

From the vast improvements of the present age, in morals, in physics and organic philosophy, the profession of medicine is now becoming a science, depending upon physical and organic philosophy for its base. So broad are its pretensions, that the whole regna natura must be brought within the circle of its legitimate pursuits. The blind routinist and empirical follower of other men's theories, unsupported by facts, must fall into shade. The sun of truth, with beams effulgent, bursts through the accumulated clouds of superstitious darkness and ignorance, dispels from the fair face of nature the fogs and vapours by which she has been enveloped as with the mantle of Egyptian darkness.

The profession of medicine must be no longer a trade, but a noble science, guided by principles, founded on facts, widely expanded, elevated, pure, with universal benevolence for its day star, and truth, the great anchor of the whole; then will its practice yield that which money cannot purchase—a calm of the soul, a consciousness of having done right, none of the torturing misgivings arising from the doubts consequent upon ignorance. From these the intelligent and benevolent practitioner will be free, and the bed side of the patient will be peace.

From the earliest ages to the present time, there have been, and now are, in all professions, heads, and in our profession, a great many, and each one (with a pride legitimate when guided by correct principles,) has promulgated to the world some favorite theory. Grasping a few facts, and then generalizing the whole to fit conveniently; the effect of diseased actions in organized beings, called fever, has been, and now is, a rich source of theoretical speculations; volume on volume has been written to establish the favorite theory of each leader in medicine. With a systematic nicity, symptoms have been grouped together, and the learn-
ed nosologists have presented us with genera and species, arranged into regular order: thus a long black catalogue is presented to the world, of the ills of man. Quackery is being now, and has been encouraged in all ages of the world, but more particularly at present in our own country, regularly organized; and is in some of the states sanctioned by legislation, a system (as it is called by its promulgators,) of practice of high pressure in all its bearings. The delusion spread far and wide, prevailing in a greater or less degree, in almost every section of our country, and finding supporters in every grade of society. But this, as others, not having truth for its foundation, and facts for its superstructure, will crumble into its primeval nothingness, and leave not a trace behind. On a glance at the history of all ages of the world, the acquisitiveness of man, destitute of moral influences in the general, has caused him to fatten on the gullibility of the world, but these are but the fingi of a day, of rapid growth, but soon to die.

Let us now look at our history as a profession. From the writings of Herodotus, we learn that when an individual became diseased, the friends placed the patient at the corner of the street, or on the side of the road, to attract the sympathies and attention of the passers by, in the hope that some one might happily come, who had been similarly diseased, and had got well, and who would thus be able to prescribe remedies from experience, by which means cures were frequently made. These practices prevailed in Italy, Spain, &c. &c. The priests, for a long time, were in possession of all the medical knowledge of the world. The certain and natural influence of being a venerating being, caused men, when laboring under disease, from which they knew of no retreat, to fly to the temple of their Gods, and invoke their aid. From these daily exhibitions of suffering humanity, the sympathies of the priests were excited, and an attempt made to relieve. Care brought about a great many cures, and it is likely the priests were the most intelligent and benevolent, and hence with them originated the profession of medicine as a part of the priestly office.

Alchemy, physics, mechanics, metaphysics, and chemistry, have each one had the ascendancy. The Greeks, with a Job like patience, carefully watched their patients, and noted down
with precision every symptom of suffering and expiring nature. They made nice distinctions as symptomatologists—but in this their skill consisted. Effects they saw, but never thought or dared to interpose a single remedy to arrest the progress of death, nor did they once glance at the causes producing those groups of symptoms so carefully treasured up. When the last vital throb was over, and the icy hand of death had seized its victim, their enquiries were at an end. Of what advantage was all they had done? Let the millions of trophies of untimely death answer. How humiliating to the philanthropist, and how degrading to the profession.

A new era in our profession has commenced. By the lights emanating from tracing effect to cause, the modern physician, skilled in the physiology of organized being, is now able, in many instances, to hold the fell destroyer, death, in abeyance. It is now that prejudice has to succumb to the active desires of the medical philosopher, the still chambers of death are lighted up, the remains of the pale animate lords of creation are interrogated, the hidden causes of his death, are laid open to the senses. Answers are obtained, and though answered in silence, are answered in truth.

Here the knife of a Beclard discloses the changeful effects of diseased actions, and triumphantly displays the secrets of fever. The organs that once suffered are bared to the scientific eye of the general anatomist. It is here the relations of organic life are to be traced, examined, studied; the texture and condition in health and disease strictly and clearly compared; it is here that most of the learned and studied theories of fever as an entity, crumble into atoms. Facts as stubborn as true, are here presented, and he whose soul delights in truth, grasps, with avidity, the facts presented by the examination of the diseased organs. A Bichat, a Beclard, a Broussais, have been given to the world; ignorance and error are now trembling, tottering, falling! Truth, eternal in its origin, and so in duration, bursts through every cranny of intelligent being, passing from land to land. The flimsey theories and unphilosophical writings of many from the time of Hippocrates, to the present, are now being exploded and consigned to the depository of the antiquary.

Nature, and nature only, is the book in which to look for tru-
isms. Every page we turn in that vast volume, develops facts firm as the pillars of Heaven. Nature’s laws or rules of action, are immutable and without exceptions, and will so remain till the Almighty Author of all, shall issue from the throne of his glory, a return to chaos or the mandate of change.

The relation that exists between the physician and those whom professional services bring frequently together, makes it a legitimate duty, and clearly within his province to point out, and show to man, his physical constitution, the laws of organic life, together with the rules of hygiene best calculated to prevent infringements of his organs. Your duty is constant, active, and vigilant. You are the guardians of health and life; your discriminating intelligence is the aegis that surrounds the lives of your fellow beings. To those with whom debauchery and every other deviation from the path of moral rectitude, has made breaches of the organic constitution, you must administer them, and show how best to restore the harmony of their organs; and thus smooth the path of human suffering; and light up on the diseased and darkened brow of your kindred man, the glow of health and pleasure. Your duties bring in a rich harvest, not alone of the “trash,” but that eternal balm of the soul, a consciousness of having done good, by doing your duty. You thus become the true benefactors of your race, and will receive your rewards here and hereafter.

Were every human and intelligent being, truly and clearly to understand the laws by which he is governed, physically, organically and morally, and act in full accordance with the constitution of his nature, a thousand diseases that now sweep through the land as with the besom of destruction, consigning to untimely graves, millions of victims, would cease to have names, and organic man would live till he died, though an apparent contradictory expression, for few do so, but either kill themselves, or are killed by ignorance and quackery.

The influence of anatomical research on medical science in pointing to a correct pathology has already extensively been felt. Physical exploration points out clearly the changes and lesions in diseased organs, without these aids, we grope in the dark, launch into an unknown ocean without chart or compass, or play a child’s game of shooting in the bush, bird or no bird. To
Dr. Barratt’s Anniversary Address. [May,

Bichat the medical philosopher and the world owe much. It was Bichat who laid the foundation of true medical science, new to the world, but of immense importance. By the efforts of this individual, intelligence and impulse was given to the world of thought in our profession, and a train of earnest investigations into the vital forces and the various modifications of action in the organs of man. Bichat took the hint from Pinel, for Pinel spoke of the possibility of a peculiarity of structure producing a peculiarity of action of life and sensibility. But to Bichat of right, belongs the science of organization in general.

A knowledge of general anatomy applied to a pathological state, uproots all our notions of specifics in medicine. Diseases as entities are no longer tenable, on exploring the diseased organs, and comprehending the relations existing through the whole series. The true cause of all the symptoms we may have noted, and to which we have given names, are clearly developed. Truth now sheds a ray of light, and we regard medicines as modifying agents only, and these have a value in a ratio to their capacity for producing changes in the actions of the system, specially and generally.

Broussais, with that daring that conscious greatness gives to its possessor, concentrated and arranged into system, and by the strength of his genius, gave a most powerful impulse to medical science. Organic sympathies and the sympathies of relation, are by the labours of this great man, being now better understood. The lights of philosophic truth bursts through the accumulated mists of ages, and sheds its genial influence on our too long and too much benighted profession.

A true medical philosophy is now lighting up the darkened chambers of intellect; a knowledge of organic man in health and disease, is progressing onward; arts and sciences are progressive, from the rudest notions of the savage in the construction of his hut and instruments of war and the chase, to the refinements of the civilized world.

However humiliating to our pride, it is true we are yet but half civilized; do we startle to hear ourselves called semi-savages? let us for a moment examine the position, see what has been and what still is our state. Delusions have been promulgated in a continued series, ruled man’s intellect, aroused his
passions, and brought millions of our species into collision and deadly combat, to support the ambition of tyrants aspiring for empire: the blood of our species has flowed in profusion o'er every land in their barbarious conflicts: millions on millions of money has been expended either for defence or aggression by the natives of the earth. The savage propensities of our nature cause man to spill the blood of his fellow man; the knife or the deadly ball, settle what intellect ought to do. Man has battled to sustain dogmas that are now crumbled into dust and covered by the fallen fragments of successive follies. From whence say ye come the secret arms now being carried in our own times? 'Tis the foul dregs of savagism that buckle on the murderous Bowie Knife, or arm the walking cane with the deceitful spear, and causes the glittering dirk to lurk in the bosom where honest indignation ought to spurn such a contact, and exulting in the pride of intellect, dash from him the insignia of barbarism. There is a fault somewhere. An error in education, a neglect of the social law of our nature, the propensities, lawless, rule where the intellect ought to be enthroned; the individual is not taught to rely on his own thoughts and feelings. A few daring individuals have governed the whole mass; the individuality of the species is lost, and the many have become but the component parts of the few.

The history of Rome gives you an example in her Cæsar. Bonaparte is another example of our times, as witness the Vive le Emperor shouted by the millions of France when he escaped from the water bounded prison of Elba to deluge her land in blood, and dissolve every tie of nature in death, causing thousands of matrons to mourn the loss of their children. This state of things has to be broken, though slowly, as every inch onward presents a shackle of antiquated obscurities, rendered sacred by age, ignorance or prejeduce, which education and the cultivation of our better feelings, must and will break down. Our race is on the high road to improvement, each successive age makes nearer approaches to a better state; the twilight of morning is brightening to the light of day, and as time rolls on, man will be developed as a civilized, intelligent being.

About the year 1790–95 the immortal Gall began to develop the physiology of the brain, new lights sprung up all around,
and man began to investigate and study the sources of his own thoughts and feelings.

Gall in this matter stands alone and original in bold relief from all the world. It was Gall who dared to say to the physiologist, that thought was dependant on material organs, that on the integrity of the brain depended the integrity of thought.

Since Gall first promulgated to the world his observations on those delicate tissues, the nerves, which till then were measurably in the arcana of nature, have received great attention from the most intelligent anatomists and physiologists of the present age. From such investigations much light has been thrown on the matter, and much valuable information has, from such a union of effort of the master spirits of our profession, come in upon us from different quarters of the world.

Broussais has pointed out the causes of diseased actions, and wiped out from the pages of medical science, diseases as entities, distinct from organic derangements. And for this he has been assailed, abused, traduced. But by whom? Not surely, by those who have carefully investigated his writings, or entered into his thoughts. No gentlemen, to read and understand, is to believe the principles for the most part which he has laid down.

Those who are loudest in the abuse of Broussais, are for the most part, men who are naturally destitute of those powers of thought which so eminently characterized this modern prodigy of medical philosophy. Many of his abusers have never read a single page of his writings, but have abused from the bare say so of, they don’t know who. To all such I would say, read, think, play the man,—and then, in the place of being the abusers, you will become the admirers of him who said, “to think is to feel, sensibility is the soul of man.”

Gall and Spurzheim in developing the physiology of the mind, have been represented to the world by their opponents, as “German fanciers, fools, &c.” but truth prevailed, and though “passed through the volley and shadow of death,” they live on the pages of their country’s glory, and will live till the order of man’s organization shall be changed by the Manus Dei being stretched forth to arrest the present order of things.

In our own country a Godman has lived—his country’s glory deeply imbued with the philosophy of the age—and pursuing a
course of investigations in the great school of nature, with a vigor of intellect scarcely every excelled and but seldom equalled. The flame of vitality that lighted up his brain to exalted thought, burned with splendor. But alas!!! for science and the world, the grim tyrant death marked him as an early victim—the thread of life too tensely drawn was snapped asunder. The monster grasped him in his icy arms, and bore him in the morning of life to the cold damp chambers of the grave. Philosophy mourns her votary, science weeps her lover, and the world has lost a benefactor. A Dunglissson still lives to adorn a seat in the scientific halls of our country's greatness. One of our sons now fills a conspicuous place in one of the schools of medicine, and we have the pleasure to hear of his returning to his native state, to give increased tone and vigor to her institutions.

The University of Pennsylvania has her Jackson, the author of the principles of medicine; he has added much to the development and improvement of medical science, and bids fair to rival the most eminent in the old world.

Let us for a moment glance at the practice of a medical man, educated in the school of nature, taught to look on man as an organized being, and who understands the organic relations existing between each separate organ. To him it is matter of fact and not of mere speculation, that peculiarities of texture, wherever found, are assuredly governed by the same laws, and possessed of the same susceptibilities; and when in a deceased state or condition, show clearly, similar phenomena. He is one who has discarded fever as an entity, but looks upon it as a sanitary radiation to relieve the suffering organ. The functions of digestion, circulation and nutrition, are what he who has been taught the physiology of the organism of man, will endeavor to influence with remedial agents. The physician is called (for example,) to a case generally called billious fever. On exploration and analysis, he finds the patient in the following situation: The tongue somewhat pointed, red or scarlet on its edges, and covered with a dirty yellow coat on its median portion. Pulse strongly developed and frequent. Skin burning hot, comparatively speaking, intense thirst and a strong desire for cold water, and acidulated drinks, respiration hurried, with a yellow color of all the mucous tissues.
Thirst is a certain sequence of exalted actions in the stomach or other organs, when the whole organism responds to the suffering portion of the catenated whole. In most patients, we witness an instinctive call for those drinks that are acid in their character.

To sum up the result of his observations, from physical observation and analysis, he unhesitatingly comes to the following legitimate conclusion of the case—the landmarks in his chart are all marked and numbered, and he reasons thus: Here is before me a primary and certain affection of a mucous texture, inflammation and irritation to a certain extent, and through the nerves of the ganglionic system, extending and influencing the brain, heart, lungs, spleen, liver, &c. &c. the original irritation is in the stomach—the symptoms are sequences only.

Now we come to the point of application of principles to practice. Bearing in mind the fact "ubi stimulus, ibi fluxus," the line of practice is now plain. Cups or leeches are applied over the suffering organ or organs, and blood is thus abstracted. Cold mucilaginous poultices over the parts affected. The blood vessels over the stomach are supplied or receive nervous influence from branches of nerves immediately connected with those branches that supply the texture of the stomach. By thus abstracting the blood as above, almost direct completion of the organ is obtained. To save or prevent any further irritation, nutrition is modified by the use of the mildest and best stimulating articles of diet. All stimulus will be positively withheld from the gastro pulmonary mucous texture. Centres of irritation will be established on the extremities of textures, the same in character as those primarily effected. And if necessary centres of fusion are established in texture at a distance from the suffering organ, cold drinks, lemonade, orangeade, mucilage, sugared water, &c. &c. If the brain becomes engaged, blood is taken from the temples or the base of the brain, emolent enemata—the tongue loses its fire and clears—respiration slower—the skin becomes clear and cool, circulation returns to its normal state, and health is restored without the routinists ordeal of emetics, purges, salrivations, death, or what is worse than death, a chronic state that renders life but a miserable reality.
Dr. Jackson's Clinical Lecture on Epilepsy.

Saturday, 10th February. Dr. Jackson commenced: Epilepsy, gentlemen, is one of the most formidable affections, which you will be called upon to treat; and you will find few, in which all the resources of your art will so frequently fail. It has been looked upon in this light, from the earliest period. The ancients had so little control over it, that they designated it by a term signifying the malice of the demon. Hippocrates continued the title morbus sacer; or the sacred disease, though he combated the superstitions from which it was derived. Various other terms have been applied to it. By the Romans, it was called morbus comitialis, from the fact that its victims were often struck down with it in the forum, probably owing to the excitement arising out of public discussions, and political warmth.

Many illustrious and eminent characters of ancient and modern times have been subject to this infirmity. Julius Caesar* was an epileptic sufferer: it is very certain, therefore, that it is a disease, which does not necessarily interfere with a high development and exercise of the intellectual faculties. On the contrary, this very exercise of them is often productive of the disease. Perhaps the most distinguished pulpit orator this country has produced, Buckminster, fell a victim to repeated attacks of this affection, brought on by intense mental application. On the other hand, futurity is not an unfrequent attendant upon epilepsy, as you will have occasion to notice, in numerous specimens of the disease, that will shortly be presented to you.

Epilepsy is vulgarly called the falling sickness, from the circumstance of the patient's falling suddenly to the ground, upon an attack of it. From this cause, they are liable to numerous

*Cæsar. He fell down in the market place, and foamed at the mouth, and was speechless.

Brutus. 'Tis very like: he hath the falling sickness.

Julius Cæsar. Act 1st, vers. 3d.
accidents; in several in this house, that will be brought before you, you will see traces of the effects of fire, and other injuries.

Epilepsy is a convulsive affection, attended with loss of consciousness. This latter feature I am anxious to impress particularly upon your attention, as it is not considered by some writers, among them Vogel, Sauvages, and even Cullen, as essentially characteristic of the disorder. For my part, I never saw a case, certainly never in this house, in which it was wanting. The symptoms of epilepsy then I consider to be, convulsive movements, with loss of consciousness and of the intellectual faculties. As the loss of the powers of motion in palsy depends upon pressure acting upon the thalamus and corpus striatum, so I think we have evidence from the convulsions of epilepsy, combined with loss of consciousness, that in it, the cerebral structure must be involved. But the convulsions I do not look upon as the most important symptom; that I consider to be the loss of the intellectual faculties—the muscular symptoms being the first to pass off, and frequently very slight. In some cases, the muscular convulsions and loss of the faculties are followed by complete coma. The suspension of the intellectual faculties, and the convulsive movements are evidently the effects of sudden and violent disorder in the cerebral circulation. There is, it appears to me, a raptus of the capillary circulation, terminating in a congestion, more or less intense, of the brain. This is usually well marked, the face swelling up, and becoming turgid, and almost purple, affording striking evidence of determination of blood to the head. Occasionally, so forcible is this raptus, that ecchymosis occurs from the effusion of blood out of its vessels. This fact, it strikes me, is strong evidence, that the movement is attended with force, is one of activity, and that the accumulation of blood, as has been conjectured, is passive and secondary. I had an illustration of this fact, in the case of a gentleman, who was under my care some years ago, in whom the disease suddenly showed itself. Attention was first called to him, by his family being struck with the appearance of petechia, or livid spots upon his face. A doctor was sent for; who pronounced it a mere affection of the skin, which would disappear spontaneously, as in fact it did; but, in a week or two, it came back again; and this continued to be repeated for some months, without a suspicion of its cause, or of the true nature of the disease. A young man, for some accidental reason, happened to sleep in the same bed with him, and was awakened in the night, from his agitation in a convulsion. It was then ascertained, that the periodical appearance of spots on the face proceeded from attacks of epilepsy in the night, of which the patient was unconscious.

The patient, in this affection, is totally unconscious of the existence of an attack. He rouses up gradually from a state of
profound somnolency, with an expression of astonishment upon
his countenance, with simply an unusual feeling of soreness,
from the great muscular exertion which he has undergone.
This, to an epileptic, is the principal indication that he has had
an attack.

The attack varies in character. Sometimes the patient falls
suddenly down, without any previous admonition. At other
times, he is able to anticipate the approach of the complaint.
Most frequently it is preceded by an uncomfortable sensation
about the head, as vertigo, dizziness of sight, &c. Again, the
warning may take place in the abdominal viscera, which is or-
dinarily indicated by a sensation about the region of the stomach,
gradually moving upwards to the head. Often, however, the
patient has no consciousness of his approaching fate; he sud-
denly cries out and falls prostrate to the ground.

The symptoms of an attack are not always of this extreme in-
tensity. Sometimes they are so mild that you can hardly call
them epilepsy, though I think they still belong to this class of
affections. They are often exceedingly local in their character.
A gentleman of the medical class, some years ago, was affected
in this manner. He had been recommended to study medicine,
as a mode of getting rid of the disorder; which, by the way, was a
very ill-judged recommendation. He would at times in conver-
sation, suddenly repeat over some unconnected words, or an
oath, or he would sing a little, being all the while in a state of
total unconsciousness of what he was doing; and then resume
the thread of his discourse, ignorant, unless informed of it, that
any thing had occurred.

The disease was limited to the production of the above symp-
toms, except on one occasion, when he imprudently fatigued
himself with exertion, and ate a large quantity of nuts, (a quart.)
he then had a complete epileptic convulsion. This accident in-
dicated the true character of the disease.

Another case in which the disease showed itself in this slight
local form, was that of a gentleman, who had a daughter also la-
bouring under the disease of a most strongly marked character.
I have often seen this gentleman stop, while in conversation, and
repeat his words; sometimes he would merely move his lips
without articulating; and then resume his discourse, without be-
ing conscious of what had happened.

I have met with one case that appeared to me, if it may be so
called, epilepsy affecting the spinal marrow. The general char-
acter of the symptoms evidently connect it with epilepsy. This
case was that of a boy, seven or eight years of age, who laboured
under monthly attacks, of a form which I shall presently de-
scribe, brought on by an obstinate intermittent fever, when an in-
tant. Epilepsy supervened, and had continued.
These attacks were also of an intermittent character; indeed, I might here mention that the disease always takes on a type more or less intermittent.

The paroxysms would continue to recur for three days, and often amounted to twenty or thirty, in the twenty-four hours. At the end of three days they disappeared, until the expiration of a month, when they would be again renewed. In all other respects his health was perfect. He was seized every month, without any loss of consciousness, however, with spasms, affecting all the muscles of the trunk and extremities, proceeding of course from an affection of the spinal marrow. It was a case of cramps, more than convulsions. They were attended, as all cramps are, with violent pains.

This boy is now fourteen years of age, and with the appearance of puberty, the affection is disappearing. I cannot well rank this affection any where in a system of pathology. It is not epilepsy, because the brain is not affected, nor can it be called tetanus. I think I may perhaps with propriety, designate it epilepsy of the spinal marrow.

After this general outline of the symptoms and character of the disease, I will now introduce to your notice some cases of patients who are labouring under it. I will only add previously, that the most common period for it to show itself is childhood, and that it is more apt to attack the female than the male sex.

This girl is twenty-two years of age, and enjoys general good health. You notice the vacant expression of her countenance. There is idiocy combined with epilepsy: this is not unfrequent. She menstruates irregularly; the menstrual function was not established, till three years since; the secretion is now scanty, but the discharge occurs more or less every month. Epileptic fits first appeared seven years ago, when she was fifteen years of age; up to that time, she had been quite well. At first, they were periodical, recurring every three weeks; subsequently, after the menstrual evacuation was established, they became more and more frequent. At present, epileptic paroxysms precede and accompany the menstrual period. The patient is sensible of the approach of the fits, by the sensation of a bright light before the left eye which precedes the attack: during the attack, she is insensible. All the functions are performed with regularity except the menstrual. The girl has never received any external injury. You learn that she has a premonition of the approach of an attack. This is often the case. The patient usually feels a rising up from the epigastrium to the head, like a flame, termed the aura epileptica. When it has reached the head, consciousness is gone. This girl tells me that her attacks correspond with changes of the moon. It has been a favourite theory with many writers, that lunar influence is felt by individuals,
suffering under this and other affections. Balfour has written a work in favour of this hypothesis. I however have no sort of belief in any connection between epilepsy, and changes of the moon. In this case, from the intermittent character of the affection, it occurring every three or four weeks, the attacks must correspond in many cases, with some one of the four quarters of the moon.

In this case, the appetite is normal. It is sometimes exceedingly voracious, and cases of this sort I never could cure: I believe them to be totally incurable. A regulation of the diet is a most important element, in the successful treatment of epilepsy; and, as this morbid appetite prevents any control over the diet, a cure is hopeless.

The memory in this girl is impaired. I have gathered however from her that she has dysmenorrhea, and menstruates with pain. I speak thus freely before her, as the faculties of her mind are impaired. Delicacy on this subject to the sex, gentlemen, should never be out of mind. The uterus then, in this case, I consider the seat of the disease, the point from which morbid action is reflected to the brain. Nutrition is, you see, not affected by the disease: this girl’s flesh is firm, and her digestive powers appear to be in excellent condition. The cerebrospinal system may be affected, without impairing the constitution; and you see how the life of nutrition is independant of the brain itself.

Here is another case, an old inmate of this house, a girl aged 26, of very obtuse intelligence; although you see she recollects my face and name. Notwithstanding this great pallor of countenance, which you notice, she enjoys pretty good general health. She menstruates regularly though with some slight pain. The first fit of the disease occurred at the age of eighteen. She was attacked suddenly whilst engaged at her ordinary occupation, and does not recollect that she had any pain in the head or unpleasant feelings about that time: she says that she understands that she had not. At first the fits occurred almost daily. Her attacks now are usually preceded at night by fulness of the head, and a state of insensibility, attended by a blackened turgid face, but without convulsive movements: these are succeeded the next morning by regular fits of epilepsy, to the number of fifteen, during the twenty-four hours. Now these previous nightly premonitory attacks were called fainting-fits, but they are quite the contrary. Fainting takes place from want of action in the heart; the blood does not get to the brain, and you have feeble pulse and respiration and pallid face. Whereas, here, you have evident determination of blood to the head, full pulse, and quick respiration.

This third case presents an example of the voracious appetite of which I spoke. She is twenty years of age, and has been
subject to the disease from the age of five. Her mental imbecility is very great. Menstruation regular. The paroxysms are of daily occurrence; during them, her face becomes exceedingly flushed, and she froths at the mouth. Some time ago, she says, she felt queer when the fit was coming on, but she has now no admonition of its approach.

Here is another case, in which the disease is of seventeen years standing, and showed itself first when the woman was between sixteen and seventeen years of age. It has proved very intractable, every description of treatment having failed to make an impression upon it. The intelligence, however, as you perceive remains very perfect. The paroxysms are preceded by dysmenorrhea, which gives the affection an uterine type.

Here is a case, the general character of which does not differ from the others, which have been under your notice, except that the disease first appeared after an attack of scarlatina, in which the head was much affected. The girl is sixteen years of age, and has never menstruated. You see the total imbecility of her mind; her memory is gone. The nurse tells us, that the attack of scarlatina occurred five years since, and that her mind was perfect before. The paroxysms of epilepsy are now becoming more frequent, occurring almost daily. They come on now at night, although formerly she had them in the day time. When on the history of the disease, I should have mentioned, that many individuals have the fits only at night, and never during the day, the only manifestation of the occurrence of the attack, being a soreness in the muscles next morning.

You have next before you a man, aged forty-seven years, in whom the disease has existed for thirteen years, caused by a blow on the head from the fall of a tree. Several pieces of bone were taken out at the time, and the wound had nearly healed, when he had the first paroxysm of epilepsy, about three months after the injury. At first the paroxysms were very severe: he thinks they now grow lighter. They were more severe when he was in the habit of taking his dram. He says that they are now brought on by his "taking cold," and that he never has them when his health is perfectly regular. You see then that the disease is clearly here under the influence of exciting causes. The last paroxysm the man had was about three months ago. His memory is much impaired, as to events which have transpired since the injury; but he can recollect well whatever took place before.

I have met with many such cases as this, in which the memory totally failed in events subsequent to the appearance of the disease, although it retained perfectly facts antecedent to this epoch. I had some years ago a boy from Virginia under my care, a strong, vigorous lad, in whom epilepsy had been brought on
from excessive mental application. He was a very ambitious little fellow, always striving to be at the head of his class, and his tutor, instead of repressing, injudiciously urged on his efforts. His recollection of things that had happened previous to his attack was perfect, and of all that he had learned, but he was incapable of acquiring or retaining an idea subsequently. I took him home to live with me, and I was never able to communicate to him a new idea. I could not even make him understand that the Virginia penny and our cent were the same coin.

I perceive that the man, of whom we were just now speaking, has a depression of the bones of his skull of a quarter of an inch. This may be the local cause of the affection. I may add, as regards this, that the man knows when an attack is coming on, by the appearance of a black spot before his right eye, three or four minutes before he falls. He always lies down, when he finds the fit coming on, and it is never so sudden as to prevent this.

I present to you another man, aged twenty-seven, in whom the disease has existed say for ten years. It was brought about by excessive intemperance. Here then you perceive another existing cause of the disease. You observe that in this man, the muscular movement is affected. This is by no means necessarily the case. All the others you saw walked well. On the contrary, I have generally seen considerable muscular development and muscular power in epileptic patients.

Here is a case complicated with mania, the general health being otherwise excellent, another illustration how little the functions of nutrition are affected in the diseases of the cerebral organs. I have here another case complicated with mania, in which the disease has existed for three years. The patient was scalded in a steamboat just before the epilepsy appeared: this may probably have had some connection with the production of it.

In this boy, whom I now show you, the paroxysm often manifests itself with simple loss of muscular power. The boy, I am told, will fall without any accompanying loss of consciousness. In some cases, there is merely a slight vertiginous movement, the patient not losing his consciousness and instantly recovering: the paroxysm is not then complete. It is a case of incomplete epilepsy.

The train of cases, which I have exhibited to you, affords a melancholy proof of the inefficiency of all the resources of art and science. Epilepsy appears to have the same incorrigible character now, as at the earliest periods.

These cases have shown a succession of exciting causes of the disease. I shall not however divide it into different species, according to the local origin that makes an impression on the brain.
The essential character of the disease I hold to be a highly irritable erythematic state of the brain, which if you strike away, you have various local affections, but no longer epilepsy. By analysing the several distinct movements, which take place in the animal economy, in the affection, I think we may find a rational pathology of the disease and system of treatment. The treatment of epilepsy, as generally directed, is empirical. There is no one remedy upon which we can rely, but we must adapt our therapeutics to the features of the case. These may be as various as the causes of the disease.

By analysis, then, I think we will find three perfectly distinct features in epilepsy. The first is an irritable state of the cerebral structure—possibly an erythematic condition of the brain. This condition of the brain proceeds from various causes. It may be occasioned by some local affection of a painful or irritable character, with which the brain is ultimately brought into sympathy, or, it may be induced by a variety of exciting causes, such as excess of venereal indulgence, masturbation, exostosis of the cranium, spicula of bone or tumours upon the arachnoid. You readily see, how these latter must keep up a constant state of irritation within the cranium. The race of Indians, who flatten the head by artificial means, and force in the bone upon the brain, are said to be epileptic. Cases of exostosis, spicula, and depression of the bone are difficult of management, though I will not say they are utterly intractable. Professor Dudley recommends the trephine, in such instances, and he has been remarkably successful, in relieving some cases by this operation. Winter before last, Professor Gibson performed an operation of this sort, in this hospital, in a case, where depression existed, caused by an accident, but without beneficial result. This case appeared to me to promise a favorable opportunity for testing the influence of this proceeding: it did not even suspend the paroxysm.

The next element, which I consider a component of the disease, is, the extreme mobility of the capillary circulation, and the facility with which its regular distribution is deranged. If you prevent this, you prevent the formation of the paroxysm. The essential feature of the disease is, a sudden congestion of blood on the brain, apparently produced by a raptus or rush on that organ. The symptoms that result are dependent upon the intensity of this raptus. In some cases, it is so violent, that petechial effusion of blood in the skin of the face occurs; and the attack varies from a slight loss of consciousness, and a light convulsion, succeeded by a transient sleep, to prolonged and profound coma, that will last for two or three hours.

The next and last element is, the existence of some permanent local affection, which acts as a thorn in the flesh, or point of
irritation, worrying the nervous system into excitement, and producing an irritable or erythematic state of the brain. This may be, as you saw in many of the cases to-day before you, dysmenorrhea, or other uterine disease. When on the subject of neuralgia, I told you, that these might act as excitants of that disease.

Another local cause of epilepsy is intestinal irritation. The existence of worms has frequently been the exciting cause. Your remedies then are anthelmintics: you purge with turpentine or something of the kind, and cure the patient. Derangement of the stomach may also act as a local cause of irritation upon the brain. Ordinary convulsions are, you know, often produced by the functions of digestion being impaired: this sort of reflex action may take place through the medium either of the ganglionic system, or of the eighth pair of nerves. I could recall several instances of fatal convulsions from the action of indigestible food. Such a one occurred in my practice, in the case of a young child, two years of age, from a large quantity of fried eggs. It was destroyed in four days. You perceive here, that a simple article of food may produce convulsions, a violent congestion, or other disorder of the brain, from a cause that can act only on the stomach. You can understand, then, how a morbid state of the stomach, reflected upon the brain, may produce a state, productive of epileptic paroxysms. The congestive raptus, the immediate cause of the convulsion and unconsciousness takes place by a sort of appel, if I may use the word, upon the grand capillary circulation, which is the means of the circulatory communication between the organ locally affected and the brain.

These then, gentlemen, are my views of the pathology of epilepsy. I do not look upon it as a single disease, in which there is but one element, but as consisting of several combined elements: first, as erythematic irritability of the brain, secondly, a morbid mobility, through the action of the nervous system, of the capillary circulation by which its equal distribution is easily disturbed; and thirdly, a local affection, a point of irritation in some distant organ, which, by a reflex action upon the brain, excites and keeps up the disease. If these views are correct,—and, if you analyse the phenomena of the disease with care, I think you will find it resolves itself into the elements I have enumerated, we have at once a national plan of treatment, based upon the different component parts of the affection. For each element, we must have a different mode of treatment. Our efforts must be directed in the first place, to get rid of the erythematic or irritable state of the brain, secondly to give tone to the capillary system, and, thirdly, to remove the local cause of the disease.

The first thing to be done is, to place your patient upon the lightest possible diet, so as to have the stomach completely under your control. Of course alcoholic liquors, tea, coffee, and the
stimulants generally are to be utterly prohibited. As a general rule, the food is to be exclusively vegetable. I have never known a case to recover, when animal food was continued. We then direct our treatment to the brain. I commence by having the hair cut short, and by a course of chronic leeching. One day I apply a leech to one ear, then another to the temple, a third day behind the other ear, and so on. This I keep up for months: in fact, you must prepare your patient for a long period of probation, holding out no prospect of relief, before one or two years have elapsed. Cold water is to be applied to the head, two or three times every day, with at the same time, warm or stimulating foot-baths. When the patient is asleep, keep warm bricks or warm water constantly to the feet. He is besides to sleep upon a hard pillow, without a night-cap, upon a mattrass and not a feather-bed. All this is to keep down cerebral excitement and prevent the flow of blood to the head. Setons at the back of the neck, or an issue on the arm, as a diverticulum, are useful. Your next object is, to give security to the capillary system. For this purpose, you must employ tonics, of which the best for your purpose are the mineral tonics. I prefer the preparations of zinc. Begin with a quarter of a grain of the sulphate of zinc and one grain of the oxide, two or three times a day, and gradually increase the sulphate to one grain. Emetics have been recommended and tartar emetic has been employed, just before the paroxysm is about to occur: if you can foresee this, this treatment may be of advantage. But I prefer to vomit with the sulphate of zinc. By persisting with the use of the metallic preparations, the capillary system gradually acquires vigour: through its means, the brain can no longer command and concentrate towards itself the circulation of the entire system. The preparations of iron are also to be employed to effect this end. You may vary them with the zinc, administering the two on alternate days. The phosphate and carbonate of iron are the best preparations. Small doses long continued are to be used. Large doses may disturb the organs. The sulphate of quinine, in small doses, used as a tonic and not as an anti-periodical, in doses of a quarter or half a grain, is likewise useful. It may be combined with the oil of turpentine, in morbid states of the stomach, accompanied with the voracious appetite of which I have spoken. Upon the whole, however, I decidedly prefer the metallic preparations.

You must never permit constipation of the bowels to take place. To obviate this, rhubarb is an excellent remedy. Avoid the drastic purgatives, which irritate the nervous system, and destroy the digestive powers, which of course is not your object. Open the bowels daily with an injection; this acts upon the lower bowels, which have less connection with the brain, than
the upper portion of the intestinal canal. Some of the vegetable tonics as Gentian, Cascarilla, and the tonic anti-spasmodics as Valerian may be commonly resorted to.

The next point in the treatment is to ascertain the seat of the local affection. This varies exceedingly. In some instances, I have known a tubercle upon a nerve act as an exciting cause of epilepsy. Again, I have seen it proceed from the point of the finger. Desault cured a case by cutting off the toe. In these cases, a peculiar sensation is felt, commencing at the point of irritation, and ascending apparently along the nerve, until it reaches the brain, when the paroxysm takes place. It has been named aura epileptica. When the aura or sensation goes up slowly from the point of origin, the paroxysm may be often arrested, by applying the tourniquet or a light ligature. Cases are on record, where a piece of glass was the excitant; by cutting it out, the disease terminated. A diseased testicle has acted in the same manner, and relief was afforded by extirpating it. Most frequently, however, some internal abdominal or pelvic visceral affection is the local exciting cause of the disease. This is particularly the case with the uterus, in the female. In the majority of the female epileptic patients, whom I have had under my care, the womb was prolapsed, or enlarged, or carcinomatous, or there was dysmenorrhea from simple nervous irritation of the organ. Unfortunately, after you have completely got rid of the uterine affection, epilepsy will sometimes continue, when the disease has been of long duration. The brain and nervous system have become so much disordered by the long continuance of the disease, that numerous light derangements of the functions are capable of exciting the paroxysms.

Cases of uterine complication, I treat with leeches to the neck of the uterus and to the vulva, cups and blisters to the sacrum, hip baths, in short with the class of remedies, adapted for the relief of dysmenorrhea and uterine irritations. There are cases, in which menstruation is unattended with actual pain, there being simply a sensation of uneasiness or of dragging. Tonics are here of service, particularly the chalybeates. But local depletion, after all, is the remedy upon which you are most to rely. I had a case in this house of a very remarkable character illustrating the view of the subject. The patient labored under maniacal paroxysms, connected with uterine derangement. She was the wife of one of the theatrical orchestral corps, who forced her to travel, a week after an accouchement. This brought on first hysteria, and afterwards maniacal excitement with convulsions. These were preceded, as she told me afterwards, by the sensation of a flame of fire rising from the uterus to the brain. The occurrence of the menstrual period aggravated her symptoms. She had been treated, before I saw her, by
bleeding and purgatives. I directed the application of leeches to the vulva, a day or two before the menses were expected. They were applied, and the consequence was a severe menorr-

hagia. I was suddenly sent for, and found her lying on the floor, almost in a state of syncope from loss of blood. A large chamber vessel was filled with blood, and a considerable quantity on the floor of her cell. The application of cold water, arrested the hemorrhage, and the results were most gratifying.

Since that period, the patient has never had another attack; she is now perfectly well, a fine looking, large, fat, healthy woman as you would wish to meet. This case is a fine illustra-
tion of the influence of a local affection in determining convul-
sive paroxysms, and of the advantage of local depletion in re-

lieving and curing them, when dependent on inflammatory irri-
tation. Along with the preceding treatment, leeches or cups along the vertebral column, with setons or caustic issues, according to particular circumstances, are often to be used as adjuvants. Such, gentlemen, is a systematic plan for the treat-
ment of epilepsy, founded on the rationale of the phenomena of the disease. No doubt it will often fail, and you will feel tempted to resort to empiricism. There is an almost endless variety of empirical remedies, many of which I have tried in the course of my practice, but without beneficial results. I will enumerate some of them, as, when a systematic method fails in the treatment of any disease, we must then resort to a tentative practice or empirical remedies.

Equal parts of mustard seed, ginger, and sage, is a remedy for which great success is claimed. I have heard of one or two reputed cures from its use, but it uniformly failed in my hands. The mustard seed produces daily movements of the bowels, the sage exercises a tonic influence, and the ginger is an agreeable stimulant.

Baron Sloet, of Holland, who has great repute for his success in the treatment of epilepsy, has given the following as his re-
medy. It consists of one pound of the dictamus albus creten-
sis, or white fraxinella, and of the pulvis zedoaria zjss. There are two kinds of the dictamus, one Italian and the other Cretan; Sloet says the Italian is of no use. The dose of the mixture is about two scruples, more or less, according to the case. It is given in the water of linden flowers. Four doses, in bad cases, have been given in a day, but the Zedoary is then reduced to one-
half. Immense success is claimed for this prescription. I can say nothing of its value, from my own experience, as I have never been able to obtain the dictamus from any of our apothe-
caries.

The internal use of lunar caustic as a remedy for epilepsy is now pretty nearly abandoned. I have often administered it
here, and never saw it do any good. It is besides exceedingly injurious to the stomach, in the large doses recommended. It is given in doses of from four or five to ten, twenty, and even thirty grains, but I should think it very dangerous in doses of this quantity. I once carried it up to these excessive doses in an old case of epilepsy, in this establishment; shortly afterwards, while I was absent from the city, the patient died, with, it was said, symptoms of inflammation of the stomach, but no post mortem examination was made. There are many fatal cases reported as having occurred in European practice from this cause. I have told you frankly of my own mistake, from a sense of duty; for, in books, you are very seldom warned of the bad effects of remedies. Let me then impress it upon you that lunar caustic pushed to high doses, may destroy the mucous membrane of the stomach.

I need not run over any further this list of remedies; I suppose there are at least a thousand of them, and of the most dissimilar characters. I will only add, that, since I have adopted the plan of treating epilepsy, which I have detailed to you, I approach it, if the case be recent, with confidence. The majority of my patients, in private practice, get well; in this house, they are, as you have seen in the history of the patients that were before you, hopeless cases of long standing, which are brought here more for an asylum in their misery, than with any hope of relief.

Remarks by the Editor. We are highly gratified in giving place to Dr. Jackson's, whole lecture on Epilepsy, as containing the most clear and accurate etiology we have seen, of this hitherto too obscure and intractable disease. In the want of sound pathology, Epilepsy has rested for its cure, on gross empiricism and superstition. As Dr. Jackson correctly observes, there are a thousand reputed remedies, and these might, on the same plans which instituted them, have been extended as far as tricks and guesses could have been made to vary. Amulets, human skull bones, and living toads with many other such nonsensical things have been brought into requisition, and each has had its unmerited praise. If nothing else had, the fact of such a number of remedies, as well as their unreasonable-ness should have convinced physicians of the fact of their ignorance of true pathology in this case.

The point urged by Dr. Jackson, and which his cases tend well to illustrate is the primary existence of local irritation and perhaps inflammation, somewhere; it may be almost any where. This is the great secret in this uncontroled affection. It is a
disease, not necessarily uncontrolable in its nature. It is true that there may be primary or secondary causes of it which are not removable by any known power at command; for worms as a cause of intestinal irritation, or disordered action of the vessels of the brain, or hydrocephalus in consequence of some primary irritation, may not prove amenable to our remedial means; but we venture the assertion, that the greatest portion of the misfortunes resulting from epilepsy has been in consequence of a want of knowledge of the "local affection" which was its cause.

Warm bath, sinapisms, &c. whilst they have tended to increase fluxion to the superficial capillaries have done well in acute cases, although the whole rationale of their operation has not been understood, nor the "local affection" they were calculated to correct, ascertained.

The nature and location of the primary affection being ascertained, indications become easily fulfilled, so far as our materia medica will supply the means. And here we wish to add to Dr. Jacksons's remedial resources in this disease, the benefits of our own experience and reasoning on this disease. For nearly twenty years we have been in the use of galvanism in acute and chronic cases of epilepsy, and generally, not always, with the most happy results. This remedy is available both for the correction of the primary irritation, and the cerebral excitement. It is also a remedy, susceptible of application as extensively as the variety of cases, or condition may demand; and which is easily conceived, when its modus agendi is understood. The manner of operation alluded to, is that of lessening excitement at the positive, and increasing it at the negative pole. This is an established fact of our own frequent experiment and constant observation for twenty years past. Nor do we apprehend that more than one experiment will be needed to convince any observer of the fact, that whilst the former will effect the desiccation of a blister on one part, the latter will produce a tough coagulum of lymph, or a deep gangrenous slough in one on another part. This principle we have successfully applied to the cure of chronic epilepsy which had resisted all other remedies; and we have generally exercised a complete control over perpetual convulsions in children from various causes.

We design to treat this subject more fully at some early day, when opportunity may be afforded.
On the Physical action of the Capillary System.—Identification of the force producing motion with the Chemical force.

By John W. Draper, M. D., Professor of Chemistry and Physiology in Hampden Sidney College, Va.

It has been alleged, as a bar to all physiological investigation, that the phenomena of life are of so peculiar a nature, that we must necessarily forever remain ignorant of their causes; that, unlike physical phenomena, which are of a simpler caste, and more within the reach of human understanding, there is something in these, inherently mysterious and incomprehensible. This unphilosophical impression exists not only in the minds of the vulgar, but has extended itself to men well trained to scientific research: it is to be found in the writings of the most eminent physicians, and often affords a plausible screen for professional ignorance. Of all the sciences, medicine is the last to profit by the analytic method—a method which has raised other departments of knowledge to their present rank. Its cultivators pursue the same course of synthesis which was pursued in the days of the Greeks—they reason from hypothesis to fact, instead of from fact to hypothesis.

It may, however, be boldly averred, that the science of life is not more occult than any other of the sciences. We may, by proper investigation, carry it as far; and in the pursuit we shall only stop short at the very same point which has proved impassable in them. Of final causes we know nothing; the immediate agent of life is not more obscure than any of the remote physical agents. If we cannot assign any reason why a seed germinates, can we tell why a stone falls to the earth?—is the one phenomenon any more comprehensible than the other? If we cannot assign any reason why a seed germinates, we can tell why a stone falls to the earth?—is the one phenomenon any more comprehensible than the other? If we cannot tell how it is that one parent should produce a countless offspring, each of which has the power of reproducing beings like itself, neither can we tell how a spark produces an extensive conflagration. It avails us little to say that the principle of life, like the principle of heat, possesses a radiant character, or has a power of self-production. We are equally ignorant how the wide spreading flame results from a spark, and how countless myriads of seeds have originated from one primordial germ.

Some parts of the science of physiology are doubtless within the reach of scientific investigation. Most of the functions of organic life are of this character. Absorption, secretion, circulation, and respiration are carried on through the medium of tubular arrangements of different kinds, endued with specific pow
ers. We are not well informed of the nature of these actions, or of the force giving rise to them. The changes taking place in organic structures partake partly of a mechanical, partly of a chemical aspect, bearing some similarity to other physical changes effected by known agents, yet not identical with them. Some have supposed that the attraction of affinity, or the force of capillarity, was the power in question, operating in an unusual manner, under unusual circumstances; but the majority of medical writers have cut the knot, instead of untying it, and assert that it is a peculiar force, recognised under the title of vital force, life, or nature.

It is, however, most unphilosophical to resort to these vain explanations, which after all afford us no information, substituting only obscure terms as the causes of events not more obscure. Had we approached the problem of pore-action in the same spirit that has led to the development of the causes of magnetic action, a similar and equally striking advance would have been made.

Capillary attraction, considered simply as a mechanical force, is not competent to produce those changes which the pores and narrow cylinders of organic structures give rise to. The products of glandular action are chiefly compounds of a definite number of equivalents, bearing a strong resemblance to the products of ordinary chemical action; but still the operation of capillarity as a force producing motion is undeniable. Can it also produce chemical changes? Is it simply a manifestation of the electric chemical relations of matter?

Previous to entering at large into an examination of the laws of pore-action, this query will demand an answer. We shall find from what follows that capillary attraction is a force nearly allied to, if not identical with, chemical affinity. Now, the investigation of the problem of pore-action naturally divides itself into two parts. 1st. The mechanical conditions of equilibrium and movement of fluids residing in tubes of narrow diameter, but of any length. 2nd. The chemical changes which fluids so situated undergo.

The identification, therefore, of the force producing the mechanical effect, with that producing the chemical changes, is a most important point, and to this I shall direct my attention in the present communication.

There are two phenomena of capillary attraction, the conditions and circumstances of which are well known—the rise and depression of fluids in tubes of a certain diameter, and the adhesion of flat solid plates to the surface of fluids. From the former of these this kind of attraction has derived its name; the latter furnishes us with the means of making researches, devoid of ambiguity, in reference to the physical cause of capillarity.

If a circular disk of glass, or any other solid substance, be
placed on the surface of any fluid, by means of a handle, it will adhere thereto with a certain force, which may be measured by means of a balance, but which is sufficiently evident when attempts are made to lift the disk with the hand. This force is known under the name of capillary attraction. An investigation of its physical cause, and the laws representing it, involve the fundamental propositions of poro-action and passage through tissues.

The phenomena of capillarity are brought about by electricity, operating under peculiar circumstances. They are due to a disturbance of the electric equilibrium, and hence are intimately allied to all kinds of chemical and vital changes.

Place a glass plane on the surface of mercury contained in an insulating vessel; let the mercury be connected with an electrometer by means of a wire. Now, so long as the glass plane and the mercury are in contact, the electrometer evinces no disturbance; but as soon as the plane is raised by its insulating handle, electricity is instantly developed, and the gold leaves diverge. As there was no electrical excitement whilst the plane and the metal were in contact, it is a legitimate inference that the electricity now developed was the cause of their strong attraction or adhesion; and this is corroborated on taking the glass plane to another electroscope, when it will be found that it is electrified positively and the mercury negatively; and that consequently when they are brought into the vicinity of each other, a powerful attraction must result.

A cause of attraction being thus developed, it would be very unphilosophical to seek for other agencies where one so competent to produce all the effects is observed to exist. For in every case where a solid plane reposes on the surface of a fluid not wetting it, a large amount of electricity of very high tension is produced, the electricity of the surface of the plane being always opposite to that of the liquid. They must therefore attract each other. I express here only a fact, not involving any disputed hypothesis whatever, as to whether that development of electricity originates in the mere contact of the bodies, their chemical action, or any other cause; but it is a fact, that when any solid reposes upon any fluid, provided its surface does not become wetted, a development of electricity uniformly takes place, and a powerful degree of attraction must necessarily ensue.

The postulate here introduced requires explanation, for electric excitement is not observed if the solid surface is wetted. Solids bear a peculiar relation to liquids, being wetted or not wetted by them. Most solids, for instance, are wetted by water, and but few by mercury; the surface of the glass is readily moistened by alcohol or oil, but not by melted sulphur or mercury: hence the latter, from its not adhering to the skin, was called by the
older chemists *aqua non mutifaciens manus*. The circumstance, that no electrical excitement is observed when a solid surface is wet, might appear at first sight contradictory to the hypothesis here assumed. A more accurate examination, however, places it in a very different light, and shows that the phenomena observed are exactly such as they ought to be hypothetically. If a disk of glass is placed on the surface of water and then removed, the gold leaves of the annexed electroscope are not affected, for, strictly speaking, no rupture has taken place between the solid and the fluid; the thin film of the latter in contact with the former still remains so: it is only the cohesion of the watery particles that is overcome, not the adhesion of the solid to the fluid, and hence no electrical development appears.

Geometers have shewn the exact relation a solid must bear to a fluid to be wetted by it. It results from the mathematical investigations of Clairault, that if the attraction of the particles of the solid for those of the fluid is more than half the attraction of these last for each other, the solid will be wetted; but if it be less than half, the solid will not be wetted. An experimental proof of this may be obtained by counterposing a disk of glass at the end of one of the arms of a balance, by weights in the scale, and then lowering it on the surface of some mercury in a cup; it will be found that a certain weight must be added in the scale to detach it. Next in place of the disk of glass, substitute a plate of *amalgamated* copper, of the same size and weight, and ascertain the force required to detach it; this will uniformly be found more than double the former weight. The first weight expressed the attractive force existing between a surface of glass and mercury; the second the cohesion of a cylinder of mercury of the same diameter, and the numbers obtained experimentally corroborate the investigations of Ceairault.

I dwell on this part of the phenomenon because it is of no small importance; the same conditions that determine whether or not the surface of a solid is to be wetted, determine also whether a liquid shall pass through a pore, and move forward in a capillary vessel.

The difficulty arising from the non-development of electricity, where the solid surface is wetted, being thus dismissed, we next enquire whether the hypothesis here assumed will give numerical results analogous to those procured by experiment. In other words, if two solids which adhere to a certain fluid, with forces differing in amount, develope upon rupture, quantities of electricity in the same ratio. As a general result, the balance and electrometer prove that this is the case. Beeswax, which adheres to mercury with much less force than gum lac, develops likewise much less electricity. Gum lac, which adheres less strongly than glass, likewise develops much less electricity; but when
we attempt to run a comparison in this manner along a series of substances, we find there are many disturbing causes, which in most cases incapacitate us entirely from making comparable results. Much depends on the relative conducting power of the surface employed. A plate of iron may be separated from a surface of mercury, which does not wet it, with very small disturbance of electric equilibrium, arising from the high conducting power of the metallic plate, which enables a transfer of any free electricity to take place if the plate should tilt on one side, or any thing affect its horizontality during the act of separation. In proportion as the conducting power increases, although the force of adhesion may remain the same, the total effect on the electrometer should diminish; and this is agreeable to experience. Again, the presence of moisture on any part of the touching surfaces will vitiate the results; partly owing to its high conducting power, but chiefly to the circumstance that it hinders the surfaces under trial from ever coming into contact.

The circumstance of this great variability in the amount of developed electricity, is in itself strong evidence of relationship between the supposed cause and the effect. Gay Lussac found that it required a weight sometimes of 158 and sometimes of 296 grammes, to detach a certain disk of glass from mercury, depending on causes which were not very apparent. An effect thus differing in amount indicates a cause of like variability, or subject to many disturbances.

I assume, therefore, that the agent bringing about capillary phenomena is identical with that producing chemical action, and that both may be referred to electricity. The force of cohesion bears the same relation to both, acting on both as a disturbing power. Nay, we may even take a much more extensive view of the matter; and from the ratio these forces bear to each other, predicated the effect of their combined action, which may be classed under three distinct heads.

1stly. If the force of attraction of the particles of a solid, for the particles of a fluid, exceeds half the cohesive force of the latter for each other, but is not equal to the whole force, the fluid will pass through a pore formed of that solid substance; and in capillary vessels consisting of it, will be depressed below its hydrostatic level.

2ndly. If the force of electric attraction of the particles of a solid, for the particles of a fluid, exceeds half the cohesive force of the latter for each other, but is not equal to the whole force, the fluid will pass through a pore formed of that solid substance, and in a capillary tube of it, will rise above its hydrostatic level.

3dly. If the force of electric attraction of the particles of a solid for the particles of a fluid, exceed the whole cohesion of the latter, chemical union ensues.
In thus assimilating the force producing pressure on planes, and motion in narrow pipes, with the force producing chemical changes in the constitution of bodies, a great advantage is gained in simplifying physiological investigations in respect of the action of capillary systems. It is an electrical force that determines all kinds of constitutional changes developed in bodies by the chemistry of organic life, and it is a manifestation of the very same force that carries some fluids along the almost invisible vessels of living structures, and denies to others a passage. All the phenomena of inorganic chemistry are the result of the balancings of the force of cohesion on the one hand, and electrical attraction on the other. If Berthollet was wrong in supposing that chemical affinity as an acting force had no existence, other chemists have equally erred in supposing that all kinds of changes, without any limitation, were due to it. Whether we investigate the phenomenon of chemistry or of capillarity, we have the same forces to deal with, acting as antagonists to each other; and hence the whole effects imputed to capillary attraction may be regarded as belonging to that extensive class which the science of chemistry considers.

There is a variety of facts recorded by writers on capillary attraction, which an application of these principles readily explains, though hitherto they have been regarded by philosophers as remarkable anomalies. Such is the observation of Huygens, that it was possible to cause mercury to stand in a barometer seventy inches high; or that of P. Abat, of a single deviation in the hydrostatic level of the same fluid in different branches of a syphon.

The force of attraction which produces pressure, when plane solids repose on the surfaces of fluids, under other circumstances produces motions of various kinds. If a tube of small diameter be plunged into a liquid, the level within the tubes does not correspond with that outside, except under very peculiar and very unusual circumstances; but sometimes the liquid rises far above its level, and sometimes it is depressed, the amount of disturbance taking place in both cases being in the inverse ratio of the diameter of the tubes. All fluids which can wet the surface of a narrow pipe rise in it; those which cannot wet it are depressed. Geometers have shown, that if the attractive force exerted by the pipe upon the liquid be more than half the cohesion of the particles of the latter for each other, there will be a rise; if it is equal, the level of the fluid inside and outside of the pipe will be the same; and if it be less than half, there will be a corresponding depression. Now, extensive observation proves that these three cases are always accompanied with certain peculiarities, as respects the surface of the fluid in the tube, as is represented.

In every case where the fluid rises, it is observed to be terminated with a surface concave upwards. If the level is the same
as it should be hydrostatically; then the terminating surface is a plane; and if there be a depression, then the surface is convex upwards. Whenever, therefore, a tube of narrow diameter is placed in a fluid, if the action of the particles of the tube on the particles of the fluid be less or more than the attraction of these last for each other, motion ensues, and the fluid falls or rises to a height determined by the diameter of the tube.

If the tube be perfectly cylindrica1, and there be conveyed into it a short column of fluid, it will be found that this fluid rests in any position, provided the tube be horizontal. But if the tube be conical instead of cylindrical, and a little column of fluid, be introduced into it, then a motion of the whole drop ensues, the progress being made towards the narrow extremity. In this way capillary attraction is competent to produce motions of various kinds.

All these disturbances of ordinary level, and these motions, are found to result from the action of the surface of the liquid. From a consideration of these disturbances, Laplace deduced his theory of capillary action; a theory which, with a little modification, is now generally adopted. The thickness or thinness of the tube has no effect whatever on the phenomenon; nor does the substance of which it is composed exert any influence. Every thing is made to depend on the figure of the bounding surface, which necessarily acts more and more powerfully as the diameter of the vessel becomes narrower.

Capillary attraction does not take place only between solids and fluids; it is exhibited when solids alone are made use of. In virtue of this power, two pieces of lead cohere with great energy to each other, as also is the case with two planes of polished stone, or plates of glass. When glass is used, electricity of very high tension is readily detected, one of the pieces being positive and the other negative, it would, I suppose, hardly be denied, that the force operating in the case of glass is also the force that operates in the case of stones. Is it not, then, a legitimate supposition, that the adhesion of two pieces of lead is brought about by the same agent, whose presence is masked by the high conducting power of the metal?

Between solids and gases capillary action likewise takes place. On the surface of all kinds of solids atmospheric air remains in a state of condensation, as is made evident when such bodies are placed beneath water under an exhausted receiver; the air appearing in copious bubbles, studding the surface of the metal.

Now, having a power, the operation of which over inorganic masses is so extensive, it is for us to enquire how far the phenomena of organic systems depend upon its working. Those numerous pores and pipes, and capillary vessels, which abound in all kinds of living structures, but of whose action we are so igno-
rant, point out to us capillary attraction as one of the great forces in play, determining all kinds of motions and physical changes. To identify the force producing motion of a chemical character, with that effecting physical change, gives a unity to the action of powers which have hitherto been multiplied without avail, and stamps simplicity and symmetry on actions that are very diverse.

Hitherto we have treated of capillary attraction as a force producing certain simple results, as the adhesion of pieces of metal, or of plane solids to the surface of fluids, or the rise or fall of fluids in tubes. All these consist of binary arrangements; and it is probable, as will hereafter be shown, that certain simple processes in the organic kingdom are example of similar simple forms of action. But, arrangements of a more complex character may be imagined, and are known to exist, where, instead of there being two, three or more elements are concerned. Ternary arrangements lead to the consideration of the doctrine of endosmosis, by which we understand the passage of two fluids or gaseous bodies through a narrow channel, in opposite direction, at the same time.

The law of horizontality of fluids meets with a remarkable exception when the containing vessel is a capillary pipe, as has been already stated; for a change of level ensues, according as the fluid will or will not wet the walls of the tube. Laplace has shown that the immediate cause of this rise or fall is the peculiar figure of the surface of the liquid in the pipe. The theory embracing these facts will be found in the supplement to the tenth book of the *Mecanique Celeste*. M. Poisson, from a consideration of the heterogeneity of the liquids in ternary arrangements, has endeavoured to refer all the phenomena of endosmosis and transudation through tissues to common capillary attraction, but with a want of success not usual to the labours of that excellent mathematician; not that we are to deny the result to which he has arrived, for that is only the expression of a fact, but the steps of his investigation are unquestionably faulty, for the same reasoning will apply to tubes of all diameters, and it does not satisfy the condition that both liquids shall pass in opposite directions at the same time.

It is not necessary to proceed here to discussion of the remoter data of the mechanical part of this question, nor to refer to the elementary conditions of pressure upon a surface, nor to the action of solid bodies alone; though in each of these cases the investigation might readily be carried out to the conditions of motion and repose. Let us proceed to investigate the case where two fluids are adjacent to each other, but do not communicate, except through a pore. This case involves the theory of tissue action. Taking for granted the theory of Laplace, of the equilibrium of liquids in capillary tubes, we may assert,
1stly. That if two fluids $A$, and $B$, whose attraction for each other is greater than the cohesion of the homogeneous particles of either, communicate with each other through a pore, the walls of which attract the one more than the other, motion through that pore will ensue, both liquids passing at the same time in opposite directions.

2ndly. If we take particles receding from the axis of the pore, the forces soliciting any one of them to move in a direction with the axis, gradually decrease, whilst the rectangular forces increase in intensity.

3dly. In the axis of a pore and two molecules, $a$ and $b$, situated in the fluids $A$ and $B$ respectively, are acted upon by two system of forces—one tending to produce motion parallel with the axis, and the other at right angles to it. The forces which tend to produce motion parallel with the axis, and the other at right angles to it. The forces which tend to produce motion parallel with the axis are not compensated, but all the rectangular forces compensate each other.

4thly. Here the surfaces of the fluids $AB$ are described by a figure representing a pore, by two parallel lines, with a curved line passing from one line to the other, to represent the conical shape of the fluid $B$, the axis of which is the axis of the pore; and to that of the fluid $A$, a corresponding concavity and passing up the sides of the pore to where the cone of the fluid $B$ leaves them. In this figure, $b$ marks the apex of the cone of the fluid $B$, $a$ and $c$, the points where this fluid leaves the sides of the pore, and to which the fluid $A$ rises in contact with the sides, and lastly, a line is drawn transversely to the pore, representing an imaginary plane, and marked $c_b$, and dividing the fluids $A$ and $B$, where they pass each other. This figure is thus described by Dr. Draper:

Now, the forces which act on the side $A$ of the plane tending to produce motion in $B$, are much greater than the forces on the other side tending to restrain it. Moreover, the action of these forces is at a maximum at the point $b$. The figure of contact, therefore, becomes changed, the point $b$ advancing along the axis, and making the opposing particles retire in the directions of least pressure; the fluid $B$ continuing to pass down the axis of the pore; and the very same reasoning shows that at the same time $A$ will pass in the opposite direction. If, therefore, two fluids are on opposite sides of a barrier, and only communicate with each other by a pore through it, motion in that pore will ensue, both liquids passing in contrary directions, simultaneously and co-axially.
5thly. And the same reasoning which applies in the case of a pore, will also apply to a cylindrical plate or tissue, whose apertures are all capillary tubes.

30. In the view of the subject, as is evident, I have imputed the phenomena of tissue action to the force of capillary attraction, taking into account the heterogeneity of the system of fluids. I have not spoken of the relative difference of cohesive force, which, as might be shown, aids in producing the very same results. From these considerations we can deduce the condition of equilibrium, for it is evident that as soon as the chemical composition of the fluid on each side of the pore becomes identical, the forces soliciting motion each way, antagonize each other completely. It was the heterogeneity of the fluids that gave rise to the first movement, and kept it up; but so soon as the media on each side became homogeneous, motion ought to cease; and that this is the case, is abundantly proved by experiment.

With respect to the diameter of pores, there are some important conditions. Let a circle a b c be a pore, whose diameter exceeds double the radius of the sphere of sensible attraction of its own particles; or, in other words, whose axis is beyond the influence of the attractive force of its own walls. If a cylindrical column of fluid, c f g; of a certain diameter, moves through it, the circumferential parts of that cylinder will be brought under the direct influence of the walls of the pore, but its axial portions only indirectly through the intermediate of the cohesion of the fluid itself. We may say, therefore, that the axial portions of such a cylinder are unaffected by the pore itself; but if the diameter of the pore be supposed continually to diminish by degrees, all parts of the cylinder will at last be brought within the influence of the walls of the pore. Another mode of viewing this condition of things may place it in a still clearer light. When a liquid rises in a capillary tube of certain diameter, only those portions are under the direct influence of the attractive force of the tube which are nearest to it, the central columns being entirely unaffected; as, when water jets out through a narrow pipe, it is only those portions that are directly in contact with the sides of the pipe that are subject to its resisting influences, any disturbance which the central particles feel arising only indirectly from their cohesion. A pore in a piece of charcoal may suffer a column of water to go through it without in anywise affecting the central portions of that column, by reason of its size; but should the diameter of the pore be made to decrease, it is obvious a limit might finally be reached, when every particle that passed should come under the direct influence of the physical force of the pore, and none pass by mere leakage or oozing. The importance of this element, viz: the variability
of the diameter of the pore, is greatly to be insisted on. It has heretofore been pointed out in this Journal, and in the Journal of the Franklin Institute, but does not seem to have attracted that attention which it deserves. Chemists are still in the habit of co-ordinating the passage of liquids, through stucco plugs and pervious barriers, with that through tissues and liquids. Physiologists carry out the same error, in supposing that there is no essential difference in the motion of fluids in the capillary and through the pores of tissues.

It is not alone in the vital functions that we meet with applications of the principles of capillary action; the mechanical functions furnish numerous instances. The organs of progression of some animals which delight to walk upon water, are provided with an apparatus of hair, calculated to repel that fluid; hence gnats and certain other insects have no difficulty in passing over the surface of water. By the same means the hydra suspends itself, without effort, in that element; for having exposed for a time the extremity of its foot to the air, so that it may become dry, it, by repulsion, forms a cup-shaped hollow around it, the head of the insect hanging down in the water beneath.

Organs of exhalation and absorption are unquestionably capillary systems. The stomata of plants, which botanists suppose to discharge these functions, are of this character; they furnish a well marked instance of the accommodation of apparatus to suit physical conditions. Plants growing beneath the surface of water have no stomata; but if, by any means, they reach the atmosphere and vegetate in it, these organs are produced for the purpose of discharging, under the new order of things, offices which were accomplished by other means. The spongioles of roots, acting as capillary systems, drive the fluids they absorb from the earth, through the tubular vessels of trees, with a force of several atmospheres, extending themselves at a due distance from the trunk, where they may meet with the water that falls from the leaves. In some orders of living things, which are not accommodated with distinct orifices for the reception of food, nutrition is accomplished by capillary systems. In this manner the porifera expose a wide surface to the seas, and draw in nutrient matter through their microscopic pores, discharging the surplus as excrementitious matter through their papillary orifices.

Like the lungs of the mammalia, the leaves of trees are respiratory organs, composed of capillary systems; their mechanical functions are not so complete, though their chemical functions may be identical. They demand no nervous cords to be spread upon them to give them motion and keep up their play; the breezes in which they tremble perform the office of carrying off
the exhaled impurity, and the rays of the sun furnish them with their vital force, enabling them to effect the decomposition of carbonic acid, and provide a store of carbon for the purposes of the economy.

In identifying the mechanical with the chemical force of organic structures, we see another proof of that unity of design existing through the entire range of living things. Functions of all kinds are accomplished by arrangements of every sort in different classes; yet no one will deny that they all follow one original type. Digestion, as it takes place in the stomach of man, appears a highly complex phenomenon, depending, as some say, partly on the tissue action, partly on nervous and partly on other powers. But are not analogous changes wrought without all this complexity of apparatus in the hydrated, which may be taken as the elementary type of the stomach; or in the tænia, which is a colony of stomachs? The polygastric infusoria, some of which have hundreds of these organs, and even the mammalia, do not digest more perfectly than the hydra, a carni-

verous polypus, which may be turned inside out without detri-

ment. The laws of digestion, followed by the one, are followed too by the other. If the organ of the one respects the presence of living matter, and refuses to act on it, so does the other; yet the one is furnished with a highly complicated assemblage of muscular bands, of glandular apparatus, of blood-vessels, of nerves, and the other is not.

In the higher orders of life processes are carried on by multiplied apparatus, without, however, deviating from the principle of the original simple type. The gift of a new faculty, or the addition of a new organ, brings with it a corresponding change in the arrangement of the whole plan. An engineer, who wishes to adopt a machine to the execution of some new task, alters every part, no matter how remote it may be from the acting point, until every wheel and lever executes its work co-ordinately with all the others; the prime mover remains unchanged, though the general character of the machine may have under-

gone a renovation; and as all machines, no matter of how many parts they are composed, nor of how many wheels they consist, nor how intricate soever may be their resulting motions, may have their power reduced to and represented by a simple lever, so also organic functions, though often brought about by highly complex arrangements, find simple representatives in the lower orders of life. A concentration, or a development of any organ, is often demanded by change in a remote part of the fabric, when even the connexion may not be very evident. Animals, consisting simply of digesting cavities, require no vascular system for propelling or containing a nutritious fluid; they are not in need of separate tissues, devoted to its oxygenation, nor
of an insulated respiration, nor do they demand distinct biliary organs; when the nutritious chyle is produced in the stomach of zoophytes, it finds its way into the intercellular spaces, and there circulates without vessels, undergoing through the external tegument the chemical changes. In many insect tribes, the bronchial tubes are spent upon the peritoneum, and respiration takes place directly upon the alimentary canal. With, modification of functions, change of external figure is always involved; and as these progress together, systems of living things are constructed, referrible to one common original type. It is thus, in the echinodermata, we trace up successive steps from the sea urchin to the asterias, and from that to the pentacrinite; a development of the same parts of the structure continually taking effect, until the extremes bear no sort of resemblance to each other.

Had the production of living things been effected by the operation of second causes, we might look with Lamarck, for some law of successive development, which should contain the origin of each order and species. We might regard the rudimentary teeth of whales, or the subcutaneous feet of the ophidia, as abortive results of such a law. Considering, the brain as a development of the spinal axis, we might trace in the form of the cranial bones, a development of a system of vertebrae, brought about as a consequence of the very same laws. We might run a parallel of analogies, between the crustaceous and vertebrated animals, and exogenous and endogenous plants; we might take the cephalopodous mollusks, as furnishing the first rudiments of an internal skeleton, and trace its increasing complexity to meet certain ends, until its perfect development in the mammalia. In this latter class, we might dwell upon the uniform existence of seven cervical vertebrae, as giving evidence of a persistence in the plan of structure, in species so remote from each other, as the cameleopard, the whale and the mole. Parting from the dorsal vessel of insects, the first rudiments of an aorta, we might follow out the complications of the higher arterial systems. In all the varieties of respiration, whether aquatic, aerial, or mixed, we might see the reproduction of one original chemical design, and in every instance of a concentration of machinery or functions, we might find an impress of the action of external formative agents.—Hampden Sydney College, November 20th, 1837.
Dr. Canquoin's Formulae for Preparing the Phagedenic Paste.

No. 1. Chloride of zinc one part, wheat flour two parts.
2. Chloride of zinc one part, wheat flour three parts.
3. Chloride of zinc one part, wheat flour four parts.
4. Chloride of zinc one part, chloride of antimony half a part, wheat flour two parts and a half.

Twenty four to thirty drops of water are to be added for each ounce of chloride.

The preparation of the phagedenic paste requires the utmost care and attention; hence to procure it properly, the following instructions must be scrupulously followed. The chloride of zinc, reduced to powder, is to be mixed, as quickly as possible, on a slab, with the given quantity of flour. One half of the mixture is immediately to receive its proportion of water, and to be worked up progressively with a spatula, until it forms a homogeneous honey-like paste. This paste is to be brought to the desired stiffness by triturating with the remainder of the dry ingredients, well beat for a few seconds, and then rolled out into cakes or wafers, of from half a line to four lines in thickness.

The quantity of water must be proportionally augmented, according to the increased amount of flour in the second and third formulae.

The antimonial paste, No IV., is to be moulded into a crayon shape; because, as it preserves constantly the consistence of soft wax, a suitable thickness can also be given to it, so as to adapt it to the form of certain cancerous tumours, presenting inequalities of surface.

As, however, the flour employed in the above formulae consists of starch, gluten, and vegetable albumen, it will produce a complex combination with the chloride in the phagedenic paste, which may blunt or interfere with its erosive action; or possibly undergo some fermentative change when applied to an ill-conditioned ulcer, and the viscosity of the compound give rise to more or less difficulty in the manipulation. It therefore occurred to Dr. A. Ure, of Glasgow, that if some inert, inorganic powder were substituted for the vegetable matter, capable of absorbing and retaining a sufficient quantity of moisture to form a paste, which should be a simple mechanical admixture, it would then be possible to turn to account the full escharotic powers of the chloride. The anhydrous sulphate of lime, in impalpable powder, will be found to realize the above conditions. Mixed with the chloride of zinc, in the proportions already indicated, a putty-like paste
Phagedenic Paste.

may be obtained, after these have been well incorporated together
with a few drops of water.*

The paste so prepared is perfectly plastic. In its composition
the calcareous sulphate seems to perform the part of a porous
medium, which allows the escharotic gradually to exude into
the morbid texture. In proportion as it is abandoned by its de-
liquefied ingredient it acquires a firmer consistence, until at
length it becomes concrete, and constitutes an impervious case
for the eschar.—London Medical Gazette, 19th Dec., 1835.

Method of using Dr. Canquoin's Phagedenic Paste.—
Where the integuments are sound, the epidermis should be re-
moved by means of a blister; and on the following day one or
the other of the preparations described in the preceding article,
corresponding to the thickness of tissue to be destroyed, is to be
applied to the cutis of the diseased part. The sensibility of the sur-
face must also be considered; for should it possess but a feeble
degree of vitality, the most powerful form is to be preferred.

The paste No. 1. four lines thick, applied during four days, is
capable of producing an eschar of from one and a half to two
inches in depth. The same paste, three lines thick, applied du-
ring three days, will furnish an eschar of one inch, at least, in
depth; the same compound, two lines thick, will in two days de-
terminate an eschar of not less than half an inch. The paste No.
I., of one line, will yield, in twenty-four hours, an eschar of three
lines. Finally, the paste, No. I., of half a line, will produce, in
the same time, an eschar of at least one line.

These changes will manifest themselves with the above pre-
cision only on tissues endowed with a considerable share of sen-
sibility, and of which the consistence is nearly normal. In the
gristly (lardace,) almost fibro-cartilaginous degeneration, about
one-third is to be deducted from the thickness of the eschar above
mentioned.

No. II. is employed in case of cancerous ulceration and super-
ficial carcinoma, which are attended with much pain.

No. III. is eligible in every species of cancerous affection, oc-
curring in nervous subjects who are incapable of supporting the
violent pain which the preceding more concentrated escharotics
might occasion. It is so much less productive of suffering, as
it is slower in its action.

Lastly, No. IV. the antimonial paste is best adapted to nodula-
ted cancerous tumours, for which a most decided escharotic ac-
tion is required.

* Special care must be taken to prepare a pure sulphate, by calcining the crys-
tallized gypsum at a gentle heat in an oven; for the Paris plaster of the shops is
often sophisticated with chalk or whitening, which would immediately decompose
the metallic chloride, and impair its qualities in a greater or less degree.
These preparations, applied over a denuded surface, excite, in a few minutes, a feeling of heat, which, ere long, rises to a burning heat; which unpleasant symptoms may be relieved by an opiate enema.

When the operation of the paste is complete, it may be gently taken off, and the eschar covered with an emollient poultice until its separation, which usually happens, as formerly stated, from the eighth to the twelfth day, according to the thickness of the layer employed. The application is to be repeated again and again till the whole morbid structure is removed; after which the surface is to be treated with simple digestive ointment; or, in case of an acute cancer, with cataplasms, until the cure is finished.

In certain modifications of carcinomatous tumours that are voluminous and prominent, Dr. Canquoin, instead of applying the caustic on the anterior segment, surrounds the base with a ring of paste two lines broad and four deep.

Should the carcinoma present a central depression, its destruction may be accomplished by using the phagedenic paste in a spiral form.

The chloride of zinc will probably form a valuable means of curing incipient cancerous ulcers of the uterus. These, in their early stage, may be looked upon as purely local affections, since Bayle has demonstrated, by numerous dissections, that the tissues of the organ are perfectly sound at the distance of two or three lines above the solution of continuity. In some instances it is reported that they have been healed by the topical use of the acidulated nitrate of mercury, as also by the caustic potash: but as both have been objected to in practice, the former from its tendency to spread over the healthy parts and excite inflammation, the latter because it is too uncertain in its effects, corroding too profoundly, and giving rise to fatal inflammation, amputation of the cervix has come to be regarded, by many, as the sole alternative for eradicating the disease. Now, the chloride of zinc, liable to none of the inconveniences that have been imputed to these other caustics, empyroyed in its most concentrated form, will furnish its characteristic dry, easily definable eschar, destroying the morbid parts and leaving behind a healthy surface, which will rapidly cicatrize; thus saving the patient the necessity of submitting to an operation which, although unaccompanied by much pain, is yet most repugnant to her feelings.

Cauterization with the chloride must likewise prove advantageous in carcinomatous affections of the tongue, lips, and of the rectum, where arsenic, from its powerful poisonous qualities, is totally precluded.—Ibid.

Dr. Canquoin's Resolvent Pomade.—The following ointment is recommended for effecting the destruction of extensive
scirrhous surfaces, previously flattened by long-continued methodical compression, as also of certain dense scirrhi. Take of oxygenated pomade, prepared by triturating eight parts of boiling axunge with one of nitric acid, one ounce; melt this by a gentle heat, and add to it three drachms of the acid subdento-nitrate of mercury. Increase the heat a little, till the nitric acid becomes decomposed, so as to proxygenate the pomade, and bring the salt into intimate union with it. The ointment, when, well prepared, is very hard, and of an orange-yellow colour.

Dr. Canquoin describes the case of a woman affected with a scirrhus of one half of the face, who had been previously treated for it, but without benefit; and she seemed doomed to become, ere long, a victim to the frightful malady. However, thirty-five days' application of the above ointment sufficed to work a cure, without the slightest trace being left.—Ibid.

Dr. Canquoin's Maturative Ointment.—Dr. Canquoin has procured in two or three months time, and even less, a softening and suppurating of indolent scirrhous tumours of a violet-red hue, by the following application. Take of the acetic infusion of the bark of spurge laurel, \(\frac{3}{5}\)iss.; of molasses, \(\frac{3}{5}\)iss.; olive oil, \(\frac{3}{5}\); ox bile, \(\frac{3}{5}\)j. Mix together, and reduce, by the aid of heat, to the consistence of an ointment. Withdraw the heat, and add, unguent. basilic. \(\frac{3}{5}\)iss.; cerati fusci,* \(\frac{3}{5}\)iss. Mix the whole well together, and incorporate with each ounce a drachm of the subdento-nitrate of mercury.—Ibid.

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On Sleeplessness, and its treatment. By R. J. Graves, M.D. Extracted from a clinical lecture delivered at Meath Hospital, Dublin.

Sleeplessness is a very curious result of disease. It accompanies certain morbid conditions of the system brought on by actual disease, or by grief, care, and various other forms of mental disturbance, continues to harrass the unhappy sufferer night after night, and frequently resists the most powerful and decided narcotics. I do not intend to enter into any inquiries respecting the different states of the constitution in which it occurs; my purpose is merely to offer a few practical remarks on the more obvious and striking examples, with the view of illustrating the cases to which I have directed your attention.

There is a form of sleeplessness which is frequently the pre-

* Or Onguent de la Mere, prepared with litharge, axunge, butter, and mutton suet, of each 25 parts, yellow wax 18, and black pitch 8.
Sleeplessness and its Treatment. [May

cursor of insanity, and which has been well described by my friend Dr. Adair Crawfiord. The watchfulness in such cases is accompanied by the well known symptoms of incipient mental derangement, and its treatment is therefore inseparably connected with that usually resorted to in cases of threatened insanity, and embraces employment of means moral as well as physical. Of these it is not my intention to speak; I may observe, however, that Dr. Crawford has found opium, gradually increased to very large and frequently repeated doses so as to produce sleep, the best remedy.

In the case of jaundice, the patient passed several nights without any sleep. He was just beginning to recover from the jaundice when this new symptom appeared, and I directed your attention particularly to the circumstance, because every manifestation of nervous derangement connected with jaundice should be carefully watched. It frequently happens that jaundiced patients sleep too much, and in some cases the disease is accompanied by convulsions, succeeded by coma, most alarming symptoms, and almost invariably the harbinger of a fatal termination. Dr. Marsh was the first who directed our attention to the great fatality of those cases of jaundice in which convulsions occur: I have seen but one instance of recovery. It was in the case of a gentleman labouring under icterus, very considerable hepatitis, with enlargement of the liver and ascites. He was treated by Dr. Osborne and myself, and had at least a dozen long and violent convulsive paroxysms, ending in coma, succeeded by temporary forgetfulness and fatuity. Repeated leeching of the right hypochondrium, active purgation, and mercurialization of the system removed all the symptoms of disease, and he slowly but perfectly recovered. A very able and original writer, Dr. Griffin of Limerick, has detailed the particulars of some interesting cases of this nature in the Dublin Medical Journal. You perceive, therefore, that in jaundice every thing denoting an unusual state of the nervous system, whether it be too much sleep, or too little, demands your attention.

In this man's case the jaundice was the result of an attack of hepatitis. We treated it with leeches, blisters, and the use of mercury, and in the course of a few days the stools became copiously tinged with bile, and symptoms of improving health appeared. At this stage, the dejections being bilious, but the jaundice still remaining, he began to exhibit symptoms of restlessness and nervous irritability, and finally became perfectly sleepless. Here, gentlemen, we had to deal with a new symptom, extremely harrassing to the patient, and likely to react unfavourably on the original disease. As a preliminary step I determined to evacuate the bowels, and for this purpose I prescribed
a purgative draught, consisting of five ounces of infusion of senna, half an ounce of sulphate of magnesia, a drachm of tincture of senna, and a scruple of electuary of summony. My object was to purge briskly, and then give a full narcotic. In all cases of jaundice depending on hepatic derangement, after you have succeeded in producing bilious evacuations, you should never omit prescribing an active aperient every second or third day for the space of ten days or a fortnight, with the view of carrying off the remains of the disease so as to prevent the occurrence of a relapse. Hence you will find such cases very much improved by the use of Cheltenham water, taken every day for three or four weeks after the reappearance of a bilious tinge in the alvine discharges. The stimulus of the purgative causes an increased flow of bile in the intestines, which removes the hepatic congestion, and carries off what is popularly termed the dregs of the disease, and promotes a rapid and complete recovery. It is a simple but successful practice, and I would advise you never to omit its employment in cases of this description.

With respect to purgative mixtures, I may observe that you should prescribe a larger quantity of the infusion of senna than is generally ordered, if you wish to secure its certain and decided operation on the intestines. Hospital nurses, who reason from facts and experience, know this, and when directed to give a senna draught they always give a small tea-cupful. They administer from four to six ounces at a time, and I have observed that in this way the action of the medicine is more certain, and the benefit derived from it more extensive. I am convinced that the usual mode of giving this valuable purgative in private practice is bad; the quantity given is too small, and consequently it is necessary to repeat the dose several times, a mode of proceeding apt to occasion much nausea and griping, I would therefore recommend a quantity varying from three to six ounces, to be administered in all cases where the patient's condition will admit of free purging. A most accurate observer of the effects of medicines, Mr. Kirby, is in the habit of ordering purgative mixtures in the chronic cases to be taken at bed-time, and not, as is usually done, in the morning. He asserts that their action is milder and less irritating to the bowels when the patient lies in bed and is asleep until the period of their operation, than if he were up and about.

After the purgative had produced four copious discharges, I prescribed eight minims of black drop, to be taken at a late hour in the evening. Whenever I give opiates to procure sleep, I always observe the rule laid down by Dr. M'Bride, (a celebrated physician of this city) to select the period at which nature usually brings on sleep, and which varies according to circumstances and the habits of the patient. Whenever you have to deal with
watchfulness in patients labouring under morbid states of the constitution, as for instance, hectic, inquire when the tendency to sleep usually occurs, and administer your narcotic about an hour or two before its occurrence. It is between three and five o'clock in the morning that the inclination to sleep is strongest; it is about this time that sentinels are most apt to slumber at their post, and consequently attacks upon camps or cities, made with the intention of effecting a surprise, are usually undertaken about this period of the morning. How well marked is the periodic tendency to sleep at this hour in all patients labouring under hectic fever produced by whatever cause. How often do we hear the poor sufferer complain of restlessly tossing about in his bed until three or four o'clock in the morning, when at last sleep, welcome although uneasy, for a few hours separates the patient from his pains. If given at an early hour in the evening, the effect of the opiate is not coincident with this periodic attempt of the constitution, and it fails in producing sleep, but if exhibited at a late hour, it begins to produce its soporific effect at the very time when nature inclines the harrassed sufferer to repose, and the result of these combined influences is a deep, tranquil, and refreshing sleep. By observing this simple rule, I have often succeeded in producing sleep in cases where various narcotics had not only pained, but even added considerably to the irritation and discomfort of the patient.

In cases of sleeplessness, where you have administered an opiate with effect, be careful to follow it up for some time, and do not rest satisfied with having given a momentary check to the current of morbid action. To arrest it completely, you must persevere in the same plan of treatment for a few days, until the tendency to sleep at a fixed hour becomes decidedly established. You must give an opiate the next night and the night after, and so on for five or six nights in succession, and where the watchfulness has been of an obstinate and persistent character, narcotics must be employed even for a longer period and in undiminished doses. I do not allude here to the sleeplessness which accompanies confirmed hectic and other incurable diseases; such cases require a particular mode of treatment, and generally call for all the varied resources of medicine. But in those instances of watchfulness, which are frequently observed towards the termination of acute diseases, it is always necessary to repeat the opiate for some time after you have succeeded in giving a check to this symptom. You need not be afraid of giving successive opiates lest the patient should become accustomed to them, and a habit be generated; for the rapid convalescence and renewed health, which are wonderfully promoted by securing a sound and refreshing sleep, will soon enable him to dispense with the use of opiates.
Another disease in which sleeplessness is a prominent symptom, is delirium tremens. We have had an example recently in our wards, and you have seen the means employed to overcome it. The patient came into the hospital with symptoms of extreme nervous excitement and watchfulness, which had continued for some time, and were brought on, as is most commonly the case, by repeated fits of intoxication, succeed by a pause of perfect sobriety—in Irishmen the result of necessity or accident. In this man you must have remarked the signal benefit which attended the use of tartar emetic and opium, and how rapidly the watchfulness disappeared. I shall not enter into the details at present, as I purpose to return to this subject on a future occasion.

There is, however, one form of nervous irritability, frequently observed in persons who are in the habit of drinking freely, but without running into excess, and presenting, as it were, a shadow of delirium tremens, on which I shall make a few remarks. This curious state of the nervous system is generally found to exist in men about the middle period of life, and who consume a larger quantity of spirituous liquors than they are able to bear. Such persons, without suffering in appearance, or losing flesh, get into a chronic state of disturbed health, manifested by nausea, and even dry retching, in the morning, loss of appetite, and impaired digestion; but, in particular, by a deranged and irritable state of the nervous system, and by watchfulness. This forms one of the most distressing symptoms, and the patient generally complains that he cannot get any sound and refreshing sleep, that he lays awake for hours together, and that when he slumbers his rest is disturbed by disagreeable dreams, or broken by slight noises. How are you to treat this affection? I can give you a valuable remedy for this deranged state of constitution—one which I have often tried, and which, from experience, I can strongly recommend. It is a mixture, composed of tincture of Colombo, quassia, gentian, and bark—say an ounce of each; and to this is added a grain, or even two, of morphia. A compound tincture, somewhat analogous to this, is much in use among military gentlemen and others, who have resided for a considerable time in the Indies, where, from the heat of the climate, and the prevalence of intemperate habits, the stomach becomes relaxed and the nervous system irritable, so as to represent, in a minor degree, the symptoms which characterize delirium tremens. You perceive I combine several tonics to form this mixture, because they are well known to produce a more beneficial effect when combined than when administered singly; and I add to these a narcotic, which has the property of allaying nervous excitement without deranging the intestinal canal. The dose of this mixture is a tea-spoonful three or four times a day, and the best time for taking it is about an hour before meals.
It gradually removes the nausea and debility of stomach, lessens nervous irritability and watchfulness, and, with a proper and well-regulated diet, and attention to the state of the bowels, I have seen it produce excellent effects. In such persons much benefit is derived from the use of the tepid shower-bath.

Fever is another disease in which sleeplessness is a symptom, frequently of an unmanageable character, and pregnant with danger to the patient. You witnessed this in the case of the boy who lies in the small Fever Ward, next to the man who is at present labouring under general arthritis. This boy had fear of a mild description, and unattended by any bad symptoms. His case scarcely required any attention, and he had almost arrived at a state of convalescence without the aid of medicine, when he began to lose his rest, and absolutely became sleepless for several nights. I beg your attention to this case, for many reasons. In the first place you have seen that we tried many remedies without success, and afterwards fortunately hit on one which answered our purpose completely. Let us examine the nature of the medicines prescribed, and our reasons for giving them.

In the first place, we gave, as in the case of jaundice, an aperient, followed by a full dose of black drop. It failed in producing any sleep; we repeated it a second and a third time, but without the slightest benefit. I then remarked to the class, that as I had noticed the good effects resulting from a combination of tartar emetic and opium in the case of delirium tremens, where opium alone failed in procuring sleep, it would be proper to give this remedy a trial. I observed at the same time, that I was convinced that the preparations of anatomy have a distinct narcotic effect, and that I had seen patients in fever whose watchfulness had been removed by antimony given in the form of tartar emetic or James's powder. I said that it was my firm impression that tartar emetic, along with its other effects, exerts a decided narcotic influence on the system, and that it is this which makes it so valuable a remedy in treating the sleeplessness of fever and delirium tremens. Hence I have been in the habit of giving tartar emetic combined with opium in fever, and, I must add, with very great success. Our predecessors were much in the habit of using antimonial mixtures in the treatment of fever, and they did this because they knew, by experience, that these remedies worked well. It is at present too much the fashion to decry their practice, and in this instance I think with very little justice.

In this boy's case, however, the combination of tartar emetic and opium did not succeed in producing sleep. Having thus failed in our first and second attempts, we had recourse to the liquor muriatis morphiæ, a preparation first brought into use by
Dr. Christison, and which, in the form usually employed, is equal in strength to laudanum. It is an exceedingly valuable preparation for many reasons, and one which has the strongest claims to your notice. Being of the same strength as laudanum, it saves the trouble of learning and remembering new doses, and, in addition to this, it possesses the more important advantages of inducing sleep with more certainty, and not acting as an astringent on the bowels, or affecting the head so frequently as laudanum. You observe that I say *so frequently*; I do so because cases now and then occur in which even moderate doses of the liquor of the muriate of morphia produce quite as much head-ache as laudanum. I prescribed the former in doses of fifteen drops every six hours, so as to give sixty drops in the day, and continued this practice for two days, but without the slightest effect. Here you see three modes of inducing sleep completely failed. The boy remained for a few days without taking any medicine, and then we made another attempt, which was more successful. We first prescribed a purgative enema, and, after this had operated, he was ordered an opiate injection, consisting of four ounces of mucilage of starch, and half a draught of laudanum. He fell asleep shortly after using the opiate injection, and did not awake until the next morning. The following night the opiate was repeated in the same form and with equal success; convalescence went on rapidly, and the boy’s health is now quite re-established.

Here, then, is a singular fact, attested by this case, that opiates in the form of injection will succeed in producing sleep, where they have completely failed when administered even in large and repeated doses by the mouth. Baron Dupuytren was the first who made this important observation, and proved that narcotics applied to the mucous surface of the rectum exercise a powerful influence on the nervous system, always equal, and very often superior, to the effect produced by taking them into the stomach. He maintains, that in delirium tremens a certain quantity of opium, when prescribed in the form of enema, will act with more decided effect in allaying nervous excitement, than the same or even a larger quantity when taken by the mouth. I have no hesitation in giving full credit to this assertion, as the results of my experience tend strongly to confirm its truth. I have, not long since, published in the *Dublin Medical Journal*, the case of a patient in Sir P. Dun’s Hospital, who was reduced to the last stage of debility and emaciation from the combined effects of mercury and syphilis. The torture which this man endured from nocturnal pains and a total deprivation of sleep, was such that he swallowed enormous doses of opium: in fact, he had, previously to his admission into Sir P. Dun’s Hospital, exhausted all his means in purchasing
opium. While in hospital he used to take 150 drops of black drop in the course of a day, and yet notwithstanding these excessive doses, he could only get a few minutes unrefreshing slumber. After some time I changed the plan of treatment, and had the black drops administered in the form of enema. It succeeded in producing a decided soporific effect, and in a short time he was able to enjoy a sufficient quantity of repose, from taking only one tenth of the quantity used by the mouth. I have also, in the same paper, adverted to the case of a medical gentleman who laboured under an affection of his joints, which was accompanied by spasms of the limbs, and most excruciating pains. His agony was so intense that he used to swallow grain after grain of opium, until he had taken to the amount of thirty or forty grains, with the view of procuring some alleviation of his sufferings. He was prevailed on to give up altogether the use of opium by the mouth, and employ it in the form of enema, which he did with the most striking advantage, the quantity which succeeded in giving relief in this way being scarcely the twentieth part of what he ordinarily used.

It is unnecessary for me to enter here into any discussion with respect to the nature and treatment of delirium traumaticum, and the sleeplessness which always accompanies it, as you will find this subject very ably treated in M. Dupuytren's works, and in a very instructive and elegant lecture delivered by Mr. Crampton (the Surgeon General) in this hospital, and published in the last volume of the *London Medical and Surgical Journal*. There is, however, one kind of sleeplessness arising from irritation of the skin produced by blisters, which frequently assumes a very serious character, and on which it may be necessary to offer a few observations, as the subject has not been noticed sufficiently by practical writers. Trifling as the irritation resulting from a blister may seem, yet, under circumstances, it is a symptom of highly dangerous aspect, and becomes a source of just alarm. I have witnessed the loss of some lives from this cause, and many patients have, to my knowledge, been rescued from impending danger, by an early and proper share of attention being directed to its phenomena and treatment.

The bad effects on the nervous system occasionally produced by the application of blisters, are somewhat analogous to those which result from wounds and other external injuries, and to be accounted for on the same principle. Wounds and injuries sometimes make an impression on the nervous system, by no means proportioned to the importance of the injured organ to life, or to the extent of the mischief. An injury produced by a body which strikes the sentient extremities of the nerves with great force, will sometimes produce very remarkable effects on the system. Thus a musket ball striking a limb may, without
wounding any great artery or nerve, or destroying any part of importance to life, produce a train of nervous symptoms of an extraordinary character. The person, without feeling much pain, and scarcely knowing that he has been wounded, without being terrified, or having his imagination excited by any apprehended dangers, turns pale, gets a tendency to faint, and sometimes actually dies from the impression made on the nervous system. In the same way an external injury reacting on the nerves may bring on high mental excitement, delirium, and a total privation of sleep, as we exemplified in delirium traumaticum. I mention this with the view of establishing the proposition that impressions made on the sentient extremities of the nerves are sometimes reflected on the nervous centres, producing the most alarming effects. In this way we can understand how the irritation of blisters may produce sleeplessness, mental aberration, and a train of symptoms analogous to those which characterize delirium traumaticum.

The delirium and sleeplessness arising from irritation of blisters is by no means an uncommon disease. I have seen many examples of it in private practice, and I am anxious that you should be acquainted with its nature and treatment. It is generally met with in cases of children, in whom the cutaneous surface is extremely tender and irritable. I could relate several instances in which I have been called on to visit children labouring under fever, where symptoms of high nervous excitement were present, and where I found the little patients delirious, screaming, and perfectly sleepless from this cause. I have found this alarming affection generally occurring at an advanced stage of fever, and exhibiting a train of symptoms which closely resemble hydrocephalus. I have observed that after the application of a blister to relieve some suspected cerebral, or abdominal, or thoracic affection, jactitation, restlessness, constant application of the hand to the head, and delirium have appeared, and that these symptoms had been mistaken for incipient cerebritis or hydrocephalus, and treated with leeches and purgatives. When the blister had been applied to the nape of the neck, the soreness and irritation of the skin on that part cause the child to roll its head from side to side on the pillow, with that peculiar motion and scream supposed to prove a demonstration the existence of hydrocephalus. I have learned also, that the above measures, so far from giving relief, have only tended to produce an exacerbation of the disease, and that the medical attendant has given up the case in despair. Now, gentlemen, if called to such a case what should be your practice? In four cases of this kind I gave my opinion frankly to the medical attendant, and told him that he was pursuing a wrong course, that the disease was analogous to delirium traumaticum, and not to be treated by leeches.
or purgatives, and least of all by blisters. I observed to him that these symptoms had made their appearance shortly after the child had been blistered for suspected disease of the belly, or head, or chest; and that it was useless to attempt to remove the disease by leeches, or purgatives, or blisters. The remedy I always proposed was opium, and it was acknowledged in four or five cases, that this remedy had succeeded not merely in relieving the existing symptom, but in saving the patient's life. In such cases, particularly in young children, the opium must be given in small but frequently repeated doses, so as to ensure its energetic, but safe action, and the greatest care must be taken to soothe the irritated portion of the skin, by ointments, poultices, &c., while unwearied diligence must be bestowed upon the task of preventing the child from scratching the blistered surface. To effect this the child's hands must be muffled in appropriate gloves, and must be secured in the sleeves of a shirt made for the purpose.

I beg your attention still further to this subject of sleeplessness and delirium. I wish to mention the case of a gentleman who was a pupil of mine. This gentleman studied hard, attended lectures regularly, and was constantly in the dissecting room. While thus occupied, he happened to wound one of his toes in paring a corn, and afterwards wore a tight shoe on the injured foot. A small imperfect abscess formed in the situation of the corn, which was opened by one of his fellow students; the incision gave very great pain, and was not followed by any discharge of matter. Next day he was feverish, and the lymphatics of the injured limb became extensively engorged, the inflammation ascending towards the gland of the groin, and having a tendency to form a chain of insulated patches in different parts of the leg and thigh along the course of the lymphatics. This you will generally find to be the case in inflammatory affections of the lymphatics; the inflammation is seldom continuous, but, in the majority of cases, is developed at certain insulated points, where small diffuse suppurations form very rapidly. After a few days, this young gentleman's fever increased to an alarming height; he became completely sleepless, and had incessant delirium. He was purged briskly, leached extensively and repeatedly, his head shaved, and cold applications so constantly applied, that he appeared half drowned and collapsed. Nowwithstanding this very active treatment, not the slightest relief was obtained; neither were the symptoms mitigated by incisions made in the inflamed patches for the purpose of evacuating matter; the sleeplessness continued, and the delirium was as wild as ever. I saw him on the seventh or eight day, when all antiphlogistic measures had failed, and his friends were quite in despair. On being asked my opinion, I stated that I looked upon
the case as one of delirium, not proceeding from any determination to the head or inflammation of the brain, but depending on a cause analogous to those which produce delirium traumaticum, and that instead of antiphlogistics I would recommend a large dose of opium and some porter to be immediately given. Mr. Cusack, who visited the patient after me, concurred in this view, and a full opiate was administered in repeated doses. It succeeded in producing sleep and tranquillizing the nervous excitement. I may here observe that a few days afterwards this gentleman had a return of the symptoms of cerebral disturbance with sleeplessness, in consequence of omitting his opiate, and that the opiate and porter were again administered, and again succeeded in removing the delirium and watchfulness. By perseverance in the use of the same means, the disease was completely removed, and convalescence established.

The last kind of sleeplessness to which I shall direct your attention, is that which is frequently met with in persons of a nervous and irritable disposition, in hypochondriacs, and hysterical females. You will find such persons, although of active habits, and with tolerable appetites, complaining of a total privation of their natural rest, and it is astonishing to think how long they may continue subject to this harrassing watchfulness. I have frequently observed this affection among females of nervous habit, who possessed strong feelings of attachment to the interest and welfare of their families, and who were remarkable for an exemplary and over anxious discharge of their domestic duties. It is also very often met with in the upper classes of life, where the susceptibility of the nervous excitement is morbidly increased by fashionable habits. I shall not enter into the various moral causes which tend to produce this state of the nervous system, and will content myself for the present with giving you some hints for the treatment of this obscure affection. As yet I have not any distinct and accurate notions of the disease, and can only guess at the treatment, but this much I may state, that such cases are not to be cured by the means which I have already detailed. If they are to be cured by any means, I think it is by antispasmodics, and remedies which have a gently stimulant, and, if I may so express myself, alternative effect on the nervous system. I have cured two cases of this kind by musk and asafoetida, where every other remedy had failed. To one of these I was called by my friend, Dr. Neason Adams; the patient was a lady of delicate constitution and hysterical habit; she was emaciated, and suffered from a total loss of rest, but had had no other disease. All kinds of narcotics had been tried unsuccessfullly, and opium in all its forms had failed in procuring sleep. I advised the use of musk in doses of a grain every second hour, and this means proved eminently successful. In another case I succeeded by
administering the same remedy in combination with assafcetida. I have also remarked that assafcetida alone, given in doses of two or three grains three times a day, has very considerable effect in calming nervous irritation of this description, and restoring the patient to the enjoyment of more prolonged and refreshing sleep. In all such cases the physician must be most careful to have the appearance of not thinking the loss of sleep as a matter of much consequence, and the family of the patient must be directed to speak as little about the matter in his presence as possible;—nay, so powerful is the operation of moral impressions, that in one case which I attended along with Mr. Halahan, I succeeded in procuring sleep by ordering a musk pill to be given every second hour night and day, and by desiring the patient to be awakened, should she be asleep, at the time the pill was to be taken. I laid great stress on the importance of so proceeding, and thereby produced so strong an effect on the patient's mind, and inspired so great a confidence in the efficacy of the medicine, that she went to bed, not so much afraid of lying awake as afraid of being asleep at the hours when she ought to take a pill. The idea which had hitherto fixedly occupied her mind was displaced by a new impression, and relief was obtained the very first night.

To conclude, gentlemen, I may observe that sleeplessness in a chronic form is often produced by dyspepsia, and can only be relieved by the means suited to indigestion. Here it is that small doses of blue pill and tonic purgatives are of infinite service, combined with change of air, of scene, and an appropriate diet. In many females, sleeplessness is combined with menstrual irregularity, and can only be cured by means calculated to invigorate the health and restore the catamenial discharge to its natural periods and quantity, for the nervous system suffers equally whether they be suppressed or overabundant. It is singular how long sleeplessness often continues in chlorosis without inducing those serious consequences that are produced by this symptom in other morbid states of the system. In such cases much is sometimes accomplished by means of the common preparations of morphia, or by the use of Hoffman's liquor (liquor aethereus oleosus), camphor and other medicines that act upon the nervous system. It must be confessed, however, that these and every other expedient to obtain sleep often fail in chlorotic and hysterical females, in whom relief is only obtained by a gradual improvement of the general health and menstrual function. — London Med. and Surg. Journal, 21st March, 1835.

The work of M. Desportes consists of two sections. The first exhibits a series of eighteen statistical tables, giving an account of the number of patients for each year, the name or character of each form of the disease, the occupation of the patient, the causes of the insanity, the relapses, the length of time each patient was under treatment, and lastly the issue of each case. The second comprises the practical and philosophical deductions which may be drawn from these tables.

These tables are arranged in three classes. In the first class are grouped the cases, which were observed during the years 1825, 6, and 7; in the second, those observed in the year 1828, 9, and 30, and in the last, those observed in the following years, 1831-2-3.

Number of Patients admitted, discharged, and cured, during Nine Years from 1825 to 1833 inclusive.

<table>
<thead>
<tr>
<th></th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted</td>
<td>8,272 lunatics.</td>
</tr>
<tr>
<td>Discharged cured</td>
<td>2,763</td>
</tr>
<tr>
<td>not cured</td>
<td>1,863</td>
</tr>
<tr>
<td>Dead</td>
<td>3,854</td>
</tr>
</tbody>
</table>

The relative mortality to the number of cases admitted may appear at first sight, to be extremely high; but we are to remember, "que la mort frappe surtout les incurables."

The number of admissions during the last triennial period was greater, than in either of the preceding periods. The cause of this increase is most probably to be found in the agitation of the public mind induced by the revolution of July, 1831. In the following year too, the epoch of the cholera, there were more admissions than usual. A similar increase in admissions was noticed also in private lunatic establishments, during these two years. In an article published by Dr. Belhomme in the bulletins of the Medico-practical Society, he has particularly alluded to the influence of stirring political and public events on the development of insanity. "It seems to me," says he, "well established, that not only great political events exert an influence on the development of insanity, but also that the number of insane persons must necessarily have increased in France during the last forty years, in consequence of the violent commotions, which have succeeded each other during that period. That such has been the case, is clearly proved by the uniform increase of admissions into our great lunatic establishments after any violent excitement of the public mind."
During the nine years, to which the report of M. Desportes alludes, the number of admissions of female patients has been more numerous by about one-fourth.

M. Desportes observes that, by a singular coincidence, the number of insane patients under treatment and in a state of convalescence, which amounted to 318 on the 31st December, 1827, and to 3,127 on the 31st December, 1830, was exactly 318 on the 31st December, 1833.

In what months of the year have the admissions been most numerous? The following is a table in M. Desportes' report. Of 8,272 admissions during nine years, there were—

<table>
<thead>
<tr>
<th>Month</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>281</td>
</tr>
<tr>
<td>July</td>
<td>268</td>
</tr>
<tr>
<td>May</td>
<td>255</td>
</tr>
<tr>
<td>April</td>
<td>237</td>
</tr>
</tbody>
</table>

From this table it would appear that the month of June, when the hot season commences, is the period of the aggravation of insanity.

Now as to the influence of the weather on the curability of the patients, we have the following data:—

Of the 8,279 patients, the months in which there were the greatest number of cures, were—

<table>
<thead>
<tr>
<th>Series</th>
<th>Month</th>
<th>Cures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>March</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>October</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>May</td>
<td>42</td>
</tr>
</tbody>
</table>

In other months the cures were less numerous.

<table>
<thead>
<tr>
<th>Series</th>
<th>Month</th>
<th>Cures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd</td>
<td>October</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>48</td>
</tr>
</tbody>
</table>

We see by these tables, that it is at the trimestral epoches, which are marked by a change of season, that the cures have been most numerous; and especially in the month of October, in which alone there were 151 cures.

M. Desportes furnishes us with the following average relative to the cures effected.

<table>
<thead>
<tr>
<th>Series</th>
<th>Patients</th>
<th>Cured</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>2956</td>
<td>881</td>
<td>1 in 335</td>
</tr>
<tr>
<td>2nd</td>
<td>2869</td>
<td>884</td>
<td>1 in 324</td>
</tr>
<tr>
<td>3rd</td>
<td>3354</td>
<td>963</td>
<td>1 in 361</td>
</tr>
</tbody>
</table>
We are next informed that the female patients were kept longer in the hospitals than the males. The reason of this is, that the former may be more effectually and permanently cured. The men, having more means of subsistence, are of themselves generally more anxious to be discharged, when they once begin to feel themselves better. But it may be with propriety argued against this plan, that the danger of relapse must be the greater; and such, in truth, we find it to be the case.

Relapses are more frequent among the men than among the women. The following are the results of M. Desportes' report. In the first series, mentioned above, there was one relapse in every 12 men; whereas among the women there was one in every 16. In the second series, the proportion was one in every 10 among the men; and one in every 13 among the women. In the third series, the proportion was one in every 19 among the former; and among the latter one in every 22. He attributes this difference, in a certain degree at least, to the greater irregularity of life among the men, than among the women.

M. Belhomme is not quite inclined to agree with M. Desportes in this particular. He attempts to explain the difference by alluding to the difference in the cause and in the character of insanity among the two sexes. Among men, he says, it is most frequently idiopathic; whereas among the women, it is much more often merely sympathetic. Now the former, or the idiopathic insanity, is very frequently associated with lesions of the encephalon; while in the sympathetic form of the disease, there is generally no organic mischief, but only a morbidly excited state of the nervous system.

He adduces, as a proof of the correctness of these statements, that paralysis is much more frequent among insane male than female patients. This reasoning is certainly very plausible, and confirms, to a certain extent, the opinion of M. Belhomme, that idiopathic insanity affects men rather than women. We are thus furnished with a satisfactory explanation of the greater frequency of relapses among the male patients.

The following results, as to the mortality of the insane patients, are afforded us by M. Desportes' memoir. In the first series, there was one death in every six of the men, and one in every ten of the women. In the second and third series, the advantage is still more decided in favour of the women. The medium age of the deceased was, in the first series, between 40 and 50 among the men, and between 50 and 51 among the women: in the second series, the medium age among the men was 48 years, and among the women between 53 and 54; and in the third series, it was between 47 and 48 among the former, and between 50 and 51 among the latter.

As to the months in which the mortality chiefly occurred, January seems to have been the most fatal.
The observation of other physicians agrees with this statement. The severe cold of winter appears to be very hurtful to the insane.

M. Desportes next proceeds to give an analysis of the occupations of the insane, their ages, and of the diseases from which the patients usually died.

The following table presents us with a view of the ages of 8272 patients admitted during nine years.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 19 years</td>
<td>626</td>
</tr>
<tr>
<td>20 to 29</td>
<td>1568</td>
</tr>
<tr>
<td>30 to 39</td>
<td>2024</td>
</tr>
<tr>
<td>40 to 49</td>
<td>1683</td>
</tr>
<tr>
<td>50 to 59</td>
<td>1051</td>
</tr>
<tr>
<td>60 to 69</td>
<td>782</td>
</tr>
<tr>
<td>70 to 79</td>
<td>484</td>
</tr>
<tr>
<td>80 to 90</td>
<td>8</td>
</tr>
<tr>
<td>90 to 99</td>
<td>2</td>
</tr>
<tr>
<td>Age unknown</td>
<td>15</td>
</tr>
</tbody>
</table>

The greatest number, therefore, was from 30 to 39 years of age.

The professions or occupations also seem to have a very marked influence on the development of insanity.

It has been remarked by many observers, that there are always a number of insane sent from the army to the public lunatic hospitals. All persons too who have been subjected to strong mental or moral excitement, as love, ambition or interest; merchants who have suffered reverses of fortune, or persons who have left off business, without betaking themselves to some active employment, are very frequently the victims of derangement.

The following table of the occupations of the patients, whom M. Desportes examined, may be interesting.

Among the male patients there were:
- 145 day-labourers,
- 124 tailors,
- 161 shoemakers,
- 101 cabinet-makers,
- 81 masons,
- 97 clerks,
- 62 domestic servants,
- 17 washermen,
- 1 embroiderer,
- 23 cooks,
- 1682 occupations unknown.

Among the women, there were:
- 921 semestresses,
- 397 domestic servants,
- 503 day-work-women,
- 188 washerwomen,
- 133 embroiderers,
- 88 cooks,
- 50 shoemakers,
- 339 occupations unknown.

The great frequency of insanity among females, who have been milliners and semestresses, is perhaps not to be wondered
at, when we remember that so many of these poor creatures are, from their personal charms and other circumstances, more exposed than others of their sex to seduction and ultimately to destitution and poverty. The grief which follows, their anxiety and distress if they become mothers, the anguish of disappointment, are unquestionably the causes of the frequent occurrence of insanity among them.

M. Desportes remarks that insanity is more frequent among female, than among male celibataries. The following statement is very interesting, as it shews, that the unmarried life is decidedly more exposed to the misery of mental derangement, than the "dual state," as the poet Cowper terms matrimony.

The celibataries of the two sexes were in the proportion of 47:16 in every hundred cases admitted into the hospitals; married persons in the proportion only of 3:55 in the 100; widowers and widows in the proportion of 13:27 in the 100; and those who had been divorced, or whose civil condition was unknown, in the proportion of 4:7.

The most frequent and powerful predisposing and exciting causes of insanity, among the patients examined by M. Desportes, will be seen by the following table:—

<table>
<thead>
<tr>
<th>Predisposing Causes.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hereditary predisposition in</td>
<td>736 cases</td>
</tr>
<tr>
<td>Defect of intellectual development in</td>
<td>642</td>
</tr>
<tr>
<td>Premature or natural old age</td>
<td>753</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Causes.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral congestions or hemorrhages, inducing paralysis or delirium</td>
<td>636</td>
</tr>
<tr>
<td>Epilepsy and convulsions</td>
<td>492</td>
</tr>
<tr>
<td>Efforts of menstruation, critical period of life</td>
<td>383</td>
</tr>
<tr>
<td>Consequences of parturition</td>
<td>218</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>48</td>
</tr>
<tr>
<td>Hysteria</td>
<td>100</td>
</tr>
<tr>
<td>Abuse of spirituous liquors</td>
<td>414</td>
</tr>
<tr>
<td>Poverty and destitution</td>
<td>100</td>
</tr>
<tr>
<td>Syphilitic disease</td>
<td>51</td>
</tr>
<tr>
<td>Misconduct and debauchery</td>
<td>216</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moral Causes.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic distress</td>
<td>392</td>
</tr>
<tr>
<td>Reverses of fortune</td>
<td>150</td>
</tr>
<tr>
<td>Ambition</td>
<td>139</td>
</tr>
<tr>
<td>Disappointed love</td>
<td>114</td>
</tr>
<tr>
<td>Fright</td>
<td>134</td>
</tr>
<tr>
<td>Unknown causes</td>
<td>1575</td>
</tr>
</tbody>
</table>

The influence of hereditary predisposition is strongly shewn by the preceding table. The number of patients, so situated, amounts to an eleventh of the whole number of admissions, viz., 8972. The author very properly alludes to the great impropriety of marriages in certain families; but it is very doubtful whether most people will be willing to adopt his advice, "less medicin seuls peuvent etre consultes avec avantage dans ces sortes de cas."
Dr. Belhomme directs the attention of his readers particularly to the marked influence of the uterine functions, as one of the most frequent causes of insanity among females. The above table shews that not fewer than 982 cases are attributable either to the efforts of menstruation, the suppression of the catamenia, their cessation, or to pregnancy, the sequelæ of parturition, suckling, &c., or, lastly, to hysteria and other nervous affections, which are, more or less, obviously connected with the state of the uterus.

We shall now proceed to state the result of M. Desportes' inquiries as to the most frequent causes of death among insane patients.

1st Series, 1825-6-7, out of 1146 deaths,
253 were caused by organic diseases of the encephalon,
395 by organic diseases of the thoracic viscera,
445 by organic disease of the abdominal viscera,
108 by cachectic diseases.

2d Series, 1828-9-30, out of 1200 deaths,
237 were caused by diseases of the encephalon,
390 by diseases of the thoracic viscera,
393 by diseases of the abdominal viscera,
119 by cachectic diseases.

3d Series, 1831-2-3, out of 1408 deaths,
270 were caused by diseases of the encephalon,
468 by diseases of the thoracic viscera,
485 by diseases of the abdominal viscera,
158 by cachectic diseases. Hence there was a total of 760 deaths from encephalic disease, 1258 from thoracic, 1322 from abdominal, and 385 from cachectic disease.

It is however, more than probable that, in very many of the cases arranged under the thoracic and abdominal sections, there was co-existent cerebral disease—the cause of the insanity, although not of the fatal termination. The influence, which disease of other cavities has frequently on the state of the cerebral functions, is strikingly exemplified in many cases of insanity. M. Belhomme alludes to several cases in illustration of this remark, and more particularly to that of a phthisical patient, in whom the paroxysms of madness regularly alternated with the free flow of the purulent secretion, or its suppression.

On account of our desire to get before the reader as much matter of practical bearing as possible, our Periscope and Medical Intelligence are necessarily omitted in the present No.—Ed.