

Dupont
Medical College

SOUTHERN Medical and Surgical Journal,

EDITED BY

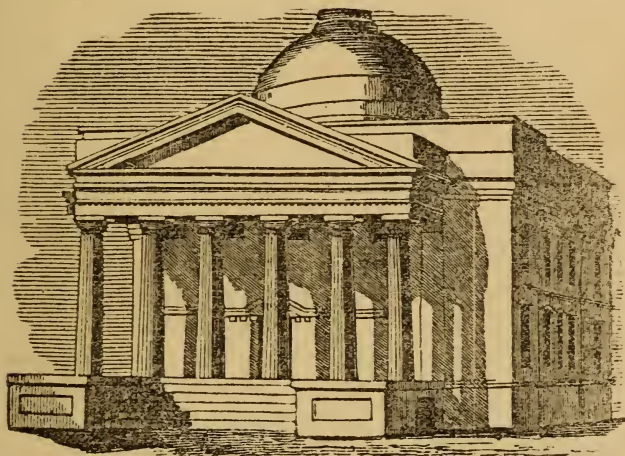
HENRY F. CAMPBELL, A. M., M. D.,

PROFESSOR OF SPECIAL AND COMPARATIVE ANATOMY IN THE MEDICAL COLLEGE OF GEORGIA;

AND

ROBERT CAMPBELL, A. M., M. D.,

DEMONSTRATOR OF ANATOMY IN THE MEDICAL COLLEGE OF GEORGIA.



Medical College of Georgia.

"Je prends le bien ou je le trouve."

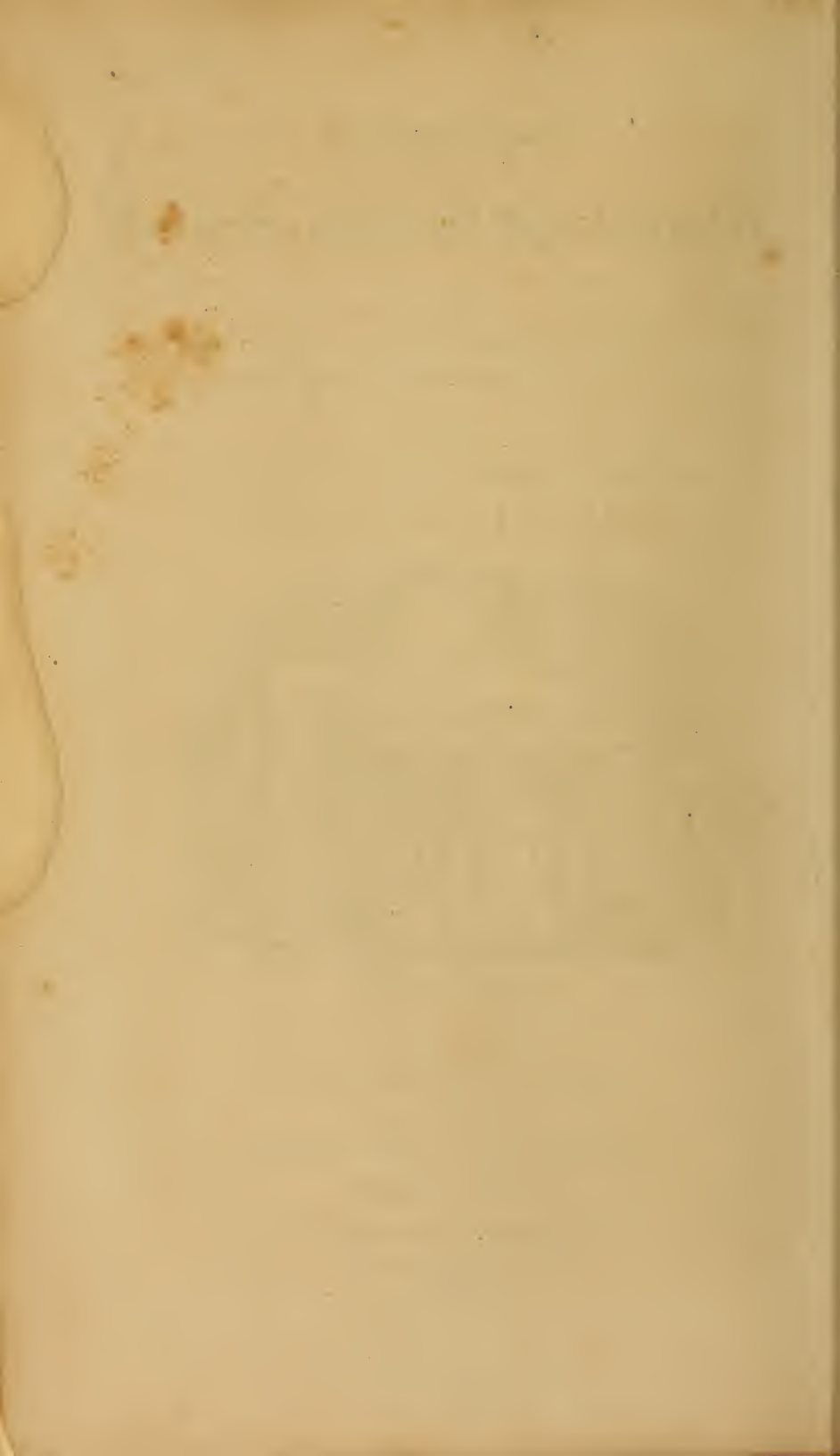
VOLUME XVI.—NEW SERIES.

AUGUSTA, GEORGIA:

DR. WILLIAM S. JONES, PUBLISHER,

Chronicle & Sentinel Steam Press.

1860.



SOUTHERN MEDICAL AND SURGICAL JOURNAL.

(NEW SERIES.)

Vol. XI.

AUGUSTA, GEORGIA, JANUARY, 1860.

NO. 1

ORIGINAL AND ECLECTIC.

ARTICLE I.

Stomatitis Materna—What is its Pathology?—Treatment with Turpentine. By D. S. BRANDON, M. D., of Thomasville, Geo.

The frequency of this Disease as it is met with in certain localities at times, and the uncertainty of its pathology—together with the obstinacy with which it sometimes resists treatment, should have given it more importance than has been claimed for it by Medical writers. Most of the old writers have given it no attention. Perhaps about a dozen, have noticed the subject under different heads.

In 1853, Dr. J. C. Hubbard, I believe, was the first to direct the Profession to the Pathology of *Stomatitis Materna* derived from the dead subject. They consist, he says, in “ulceration of the mucous follicles of the intestines—which, he asserts, exists in all marked cases.” He witnessed as many as five of these ulcers in the case referred to without any other marked appearance to account for the fatal result.

Shortly after this, in 1854, I believe, Dr. David Hutchinson, after giving an extensive history of the symptoms, progress, and termination of a case of *Stomatitis Materna* of four years standing, gives the post mortem appearances, seventeen hours after death, as follows:

"The *Peritoneum* exhibited evidences of inflammation; general appearance, pink color; blood vessels injected, adhesions of pancreas throughout the whole extent to duodenum. Structure of Kidneys softened, congested, and pus in Pelvis of; greatest quantity in right one. Want of integrity of colon; mucous membrane wanting in many places—the ulcerative process being so complete. Cecum as well as the colon, small intestines and stomach for the most part normal. Spleen completely softened—but for its serous coat would barely hold together; small collections of pus throughout its interior. Liver enlarged, softened in the inferior portion of the right lobe, which was also congested, and showed signs of recent inflammation. A melanotic tumor three fourths of an inch in diameter was found on its convex surface. Gall-bladder filled with black greenish material—about a gill in quantity. Weight of Liver, four pounds and two ounces."

In the transactions of the Indiana State Medical Society for 1856, Dr. Hutchison says that "Dr. McLean relates the post mortem of a case in which the mouth and fauces were entirely denuded of their mucous coat, with numerous patches of ulceration extending throughout the œsophagus. The stomach was also almost completely denuded of its mucous coat, with numerous patches of ulceration extending deep into its muscular tissue. A small patch around the pyloric orifice of the stomach was the only healthy portion. The duodenum was healthy. There were a few inflammatory patches in the colon. The Bladder had traces of inflammation about the neck; and a few patches of ulceration existed in the Vagina."

So far as the writer knows, the three cases above noticed contain all that post mortem examinations have shown, that go to throw light upon the pathology of the disease in question.

From examination of the wreck alone, can we come to any thing like correct conclusions of what has been the character of the storm; and so it is in Pathology. Dr. Hutchinson, as I think, has done this work most admirably—so well that the Fisk Fund Society of Rhode Island awarded him a premium

of one hundred dollars as an evidence of their appreciation of his justly meritorious paper.

Prof. M. M. Pallen in the St. Louis Medical & Surgical Journal for March, when speaking of the disease in question, uses the following language: "In all these cases, I have seen inflammation of the Cervix Uteri and of the superior portion of the Vagina." He further adds, "from the uniformity with which I have met with disease of the Uterus in *Stomatitis Materna*, I have concluded that it plays an important part in the *production* of the disease; and supposes that the affection exists prior to the sore mouth; and that pregnancy or lactation, as the case may be, increases it to such an extent that the gastric derangement results; and this is followed by the trouble in the mouth." Dr. Pallen draws his conclusions, as it seems, from the condition of his patients at the time he saw them—without the advantage of a post mortem examination, and explains the phenomenon as one of sympathy, for he adds: "Diseases of the Womb very often produce severe gastric derangement, often too, stomatitis is produced by gastric derangement, both in children and adults." All that Dr. Pallen has said of the *symptoms* in the cases he refers to, may be true, but that these lesions are *primary*, or have much or anything to do in the "*production*" of the disease, is, I suspect, very doubtful. It is true that these lesions often exist—though not in a majority of cases—certainly not in the cases that have fallen under my notice. Dr. Hutchinson is of opinion that the *starting point* in this disease, is inflammation, "*sui generis*," set up by pregnancy and kept up by lactation, and this position is ably maintained in his essay—to which the reader is referred.—See *Am. Jour. Med. Sciences*, Oct. No. 1857.

In the Diagnosis of *Stomatitis Materna* there is nothing difficult as a general rule, especially if the Physician will take the trouble to go back to the first, or starting point in the case. Protracted and *aggravated* cases may be taken for typhoid fever; though this is rare. The first symptom is burning in the mouth of a scalding nature, aggravated generally by hot drinks. The tongue and mouth will be found red and inflamed, which

is soon followed by aphthæ and ulceration of the buccal cavity. In some cases there are no ulcers, but simply a diffuse redness of the mucous surface of the tongue and mouth. To these may be added, burning in the stomach with occasional vomitings, constipation or diarrhœa, more or less obstinate, attends. Inflammation of the vaginal mucous membrane, together with painful micturation is somewhat common. The transient or migratory character of the symptoms, Dr. Hutchinson thinks, are quite characteristic.

There is a difference of opinion in the profession as to whether the male subject is ever affected with this or an analogous disease.

Treatment.—It is to Prof. Wood, of Philadelphia, that the profession is indebted for much that is valuable in the application of the oil of Turpentine to diseases of the alimentary mucous membrane. In the treatment of enteric fever at this day, we have a remedy in the oil of Turpentine that disarms disease of its terrors; and in the same agent we have a remedy equally applicable to that more distressing though not so fatal disease, *Stomatitis Materna*, and it is to call the attention of the profession to its use in this disease, that I have prepared this brief essay. From being greatly amazed and many times disappointed with the treatment of the authorities on the subject, I was led by the analogy of the cases, in which the oil of Turpentine had a merited reputation, to try it in *Stomatitis Materna*, and the result was everything that I or the patient could desire. I have used it and caused it to be used, in quite a number of cases since the first of last year, when I began its use, and in no instance that I know, or have heard of, has it failed. If the bowels are constipated I premise a dose of Castor Oil—then give the Turpentine—say twelve drops three or four times a day on a little loaf sugar. If there be diarrhœa present, I use equal parts of Laudanum with the Turpentine as above. For the inflammation of the uterine organs, if there be any, I use simply warm milk-and-water injections; as a general rule I think these symptoms are sympathetic and will subside if the alimentary canal is restored to health. If ulcers

exist, caustic will be necessary in some cases, perhaps. I do not know that the use of Turpentine will cure ulcers of the uterus or its appendages when used as a constitutional remedy, perhaps it may, I think it likely. The cure is usually effected in from five to eight days; very bad cases may require more time. I would here earnestly call the attention of the Profession to the value of so simple and efficient a remedial agent as the oil of Turpentine has proved in my hands.

ARTICLE II.

Strychnine, as a remedial Agent—By J. McF. GASTON, M. D.,
OF Columbia, S. C.

In a recent issue of the Southern Medical and Surgical Journal it is said: "We are confident that the remedial powers of Strychnia are not yet fully brought out," and as my experience with this article has developed its influence in some affections to which it has not usually been applied, I purpose to give a brief notice of its effects in my hands.

In the administration of Strychnine, it is a matter of much consequence to keep the quantity below that which manifests its toxical influence; and inattention to this particular has brought it into discredit with some experienced Physicians. It is like many of the neurotics adopted to impart vigor and force to the muscular organization in minute portions, but calculated to disturb its harmonious performance when given in doses not proportionate to the state of the system.

That Strychnine is injurious when given in portions not suited to the susceptibility of the subject is a condition of its potency; and if we would test its efficiency it must be accurately graduated to the energy of the nerve-center. In the doses usually prescribed, it is very generally hurtful, and my early experience was thus unfavorable to it as a remedial agent; but on a thorough consideration of the quality of its action, I have fixed limits to the quantity administered which harmonise its effects on the various portions of the physical and vital structure of man. To secure this it must be kept short of the

influence on the excito-motory system which is manifested by irregular and involuntary contractions of the muscles. I am well aware that a different view has been advocated in paralytic cases, but I am yet to see the first instance of any benefit from such disturbing effects, and most assuredly I have seen instances of harm from carrying the article to this extent. It may be employed in some conditions in much larger quantities without producing this effect, than would be practicable in a different state of the nerve and muscle organization; and its adaptation to the particular case requires care and discrimination on the part of the Physician. The practice of beginning with a small dose and gradually increasing until muscular twitchings are perceived is not commendable; as it eventuates in a disorder of the nervous system more detrimental than the condition for which the article has been prescribed. Such a tentative use of Strychnine is rarely if ever warrantable in any condition of the system; and within my experience, its most salutary influence is procured by being introduced so as to avoid all liability to such results. The rule by which we may be guided, is, never to exceed one-half of the quantity which in any case would be likely to be attended with these specific effects. In illustration, a patient is supposed to be so susceptible as to show this effect from the 1-16 grain, repeated three times a day; then, in such case, never exceed the 1-32 grain three times a day, and there is an efficient influence of the medicine without any possibility of the disturbing and obnoxious effect which is to be guarded against.

Thus, by making the maximum only one-half of the recognized dose, we may attain the best results in using this very energetic article; and my habit is to commence with the 1-50 grain, gradually increasing until double the quantity is given at a dose, and repeated as often as the circumstances may demand it. I have no apprehension from continuing the use of Strychnine in these doses for any time it may be required, as they cannot, by any process of influence, become taxical.

Prior to any application of the above views, let me submit the mode in which Strychnine may be most conveniently

administered. It had been my custom for several years to employ a solution of 1 grain to 1 f—diluted Acetic Acid, giving from 5 to 10 drops as the standard dose, but now Dr. Green in his prescriptions of American practice, has given us the formula for solution of Strychnia, as follows, viz: Strychniæ gr. xii. Acidi Acetic qt. ix. Alcohol f—. Aq. font. f—xi m. dose from ten to thirty drops twice or thrice daily. This is kept in our office; and as it contains the same proportion as that which I formerly used, it is employed in corresponding doses, viz: from five to ten drops, and very rarely as much as fifteen drops, three times a day.

As to the particular cases in which Strychnine has been resorted to by me, no detailed account is requisite to illustrate the quality of its influence, but I may state that in atonic conditions of the organization, from various causes, and under different circumstances, it has been attended with benefit in the minute portions above mentioned.

The application of Strychnine in the adynamic class of nervous disorders is a point to which special consideration has been directed, and by imparting tenacity to the nervous system it seems to be corroborant of the entire organization.

In that deplorable condition attended with involuntary seminal emissions, I have tested it fully and satisfactorily during a series of years, and it really has served my wishes so completely in these cases that I now use no other course of treatment. With a view to secure the best effects from it, a proper regimen should accompany its use, and such a course it may almost be regarded as a specific in spermatorrhea.

ARTICLE III.

Veratrum Viride—In Nervous Affections—By JOHN STAINBACK WILSON, M. D., of Columbus, Ga.

I have read with great interest the article in the September number of the Southern Medical and Surgical Journal, on "*Veratrum Viride*," in Chorea and other convulsive diseases. Dr.

Baker's views as to the *modus operandi* of this remedy are doubtless correct; and it is strange that the truth so ably enforced by him should have been overlooked by the mass of the profession, and even by those who have most extensively used, and warmly advocated the great sedative. It would seem that a knowledge of the controlling power of *Veratrum Viride* over the circulation, would, almost inevitably lead to its use in convulsive affections originating in exaltation of nervous sensibility; yet, as already intimated, this practice appears to be almost unknown to the profession. Still Dr. Baker's declaration is not strictly correct, that, "all that has been published, either in the United States Dispensatory or elsewhere, concerning the remedial powers of this agent, was written in reference to its value in the treatment of febrile and inflammatory diseases." In an article published in this Journal in July 1853, under the head of "A brief Summary of my experience with the *Veratrum Viride*," may be found among a number of others, a case of epileptiform convulsions which was successfully treated principally with *Veratrum Viride*. The following is an extract from the above article: "The subject of the convulsions was an anæmic boy of 10 or 12 years of age; the spasms were frequent and extremely severe, every paroxysm apparently putting the life of the patient in imminent danger: the *Veratrum*, to reduce the frequency of the pulse, and Ether inhalations to quiet the spasms, were the remedies almost exclusively relied upon; and these indications were fulfilled in the happiest possible manner, snatching the little sufferer from the very jaws of death." This quotation, while it may render some qualification of Dr. Baker's remark necessary, shows very plainly that the writer did not, at that time, fully apprehend the controlling power of the *Veratrum* over the nervous system; and as this important truth has taken a more definite form in his mind since that time, his object in writing now is not so much to criticise and find fault, as to return thanks to Dr. Baker for the *practical demonstrations* so forcibly presented in his article. I believe that the discovery of the sedative powers of *Veratrum Viride* in febrile and in-

flammatory diseases is among the greatest, if not the greatest boon of modern therapeutics; and if it should be found to possess equal power over nervous affections, its virtues cannot well be over-estimated. My experience with it in the latter class of disorders is quite limited, but in the former, not inconsiderable, and I can truly repeat the declaration made in the above quoted article published by me in 1853, and based upon the result of twenty-five cases of various disorders: "*I have never seen it fail in reducing the frequency of the pulse, while there was generally an improvement in its volume.*"

My experience fully corroborates Dr. Baker as to the size of the dose. When there is no urgent necessity for a prompt effect, I generally begin with only three or four drops for an adult, every three hours, increasing one drop each dose, until pulse is sufficiently reduced. By pursuing this plan I have almost always succeeded in accomplishing the desired effect and without a single unpleasant symptom; without even the slightest nausea: indeed, in many cases patients could not tell from their feelings that they were taking anything more than so much water; and yet the pulse may thus be pleasantly and gently reduced from 140 to 60, or even lower. When nausea and vomiting do occur they are very distressing and *peculiar* but I have never had any difficulty in giving relief by diminishing the dose, or by giving a little brandy or ether, or morphine, or something of that kind. I trust that Dr. Baker will continue to push his investigations in the line marked out by him, and that others will follow his example until the controlling power of *Veratrum Viride* is as fully demonstrated in nervous as it is in vascular disorders.

ARTICLE IV.

General View of the Therapeutic Application of Electricity, being an Outline of Lectures delivered upon this subject before the Class of 1859 and 1860, in the Medical College of Georgia, at Augusta. By JOSEPH JONES, M. D., Professor of Medical Chemistry and Pharmacy.

Published by Request of the Class.

GENTLEMEN: These lectures are designed, not merely to furnish you with valuable knowledge and practical rules, but

also to point out the sources of knowledge, the labors and records of the best investigators of the Physiological and Therapeutic effects of Electricity.

Your minds have been prepared for the consideration of the Therapeutic Application of Electricity, by the careful study of the various phenomena of Electricity, by the study of its relations with all the other modes of force, and of its relations to the nervous and muscular forces.

That we may, at the outset, form some idea of the importance and extent of this subject, we will glance, for a moment, at the

History of the Therapeutic Application of Electricity.

Centuries before the developement of the science of Electricity, the ancients were acquainted with the effects of the Torpedo, which, as we have before shown you, is a living voltaic battery. Thus Pliny,* in his Natural History, published A. D. 77, says: "The Torpedo is very well aware of the extent of its own powers, and that, too, although it experiences no benumbing effects from them itself.

Lying concealed in the mud, it awaits the approach of the fish, and at the moment they are swimming above in supposed security, communicates the shock, and instantly darts upon them." Galen not only noticed the power of the Torpedo to communicate its shock through a spear and paralyze the hand of the fisherman, but also compared this phenomenon with the action of the Heaclea stone, called the magnet, and affirmed that he had applied the living Torpedo to the cure of head-ache, and found that its application to the aching head, allayed pain in a manner similiar to the action of other things which obtund sensation.

Ætius also affirmed, that the living Torpedo will cure chronic head-ache, and cause the prolapsed anus to return, whilst the dead fish is incapable of producing these effects; and Scribonius Largus, who wrote in the age of Claudian, states that the most inveterate and intolerable head-ache may be removed immediately and permanently, by placing a live

* The Natural History of Pliny, translated by John Bostock, M. D., and H. T. Riley, published by H. G. Bohn. London, 1855: vol. 11., pp. 451 452.

Torpedo on the painful part, till the part becomes benumbed ; and that in both species of the gout, if a live black Torpedo be placed under the feet of the patient standing on the seashore, when the whole foot and leg is benumbed up to the knees, the pain will be immediately and permanently removed.

The magnet was used for the cure of tooth-ache and other disorders, at an early period. *Ætius*, who lived so early as the year 500, says : “ We are assured that those who are troubled with the gout in their hands or their feet, or with convulsions, find relief when they hold a magnet in their hands.” *Marcellus*, who lived in the fifteenth century, affirms that it cures tooth-ache : *Wecker*, in the sixteenth century, says that the magnet applied to the head cures head-ache : *Paracelsus* recommended the magnet in a number of diseases as fluxes and hemorrhages : *Kircher* states that it was worn about the neck as a preventative against convulsions and affections of the nerves : and at the end of the 17th century magnetic tooth-picks and ear-pickers were made and extolled as a secret preventative against pains in the teeth, eyes, and ears.

The magnet was also employed at an early period on account of its true magnetic properties : *Kirkringius*, *Fabricius Hildanus*, and *Morgagni* used it to remove particles of iron which had, by accident, fallen into the eyes ; *Kircher* employed it in the treatment of hernia ; and in the latter part of the 16th and in the early part of the 17th century, the magnet was employed in two cases in which knives had been swallowed, to attract their points to the surface of the stomach, so that they could be removed by incision.†

The Generalization of Electrical Phenomena, by *Dr. GILBERT*, an English Physician, in 1600. The invention of the Electrical Machine by *Otto Guericke*, the philosophical Burgomaster of *Magdeburg* ; the discovery of the *Leyden phial*, by *Von Kleist* and the Dutch philosophers in 1745 ; and the experiments of *Von Kleist*, *Cunæus*, *Muschenbroek*, *Watson*, *Smeaton*, *Bevis*, *Wilson* and *Canton*,

† *Beckman's History of Inventions.* London, H. G. Bohn, 1846 : vol. 1., p. 43.

were followed by the extensive employment of Static Electricity in the treatment of disease.

Jallabert, of Geneva, in 1748, studied carefully the physiological action of electricity, and affirmed that this agent was capable of accelerating the circulation of the blood, of augmenting the heat of the body, of awakening sensation, of recalling movement to paralysed limbs, and of producing involuntary, convulsive movements. He reports the cure of paralysis and wasting of the right arm of a man, which was greatly benefitted by machine Electricity.

The Abbe Sans, in 1772 and 1773, published a work on the employment of Electricity in Paralysis, and reports eight cases of paralysis cured, and several others ameliorated.

In 1778 and 1781, Mauduyt published observations upon the effects of electricity in 62 cases of paralysis, Rheumatism, Rheumatic Gout, Deafness, Amarosis, and Amenorrhœa from which he concluded that positive electricity accelerated the pulse, whilst negative retarded it; that electricity augments the insensible transpiration, increases the perspiration, occasions evacuations, removes chronic complaints, restores sensation and movement to paralyzed limbs, and establishes critical evacuations which have been suppressed, and is favorable in paralysis, and in all cases where it is necessary to fluidify the liquids and strengthen the solids, and is injurious when there is an excess of sensibility and nervous irritation. In his treatment of disease, he generally employed the Electric Bath, (the patient was placed on an insulated stool, and connected with the Prime Conductor of the Electrical Machine,) and in many cases drew sparks from various parts of the body.

The Abbe Beetholon, 1780, Mazars de Cazelles, 1780, 1782, 1788, 1792, Sigaud de la Fonde 1781, 1802, Cavallo 1785, and others, published observations and works upon the Physiological and Therapeutic effects of Static Electricity.

The discovery by Galvani, in the year 1786, of the contraction of the frogs leg, when electrified, and when touched with dissimilar metals, and of the electricity inherent in the nerves and muscles, and the publication, in 1791, of his celebrated

works "*De Viribus Electricitatis in motu musculari Commentarius*," excited a deep and wide spread interest amongst the philosophers and physicians of Europe.

The physiologists believed that they had at length obtained an insight into the hidden nature of the nervous, muscular, and vital forces; and the Physicians began to believe that they had found the great therapeutic agent for all diseases, and that no cure, even of the most inveterate paralysis, was impossible. Excited by the experiments of Galvani, the Italian philosopher Volta, who united in an eminent degree, boldness and fertility of invention, with soundness of judgment, careful execution, and untiring and unremitting attention, discovered near the close of 1799, the Voltaic pile, which was destined to become for a time the great source of Electricity in the treatment of disease.

Alexander Humboldt, published in 1799 his experiments upon the effects of Galvanic currents upon the nerves and muscles, which not only demonstrated the possibility of producing contractions in the muscles of frogs by a perfectly homogeneous metallic arch, and reconciled in a correct manner the experiments of Galvani and Volta, but also suggested the idea of applying the electricity generated by chemical actions to therapeutics. Aldini, the nephew and pupil of Galvani, was the first, however, to occupy himself with the application of Dynamic Electricity, (electricity generated by chemical charges, as in the Voltaic pile and Galvanic battery,) to the treatment of diseases; and in 1804, he published a Theoretical and Experimental Essay on Galvanism, which contains a great number of curious observations upon the effects of electricity in numerous pathological cases.

Sarlandiere, Fabre Palprat, Labaume, Andral and Ratier, Andrieux, Coudret, M. Guerard, Rayer, Magendie, Becquerel, Trousseau, Pidoux, James, Puyssaye, Regnault, Graefe, Koenig, W. Wright, Charles T. Favell, Welch, Pravay, M. Marianini, Matteucci, M. Bouisson, Tytler and others, published between the years 1804 and 1838, numerous observations and treatises upon the application of Galvanism in the cure of almost every known disease.

The investigations of Faraday, in 1831, upon the inductive influence of Electric currents, led to the formation of electro-magnetic machines, which gave a succession of induced currents, capable of acting powerfully upon living animals.

The discovery by Faraday, 1831, of magneto-electric currents (a magnet by induction excites in an unelectrified closed conductor, a current both on being brought near to, and on being removed from the latter,) simultaneously with the discovery of the secondary currents induced by Voltaic currents, was immediately followed by the construction of magneto-electric machines, by this celebrated philosopher, and by Pixii Clarke, Saxton, Dove, Breton, Duchenne and others.

These electro-magnetic, and magneto-electric machines, have since the year 1838, in which they were improved and adapted to medical use, been extensively employed in the treatment of Disease, in almost every Hospital on the European and American Continents, and have almost entirely superseded the use of the magnet, the Electrical Machine and Leyden Jar, and the continuous Galvanic Current.

From 1840 to the present time, hundreds of cases treated with these machines have been reported in this country and in Europe; and the attempt to give you even the most general idea of the contents of these works and articles, upon the Therapeutic application of Electricity, would not only consume far more time than can be devoted to a condensed historical introduction, but would cause needless repetition by anticipating the consideration of the results of the various labours, which will be presented at the appropriate time under the different divisions of the subject.

Electrical Machines and Apparatus Employed in the Therapeutic Application of Electricity.

During the study of the phenomena of Electricity, of its agencies in nature, and of its applications in the arts of civilized life, you have become familiar with the structure and mode of action of all the various Electrical Machines and apparatus and in the description of the electrical machines and apparatus used in the treatment of disease, it will be simply necessary to give you such a condensed view as shall be far

more useful to you in future as practitioners of medicine, than a tedious description of minute details with which you are familiar.

1. *Static Electrical Machines, in which the Electricity is generated by Friction—Ordinary Electrical Machine—Apparatus for the accumulation and condensation of Static Electricity—Leyden Jar and Electric Battery.*

Electricity generated by friction is called **STATIC**, to distinguish it from electricity generated by chemical action, (Galvanism,) which is called **DYNAMIC ELECTRICITY**.

Whilst the ideas conveyed by these terms **Static** and **Dynamic**, are not accurate, and are in a great measure arbitrary, still we use them for purposes of nomenclature. It would be more exact to call electricity generated by friction, **ELECTRICITY OF INTENSITY**, for it possesses in a high degree the properties of attraction and repulsion, and is capable of exercising great mechanical power, as we have so often witnessed in the effects of lightning, and of the discharge of the Leyden Jar, and even of the sparks which fly from the excited prime conductor of the Electrical Machine; and Galvanism, (electricity generated during chemical charges,) **ELECTRICITY OF QUANTITY**, for whilst it has little tension, and can accomplish but feeble mechanical effects (you have seen that the terminals of the Galvanic Battery must be placed in contact before the electrical excitement will manifest itself,) on the other hand it is capable of developing intense heat, sufficient to melt the hardest metals, and also of producing rapid and energetic chemical changes, such as the decomposition of water and salts, and of all compound bodies, inorganic and organic.

The Electrical Machine consists of three principal parts:

1. *A Non-conductor*, upon the surface of which electricity is excited by friction; this is generally a *glass plate* or *cylinder*, so arranged that it may be continually rotated about a fixed horizontal axis.

2. *The Rubber*, composed of a soft elastic substance as leather, of low conducting power, and placed in close contact with the surface of the non-conducting glass plate or cylinder. During the revolution of the glass plate or cylinder, electricity

is developed by the friction of its surface upon the surface of the rubber. The surface of the non-conductor is always in an opposite state of electrical excitement to that of the rubber; if the non-conducting glass be positively excited, the rubber will be negatively excited, and *vice versa*, and the amount of positive electricity will be equal to the amount of negative electricity.

3. The *Prime Conductor*; one or more metallic cylinders, supported by insulated pillars of glass, or of well baked, dry wood, situated behind the glass plate or cylinder, parallel to its axis prolonged, and at the same height as this axis.

The end of this prime conductor nearest the non-conducting glass surface upon which the electricity is excited by friction, is furnished with metal points which approach as closely as possible to the plate, without, however, being in contact with it; these points serve to draw off from all parts of the glass surface which are successively presented to them, the electricity acquired by the friction against the rubber, and to transmit the electrical excitement to the insulated prime conductor.

Static Electricity, thus generated by friction may be administered in three modes.

1. *Sparks from the excited Prime Conductor of the Electrical Machine.*

The patient, upon whom we wish the electrical excitement to act, is brought near to, but not touching the prime conductor; the sparks pass from the prime conductor through the intervening air, to the nearest part of the patient, and the electrical excitement passes immediately over the superficial parts of the body, into the ground. We may thus act upon a paralyzed arm or tumor or diseased structure of any kind, with sparks, simply by approaching it to the prime conductor of the Electrical Machine in action. Sparks produce sharp, pungent, unpleasant sensations, and slight fibrillary contractions of the superficial muscles of the parts where they are received. When prolonged, this mode of electrization augments the cutaneous sensibility, and excites the capillary circulation of the skin, and produces slight rubefaciant swelling, and some tenderness to the touch; it may therefore be

employed, as a gentle excitant in torpid states of the skin, when we wish to produce a gentle excitement of the capillary circulation, and as a mild revulsive in sluggish chronic inflammations, external and internal, of no great severity.

2. *Insulation—Electric Bath.*—If the patient is placed upon a stool insulated with glass legs, and then connected with the prime conductor, he forms, in fact, a part of the prime conductor, and will manifest during the revolution of the glass plate or cylinder, similar electrical excitement, and give off sparks in a similar manner. We may in this manner electrify the patient positively or negatively at will, according as he is connected with the prime conductor or with the rubber.

A portion of the electricity is spread over the surface of the body, whilst another portion escapes incessantly and silently into the surrounding air; this slow escape of the electricity is attended with slight sensations in the skin. The effects of this mode of electrization, are those of a very gentle cutaneous stimulant, not intense enough however to render it valuable as a therapeutic means. A more efficient means of acting upon the skin and superficial muscles, is to combine this mode with the sparks in the following manner. If the hand of a person, or a metallic body in communication with the floor or ground be brought near to the insulated, electrically excited patient, sparks will fly off to the hand or metallic body, and excitement of the skin of the insulated electrically excited patient, will be produced at the points from which the sparks have been drawn. We may thus draw sparks from a single point, or from the whole surface of a paralyzed limb, or from a diseased structure of any kind. The sparks may be drawn by the hand of the operator, or by metallic conductors, or by brushes formed of numerous metallic threads.

(To be continued.)

ARTICLE V.

The Pathology and Treatment of Cardiac Disease.—By BERNARD KELLY, M. D., Physician to the New York Dispensary.

Disease more frequently attacks the left chambers of the

heart than those of the right, particularly among the young; as we advance in life, however, the reverse obtains, valvular disease of the right side being more common, as a primary affection, than that of the left. The most usual forms of endocardiac disease we meet with are: *insufficiency* of the valves; *contraction of the orifices*, with or without insufficiency; and, *pediculated, adventitious, and atheromatous* growths and deposits, adhering to the valves, and obstructing more or less completely the cardiac orifices, according to the different degrees of magnitude which they may have attained, or the particular location they may occupy. Each of these forms may be situated in the several openings, but more generally in those of the left side. Disease, involving the sigmoid valves of the pulmonary artery, is very rare. This is owing in part to the unstimulating quality of the venous blood, the carbonic acid which it holds in solution calming irritation by its anæsthetic action; and partly to their facile function, requiring, as it does, very little effort to prevent the blood regurgitating into the ventricle.

The most common cause of valvular disease is endocarditis. This may be primary, that is, may affect the endocardium idiopathically; it is, however, more frequently the result of other diseases, such as acute articular rheumatism, gout, syphilis, and perhaps, occasionally, from the abuse of mercury, (the well-known symptom of *erethismus* often attending the injudicious employment of that agent.) The disease, when it depends upon gout and rheumatism, is called *metastatic*. We do not treat here of *cyanosis*, the result of permanent patency of the interauricular or interventricular orifices; this condition being rather a fault of the progressive development of the organization than a veritable disease. Endocarditis frequently accompanies inflammation of the pleuræ and lungs; also, typhus, small pox, and other eruptive fevers. Whether it be the consequence of these affections or merely produced by the causes which excite them, is difficult to determine. We know that the blood, in the diseases mentioned, is highly charged with fibrin, stimulating and inflammatory; it would not at all, then, seem repugnant to admit that so delicate a membrane as the endocardium, bathed continually in the normal state of things by a bland, unirritating liquid, so highly susceptible of being influenced by agents injurious or foreign to the economy should take on diseased action from the inflammatory condition of the blood alone. It is no doubt in this way that the disease with which we are engaged in so frequently

seen in persons addicted to the intemperate use of alcoholic liquors, which are promptly absorbed, carried along in the torrent of the circulation, enter the chambers of the heart, and then produce those deplorable ravages which embitter the existence of the unhappy sufferer, and infallibly mark him out as the victim of an early grave. It is no doubt in this way, too, that the abuse of mercury occasionally produces the disease; for we know that this substance is readily absorbed, and doubtless equally capable of irritating, and finally inflaming, the lining membrane of the heart, as any of the agents already mentioned.

Before speaking of the symptoms of the various forms of *valvular disease*, it may not be inappropriate to note a few of the more prominent ones of its almost universal forerunner—endocarditis.

This affection, in its early, acute stage, is readily recognized by an examination of the heart and precordial region. The action of the organ is increased in force; its pulsations augmented in number; they are very peculiar in character; so much so, indeed, as to be denominated, by Bouillaud, *acute palpitations*; they strike loudly and sharply beneath the ear; a vibratory movement is distinctly felt in the precordial region by the cheek of the auscultator, or on applying the hand to it. The healthy sounds of the heart are changed or modified. We get, on auscultation, a *bruit de souffle*, or a *bruit de rape*, varying in intensity and distinctness with the greater or less violent pulsations of the heart, or according to the ravages which the disease has already made. A *metallic tinkling* is also not unfrequently heard accompanying the ventricular contraction. Percussion gives a larger field of dullness than is usually met with in the healthy state. This is owing to the tumefaction of the heart when not complicated with the pleurisy, or pericarditis. The bellows and rasping sounds, together with the greater distinctness of the cardiac pulsations, serve to distinguish endocarditis from inflammation affecting the pericardium. The dullness and bulging of the precordial region are common to both diseases, but more extensive and better marked in pericarditis. Pain is by no means a common symptom of endocarditis; on the contrary, it scarcely ever manifests itself when the disease is simple and uncomplicated. The patient generally experiences feelings of uneasiness, anxiety, and oppression about the region of the heart; there is great dyspnoea and apprehension, with a tendency to faintness and syncope. The pulse is rapid, remarkably small, intermittent, and irregular.

This curious discrepancy between the feeble state of the pulse, and the violent, energetic action of the heart, is generally attributed to the collection of fibrinous concretions in the left ventricle, greatly diminishing its normal capacity, and consequently the volume of blood destined to traverse it in a healthy state. The thickened and altered condition of the valves, the contraction of the aortic orifice, contribute, to some extent, in producing the almost impalpable pulse. When the obstruction to the circulation is very considerable, congestion of the lungs and brain supervenes; the countenance is tumefied and purple, and sometimes the patient exhibits all the usual symptoms of apoplexy, such as sudden loss of sensation and voluntary motion, stertorous breathing, frothing at the mouth, and convulsions. In similar cases the lower extremities become œdematous. There is abundant mucous or bloody expectoration. The orthopnœa is well marked; the wretched sufferer being constantly harassed by the fear of impending suffocation.

Such are the prominent symptoms of the gravest form of acute endocarditis; the disease sometimes passes into the chronic state, which produces lesions of the structure it invades, to be accompanied or followed by phenomena of another order. The structural changes which are wrought by this form are chiefly confined to the valves and cardiac orifices. Induration and thickening of the substance of the valves; vegetations springing from the latter, or attached to the lining membrane of the heart; adherence of the valves, and constriction of orifices, false membranes, fibrous, cartilaginous, osseous, or calcareous formations, such are the *anatomical characters* presented by the chronic form of the disease. Although atheromatous and calcareous deposits are very commonly attributed to endocarditis alone, they are, on the contrary, rarely the result of that disease, but are generally produced as a necessary consequence of the modifications of nutrition which the heart, as well as all other tissues of slight vascularity, undergo from old age. They are also very frequently met with in the hearts and principal arteries of confirmed drunkards. In such cases it is difficult to account for their true mode of formation: whether due to continual irritation, or to changes wrought in the physiological constitution of the blood—in all probability to both.

The symptoms of valvular disease of the pulmonary artery will vary with its degree and form. Thus, for instance, should there be merely constriction of the orifice, we get a *bruit de souffle*, more or less intense during the ventricular

systole. This is heard most distinctly towards the junction of the second and third ribs with the sternum. If there be valvular insufficiency at the same time with contraction, the *bruit* exists during the first and second sounds. If insufficiency of the pulmonary valves alone presents itself, the valves remaining in a normal condition, the bellows murmur, or that of regurgitation, is heard during the ventricular diastole—the pulmonary second-sound in this case is entirely wanting. It is very difficult to distinguish pure constriction of the orifice of the pulmonary artery from vegetations affecting the same or its valves. It is distinguished from the contraction of the right auriculo-ventricular opening, by the murmur attending the latter being heard most audibly at the right apex, extending behind the sternum, at the point where the cartilages of the fourth ribs join that bone, and synchronous with the ventricular diastole, or second-sound; from contraction of the aortic orifice, by the *bruit* accompanying the latter being louder, more prolonged, and heard over a greater extent of surface; the latter, too, is infinitely more common. The state of the pulse is also an excellent guide to enable us to discriminate between both affections. When the orifice of the pulmonary artery alone is constricted, the pulse of the individual preserves its usual force, fullness, and regularity; whereas, when the aortic opening is diminished in calibre, the pulse is remarkably small, miserable, frequently intermittent and irregular.

The auriculo-ventricular orifice of the right side is more frequently affected by disease than that of the pulmonary artery. There may be either constriction from chronic inflammation, or obstruction from vegetations situated in the opening, or attached to its valves, or the valves themselves may be thickened and bound down by false membranous bands, or all these different forms may present themselves simultaneously.

The symptoms revealed to us, both physically and rationally, are as follows: In simple *contraction* of the right auriculo-ventricular orifice, a form, like the antecedent, exceedingly rare, and consequently very seldom met with, a diastolic murmur heard behind the centre of the sternum, about the point where the cartilages of the fourth ribs articulate with it, and extending to the right apex. In the obstructive form, from vegetations, which is yet rare, but still more common than the preceding, the murmur, heard at the same point, and extending in the same direction, is more

intense, and may present the *bellows* or *filing* characters; in both cases there is dilated auricular hypertrophy.

Tricuspid insufficiency from thickening of the valves, or the latter being bound down by false membranous adhesions, the orifice remaining in a healthy, normal condition, gives a systolic murmur heard at the right apex, and extending to the sternum, the point corresponding to the articulation of the cartilage of the fourth rib. If *contraction* of the orifice and *valvular insufficiency* exist simultaneously, the regurgitant and obstructive murmurs will be heard over the same space successively, synchronous with the first and second sounds, whose distinctness they will tend more or less to mask and modify. In the regurgitant form, or that resulting from tricuspid insufficiency, there is often manifest pulsation, and distension of the external jugulars; the right ventricle, as well as its corresponding auricle, are dilated and hypertrophied; there is congestion (as in all the forms of tricuspid disease) of the venous system throughout, with anasarca. In grave cases this congestion may induce cerebral apoplexy. The breathing is usually slow and cautious, the lungs not receiving their full supply of blood this after several ventricular contractions; there is neither cough, dispnœa, mucous nor bloody expectoration, at the beginning; it is only when the disease has existed a considerable time that symptoms of pulmonary congestion manifest themselves.

The lesions met with in the left side of the heart are precisely similar to those of the right; the physical signs are also the same, with some slight modifications; the rational symptoms assume an inverse order in the course of their development, as compared with those supervening on disease of the right side.

Obstructive disease of the left auriculo-ventricular orifice, or mitral contraction, furnishes the following signs: a diastolic murmur heard a little to the left of the sternum, beneath the cartilage of the fourth rib, and extending to the left apex of the heart—(this sound has been compared we believe, by Dr. Hope, to that elicited by pronouncing *whoo* in a whisper;) dilated hypertrophy of the auricle; pulmonary congestion—a very prominent and precocious sign, revealed by cough; abundant mucous and bloody expectoration; great diminution in the clearness and force of the aortic second-sound; the pulse small, weak, and unequal. Irregularity of the pulse, accompanying the characters just mentioned, indicates co-existing cardiac

dilatation. A *bruit cataire*, or purring murmur, is sometimes heard at the apex. Consecutive dilatation of the right chambers of the heart is an almost inevitable result of this, as well as all other forms of obstructive or regurgitant disease affecting the left side, especially if the subject survive any considerable length of time. General venous congestion and anasarca appear towards the end. It is in this form particularly, as well as in the regurgitant, that we are so liable to have what is called *pulmonary apoplexy*; that of the brain following directly cardiac disease of the right side.

Mitral insufficiency, the most common, perhaps, of all forms of valvular disease, presents us with the following physical and rational signs: a systolic murmur, propagated from the left apex to the point corresponding with the cartilage of the fourth rib, and a little to the left of the sternum; an accentuation of the pulmonary second-sound; feebleness of the aortic second-sound; pulmonary congestion and hæmoptysis; a small, miserable, unequal pulse, which contrasts singularly with the energetic character of the heart's action; general venous congestion and dropsical effusion ultimately follow this disease. Mitral regurgitation is, in some very rare instances, unaccompanied with a systolic murmur; the cause of this strange anomaly is not well known. In this case the diagnosis, unless aided by the other physical and rational signs, is necessarily obscure.

Contraction, or obstructive disease of the aortic orifice, is attended with these symptoms; a systolic murmur, heard with greatest intensity behind the left margin of the sternum, where the cartilage of the third rib joins it, the sound being transmitted upward, following the curve of the aortic arch; the *bruit* is heard, though sometimes feebly, at the left apex; dilated hypertrophy of the left ventricle; the aortic second-sound feeble; the pulse is generally small and wiry, particularly when the orifice is much constricted, the artery shrinking to accommodate itself to the scanty volume of blood thrown into it. Similar symptoms to those enumerated have been found to arise from other conditions, affecting the free circulation of the blood through the aorta, as the pressure of a tumor or condensed lung upon the vessel, the roughness of the lining membrane of the artery, aneurism, or abnormal dilation of its arch or thoracic portion. Systolic murmurs heard with greatest intensity over the aortic orifice, are by no means always symptomatic of organic disease. A *bruit de souffle* or *bruit de diable*, extending

from the sigmoid valves up the carotids, is one of the most common symptoms of chlorosis and anæmia. They are often present in typhoid, puerperal, and exanthematous fevers. Abdominal tumors, whether morbid or physiological, calculated from their size or location to impede more or less effectually the free circulation through the aorta, sometimes give rise to sounds so entirely similar, as to mislead the physician to suspect organic trouble of the sigmoid valves and orifice, where all, in the mean time, is perfectly healthy and intact.

Valvular insufficiency of the aortic opening furnishes the following symptoms: diastolic murmur at the left apex, and extending to the sigmoid valves, most intense around the latter point; the aortic second-sound often completely absent, or so modified by the regurgitant murmur as to be scarcely appreciable; accentuation of the pulmonary second-sound. A *vibrating fremitus* not unfrequently accompanies the regurgitant current. The pulse is soft, weak, and undulating, and sinks beneath the finger with extraordinary rapidity. There is, on this account, a remarkably long interval between the systolic impulse of the heart and the period when the pulse is felt at the wrist. General venous congestion and anasarca do not usually attend the early stage of this and the preceding form of disease; however, they are not slow in manifesting themselves, for pulmonary embarrassment, indicated by cough and hæmoptysis, is among the foremost complications of aortic contraction and valvular insufficiency.

While dwelling upon the physical signs of the various forms of endocardiac disease, we have had occasion to allude more than once to hypertrophy as a result. It may not be out of place here to describe more fully the different kinds of enlargement, and the peculiar organic lesions upon which they depend.

Hypertrophy, then, may be either *eccentric* or *concentric*. Eccentric or *dilated* hypertrophy supervenes when the current of the blood flows unimpeded into the auricle or ventricle, but has to be expelled from either chamber with difficulty, owing to a contraction of the orifice through which the blood has to pass in the natural state of things. Thus we have this form of hypertrophy in the left ventricle, for instance, when there is great constriction of the aortic opening, the left auriculo-ventricular orifice remaining in a normal, healthy condition. Not only are the walls double and triple their usual size, but the ventricular cavity also is greatly dilated. Eccentric hypertrophy does not always

depend upon organic disease of the side enlarged. Thus obstruction to the circulation, originating in the left side of the heart, will produce dilatation of the right auricle and ventricle, although the valves and orifices of both preserve their normal integrity. *Atrophy* of the left cardiac parietes is generally, if not always, the necessary consequence of obstructive disease of the right side. General atrophy of the organ may be induced by any of the causes which tend to debilitate the powers of life, as organic or cancerous disease of the stomach, copious and long-continued hemorrhages, insufficiency of nutritious and stimulating food; certain cachectic conditions of the system, as marasmus, anæmia, and chlorosis. Pressure from serous, sanguinolent, and purulent effusions into the pericardiac cavity is a powerful means of producing atrophy of the heart. *Concentric hypertrophy* results when the current is obstructed in its ingress and egress. This is easily accounted for. The ventricle, for instance, in this case, receives but a very scanty supply of blood, its walls are consequently not distended to their full capacity, its chamber contracts by degrees to adapt itself to the small quantity of fluid poured into it from the auricle; but an impediment being presented to its free egress by constriction of the aortic orifice, for example, it requires a considerable degree of muscular force to overcome the resistance, and hence the variety of hypertrophy of which we speak.

The only disease with which acute, uncomplicated endocarditis is likely to be confounded, is acute inflammation of the pericardium, but in both diseases there are some very marked distinctive symptoms. Thus, in pericarditis, pain is very constant; the patient frequently complains of an insupportable burning sensation in the anterior and left portion of the chest, which he endeavors to assuage by swallowing cold drinks with great avidity, and seeking the fresh, open air, while the surface of his body, in the mean time, is often cold and livid. The precordial region is quite prominent, and gives dullness, on percussion, over an extensive surface. The sounds, communicated by auscultation, are most decisive, and are usually as follows: *a rubbing, rasping, bellows sound*, compared to that produced by stretching or crumpling new leather. This is heard during the ventricular systole and diastole; it has been designated, on this account, the *to-and-fro sound*. The normal cardiac murmurs resound indistinctly in the distance; they present a dull, muffled tone. Pain, as heretofore stated, very rarely,

or never, accompanies acute, uncomplicated endocarditis; the skin is usually hot, and bathed with a profuse perspiration; the *bruit de rape* or *souffle* is almost universally single; the heart's impulse is sharp, loud, and distinct, a circumstance which induced the illustrious Bouillaud to denominate, in his happy style, the sounds elicited "acute palpitations." The arching of the precordial region and dullness on percussion are never so prominent and extensive in the latter as in the former disease. The diagnosis of the chronic form of endocarditis is sometimes difficult and obscure; the physical and rational signs are often precisely similar to those we meet with in other conditions of the system—chlorosis and anæmia, for instance. Thus, the *bruit de souffle* and *bruit de diable* of these affections often perfectly simulate the rasping and bellows sounds of organic disease of the cardiac orifices and valves. Hæmoptysis, however, and hypertrophy of the heart seldom, or never, attend pure forms of chlorosis or anæmia, as direct and necessary consequences; whereas they are inevitable in chronic endocarditis. These distinctions, together with the antecedent history of the case, will, in the majority of instances, serve effectually to dispel any obscurity which may hang around our diagnosis.

The dropsy, dependent upon valvular disease, can only be confounded with the anasarca following Bright's disease. An examination of the heart and urine will at once reveal the true source of the dropsical effusion, save in those cases where both organic affections exist simultaneously. In the dropsy supervening upon cardiac disease, albumen is scarcely ever detected in the urine, while in granular degeneration of the kidneys it is scarcely ever absent. As regards the comparative gravity of the two affections, both are equally serious to the poor patient; with this slight difference, however, that Bright's disease is often amenable to judicious treatment, while valvular disease, once established, can only terminate in the premature death of its victim. It is scarcely possible to mistake *ascites*, the result of cirrhosis of the liver, with that following the last stage of heart disease. Both dropsies follow an inverse order in their respective manifestation and development. Œdema of the lower extremities is among the first rational signs of cardiac trouble; ascites, from the same cause, among the last. Abdominal dropsy, on the contrary, which depends for its existence upon cirrhosis and other organic diseases of the liver, succeeds directly and immediately the hepatic

obstruction to the portal circulation ; œdema of the limbs being a rare and secondary complication.

The course, duration, and prognosis of endocardiac disease will depend upon its form and extent. The course of acute endocarditis, when left to the resources of nature, is usually very rapid, and may induce death in a few days. Bouillaud has limited this period to eight days ; but the standard is an uncertain and arbitrary one, inasmuch as his cases were complicated with articular rheumatism, pericarditis, pneumonia, and pleurisy. The simple, uncomplicated form would, no doubt, continue much longer before the fatal termination. The abundant fibrinous concretions which collect in the chambers of the heart, and adhere to its lining membrane, opposing seriously the free circulation of the blood, seem to be the direct cause of death. The chronic form may, and generally does, continue for a long, indefinite period, and ultimately destroys the patient by dropsical effusions into the thoracic and abdominal cavities, and by fatal congestions of important organs of the economy. The disease sometimes proves suddenly fatal in another way. The little polypoid excrescences or tumors, of which we have already spoken, as growing from the orifices and valves, occasionally become detached from their pedicles, are swept along in the torrents of the circulation till they arrive at some arterial branch, whose unequal calibre arrests their further progress, become firmly impacted by the ceaseless *vis a tergo*, infallibly cutting off all supply of arterial blood from the part to which the vessel is distributed, thus producing gangrene of the part, unless relieved by communicating branches, or even death of the individual in instances where such organs as the lungs and brain are concerned.

It would be well, then, to seek for such accidents in all cases of sudden death from organic disease of the heart. Our prognosis must not always be influenced by the apparent gravity of the cardiac lesions, as manifested by the frightful murmurs which so often grate so harshly on our ears. As long as the tuneful rhythm of the heart's action remains intact, as long as the comparative prolongation and dullness of the first-sound, followed by the brisk, sharp-clacking stroke of the second is heard, so long may our prognosis of the case be favorable, no matter how formidable may be the physiognomy of the other stethoscopic signs, the heart is performing its all-important function healthily and well. But if the harmony or rhythm of the organ be impaired, if the natural cardiac murmurs be confused, or

entirely silenced and superseded by obstructive and regurgitant sounds; if, with these untoward symptoms, we have pulmonary congestion and hæmoptysis, distention of the general venous system and anasarca, the case becomes then one of serious gravity, and consequently, our prognosis highly unfavorable.

Few diseases, within the broad domain of pathology, require so much vigilance and decision on the part of the medical practitioner, as the one which at present engrosses our attention. The treatment of acute endocarditis, to be at all satisfactory and efficacious, must be seasonably resorted to. Hence the urgent, imperative duty of the physician to examine carefully the condition of the heart in all acute rheumatic affections, particularly if the patient be young and of a robust constitution. This precaution is all the more necessary, since metastatic endocardiac disease is very often hidden and insidious in its early development. If we rely upon subjective symptoms alone in such cases, the great chances are we give such a *point d'appui* to the formidable enemy, that the whole arsenal of our remedies will prove completely inadequate in the subsequent contest to dislodge it from its ill-gotten stronghold. Local and general depletion, then, should be pushed to the utmost limits warranted by the severity of the inflammation and the patient's constitution to bear it. This should not be restricted to one or two venesections, but must be repeated till a decided impression is made upon the circulatory system. It is at this stage of the disease, particularly, that the heroic treatment of Bouillaud, his terrific depletion, so widely known by the famous expression *coup-sur-coup*, is so eminently successful. Calomel and opium should then be given, say 1 or 2 grs. of the first, with $\frac{1}{4}$ or $\frac{1}{2}$ gr. of the latter every two or three hours, until the specific effects of the mercurial are manifested, when the dose may be gradually diminished in quantity, and the interval of administration lengthened. At this period, blisters, repeatedly applied to the precordial region, are signally efficacious. Bouillaud is accustomed to sprinkle 6 or 8 grs. of powdered digitalis over the raw surface at each dressing, and vaunts to have derived excellent effects from its use. Diluent and demulcent drinks, containing the nitrate of potash, should be freely given. Colchicum and hyoseyamus, in equal proportions, are often followed by beneficial results, particularly when we have to combat the rheumatic element. Veratrine is considered by some of the French physicians, of whom I may particularly

mention Beequerel and Trousseau, almost a specific for all acute rheumatic inflammations. When this fails, as it often does, they resort to quinine, which they give in large doses frequently repeated, so as to amount to several scruples in the twenty-four hours. This treatment, according to the reliable assertions of those two eminent pathologists, *never fails* when employed in season.

Another remedy, highly vaunted in disease of the heart, is digitalis. This must be given in large doses, say a grain in the form of powder or infusion every two or three hours, at the very outbreak of the malady, in order to produce the full sedative effects of the drug. The same remedy is given in the latter stages of the disease, as a diuretic, when anasarca appears. It is then never given more frequently than two or three times in the twenty-four hours, due precaution being taken to guard against its powerful sedative action, which, owing to its peculiar cumulative property, sometimes unexpectedly explodes. The muriated tincture of iron, either separately, or in union with the digitalis, is a valuable adjuvant to our treatment at this particular stage. It not only seems to act as a diuretic, but also to give tone to the vessels and plasticity to the blood; thus counteracting, to a great degree, the tendency to dropsical accumulations. Its beneficial effects are strikingly manifest when the cardiac disease is accompanied with anæmia. The iodide of potassium, with chinchona, hyoseyamus, digitalis, and colchicum, is a valuable resource in chronic endocarditis. When the lower extremities are loaded with serosity, numerous punctures, made with a large needle, give great relief, by drawing off a larger quantity of fluid than one would, at first sight, anticipate. This is far preferable to bandaging the limbs, a process which only hastens the appearance of dropsies in other parts, as the abdomen and body. When ascites is developed, we may have recourse to paracentesis, or the administration of elaterium, according to the circumstances of the case. When organic disease of the heart is complicated with general sanguineous plethora, blood-letting and hydrogogue cathartics are prominently indicated. The effects of a copious venesection, in such a case, are often truly magical. The distressing and tumultuous action of the heart, the turgid and apoplectic hue of the countenance, the enormously distended condition of the limbs and entire body, vanish with the rapidity of lightning, to the great relief and comfort of the unhappy sufferer. Elaterium acts well, in such a case, after blood-letting, par-

ticularly when the bowels are loaded with fæculent matter, or obstinately constipated. But if plethora and anæmia be the most favorable, inasmuch as being most amenable to judicious treatment, whether antiphlogistic or tonic, they are, unfortunately, the rarest complications of heart disease. Gastric derangement, torpidity and enlargement of the liver, constipation of the bowels, and congestion of the kidneys, are several conditions which frequently accompany and aggravate the cardiac trouble. The medium through which they react upon the diseased organ is doubtless the blood. This fluid, under such circumstances, is surcharged with all kinds of impurities, as bile, urea, uric acid, pus, and various other principles, which, in a healthy state, are either not formed, or, being formed, are eliminated from the economy, after having served the *role* allotted to them in it. It is in such cases that we see remedies, administered with the view of restoring the healthy functions of the digestive organs, followed by such cheering and salutary results. So very obvious and flattering are those benefits sometimes, that we are almost willingly deceived into the belief that the derangement of the abdominal viscera is the sole cause and mainspring of the cardiac trouble. This fact, however, so far from being true, only forms a rare exception to a very general rule. Functional disorders, frequently becoming organic, of the lungs, stomach, liver and kidneys, are the most common results of obstructed systemic circulation, and also, as must be confessed, the most stubborn and serious complications of cardiac disease.

“*The Chemistry of Caustics.*—By WILLIAM BASTICK.—Of all the applications of chemistry to the sciences of medicine and surgery, there is not one which has been so little studied or written upon as the chemistry of caustics. Having recently had my attention called to this fact, while making some investigations into the nature of caustics, and especially their mode of action, I propose to lay briefly before those interested in this subject, the conclusions arrived at, however fallacious the labors of future and abler investigators may prove them to be.

“It seems to me that caustics, with reference to their action, may be divided into two great classes, namely: one which comprises those which merely kill or destroy the vitality of the living tissue; and the other, which includes

those which not only destroy the vitality of the living tissue, but decompose or dissolve the tissue, whether dead or living.

“As examples of the former class, may be enumerated chloride of zinc, sulphate of copper and zinc, bichloride of mercury, etc.; and, as examples of the latter class, may be mentioned caustic potash, nitrate of silver, manganese cum potassa chromic acid, etc.

“Another distinctive feature of these two classes is, that while the latter destroys and decomposes the living or dead tissue, the former, having killed the living tissue, acts afterwards as a powerful antiseptic or preservative of it.

“It is not within my province to point out to those extensively employing caustics, to whom these facts may be new, the importance of bearing in mind this distinctive feature between the two classes of caustics, when selecting the description of caustic to be employed in any given case.

“Although caustics may be conveniently divided in the manner described into two principal classes, these classes can be further sub-divided into many others, because the mode of action is frequently distinct in each individual case, whatever the final result may be on the living tissue.

“To illustrate this point, the modes of action of caustic potash and chromic acid may be cited. When the living tissue is placed in contact with caustic potash, the destruction of its vitality ensues by the potash dissolving its albuminous and fibrinous components; in fact, acting in the manner described by chemists for obtaining the various protein substances from organic matter. Of course I only allude to the leading features of the action of caustics in this instance, as well as in others. When the same tissue is treated, chromic acid, instead of obtaining a solution of the protein compounds of the tissue, and thus destroying its organized structure, the tissue is destroyed by a slow process of combustion; or, in other words, it is oxydized at the expense of the oxygen of chromic acid, by reason of the facility with which that acid parts with its abundant oxygen when in contact with organic bodies. The manganese with potash acts in a similar way as a caustic to chromic acid, but in consequence of the permanganic and manganic acids which it contains being in combination with the base potash, its action is more controllable and persistent. It may not be here out of place to mention, what appears to me to be a practical advantage, that the destructive caustics, if I may so term them, possess over the conservative ones. In doing so, I beg to state, once for all, that I offer my opinion on such points with great dif-

fidence, knowing that chemistry is not medicine or surgery, but only one of their instruments. The practical advantage is this: When the surgeon desires the removal of the diseased tissue by caustics, if he uses a conservative caustic, he kills the tissue, but has to effect its separation by a further process of supuration, etc.; whereas, if he employs a destructive caustic, the processes are in simultaneous action, and the desired result is, consequently, more speedily accomplished.

“Nitrate of silver is essentially an oxydizing caustic, but its action is much slower than that of chromic acid or manganese with potassa, from the circumstance that it does not so readily part with its oxygen; and it forms an insoluble compound with organic structures, which acts as a preventive to its continuous power as a caustic, by forming a sort of impermeable coating on the tissue to be removed. I am aware that this action is an advantage where hæmorrhage is to be feared.

“The exsiccated sulphate of zinc and copper, when employed as caustics, act like chloride of zinc by their powerful affinity for water. But when the vis vitæ is destroyed by such affinity, their further action is that of strong antiseptics, thereby greatly, if not entirely, retarding the natural disruption of tissues which have ceased to possess vitality. Bichloride of mercury, and, in fact, all mercurial caustics, possess a conservative action, by their strong affinity for the albuminous components of organic structures, with which they form compounds of definite character.

“Nitric and sulphuric acids belong to the class of destructive caustics; the action of the former is that of the oxydation of the tissues, while the latter owes its power as a caustic to its power of extracting the elements of water from organized bodies, behaving like the exsiccated salts previously mentioned, with which it is sometimes judiciously combined to prevent the spreading of the acid beyond the parts to be destroyed by reason of its fluidity when combined.

“Chloride of gold has been extensively employed, generally in combination with other caustics, in some of the continental hospitals. When placed in contact with organic matter, this salt is reduced to a metallic state similar to the action of nitrate of silver; but as far as my experience goes, it is inferior as a caustic to the silver salt, because of the large quantity of oxydizing material which is set free when the organic matter is treated with nitrate of silver. Among the conservative caustics, arsenic and its compounds will find

its proper class; for although arsenic is poisonous to living tissues, it is a powerful antiseptic agent. It forms no combinations with dead or living tissue, and only a feeble one with albuminous matter; and from this cause it must be regarded, in a chemical point of view, as a very inefficient caustic.

“Chlorides of antimony and iron, which have been used as caustics, exhibit a mode of action similar to chloride of zinc. The very feeble action of the latter must, in some cases, be its principal recommendation.

“It will be evident from the previous statements, that chemistry will supply us with an indefinite number of caustics; for it is clear that whatever decomposes or combines with living tissue sufficiently to kill it, is to all intents and purposes, a caustic. It is equally manifest that, while it is the essential condition of every substance professing to be a caustic, that it should kill the living tissue, it by no means follows that all caustics performing this condition should destroy or dissolve away, as it were, the tissue, when no longer possessing life, for this latter property belongs to a distinct class of caustics.

“I am aware that I have not noticed the so-called irritant action of caustics; but, in explanation, I reply, that the consideration of this action is foreign to the purpose of this communication, and, moreover, a subject not within the province of the chemist.—*Med. Times and Gazette and Scientific Annual.*

On some of the Difficulties Attending upon the treatment of Stricture of the Urethra. By HENRY SMITH, F.R.C.S.

In the *Medical Times and Gazette* for August 21, of last year, I detailed at length a case of obstinate stricture of the urethra, which was remedied by dilatation, and careful general treatment, after the patient had been condemned to undergo the operation of external division of the canal by a Surgeon of large experience, under the idea that there was not any other method of relief. At that time I made some observations referring chiefly to a feature of difficulty which the case detailed particularly illustrated, namely, the almost insuperable rebelliousness to dilatation, which is every now and then met with in certain instances of this affection. I was enabled to show that a case of the most obstinate and unpromising nature might, by careful treat-

ment, be made to yield, without recourse being had to the knife, although both the patient and his Surgeon were convinced that it was the only remedy. This incapacity of certain kinds of stricture to admit of progressive and satisfactory dilatation, is a feature well known to all those who have seen much of the disease in question; but there is one feature in particular to which I shall refer to in these observations, and which I do not find much allusion to in the ordinary works on stricture, and this is the absence of improvement in the power of passing the urine, although dilatation has been carried on in a satisfactory manner. This is a difficulty which is exceedingly annoying and distressing, because, in the first place, the patient naturally expects that relief will be given so soon as an instrument of at least a moderate size can be introduced into the urethra, and the Surgeon knows that he has to deal with a feature in the complaint which may depend upon circumstances over which he has little control, and which will render the treatment of the case more troublesome. Mere density or tightness in a stricture acting as a bar to progressive dilatation, is a condition much less likely to hinder a satisfactory termination than the one alluded to; for in the one case, although the dilatation may advance but slowly, the improvement in the stream of urine is generally commensurate with the mechanical progress, and satisfactory both to patient and attendant, while in the other it will happen that the exercise of the utmost skill and endurance is but faintly rewarded.

Next to extreme irritability of the urethra, this one feature of absence of improvement in the stream, has been a source of greater difficulty and annoyance than anything else. Among a considerable number of very severe cases of stricture which have lately been under my care, my attention has therefore been much directed towards ascertaining its cause, and removing the symptom, if it may be so termed. In some cases it has not been difficult to account for it, as where one or more fistulous sinuses exist; when such is the case the bladder may be healthy and the urethra be fairly dilated, yet the patent condition of the artificial openings, which take so long to close, allows the greater portion of the urine to percolate through them, little comes through the urethra, and that little in any volume. In instances of this kind the patients may be assured that the stream of urine will increase as the sinuses close up, slowly as that event is too often known to take place.

There are, however, other cases of severe stricture, uncomplicated with fistulous openings in the perinæum, where the Surgeon has been able to carry on dilatation in satisfactory manner, and to such an extent that a good-sized catheter may pass, and yet there is either no improvement at all in the stream, or, if any, it is so slight as to be almost inappreciable. This obtains also not only in instances of stricture in persons of advanced age and of debilitated power, but it is occasionally met with in patients either in the very prime of life, or in those not much above adult age. It is in some of these latter cases that it is extremely difficult to understand the meaning of this symptom. It is considered by some men of large experience that it is the bladder alone which is in fault; that it has become weakened and dilated by the persistence of the obstruction in front; and that, even when this latter has been removed, the viscus does not recover its tone sufficiently to expel its contents in an effectual manner. That this is the true solution of the question, in some instances, there cannot be much doubt; but I am induced, by careful observation, to believe that in a considerable number of these cases the loss of power in the bladder is more apparent than real, and that the impediment to the volume and flow of the urine is in the urethra itself, notwithstanding that dilatation has been carried on to a measure with which the passing of urine in a small stream, or in drops even, seems almost incompatible. I have noticed that this very distressing feature has existed both in instances where the stricture has been exceedingly difficult to penetrate, the canal not being especially irritable, and in those cases where there has not been very much difficulty in overcoming the obstruction; but the urethra has been extremely sensitive. I have, moreover, noticed, especially in the latter cases, that more than a single stricture has existed; that there has been one near the meatus, or one or two inches from it; and as a rule, with but rare exceptions, the anterior stricture or strictures have been found to be most irritable and unyielding.

In such instances as these it is extremely difficult to overcome the irritable condition of the urethra, and to dilate the canal; and then, after this has been accomplished to such an extent that a No. 8 or 9 catheter is introduced, there is the mortifying result of little or no increase in the stream of urine, or even of a diminution in size. Now, I believe that in such instances, especially where the patients are young, or the stricture has not lasted long, the fault is

not in the bladder, but that that organ expels the urine with its wonted power, and that the fluid coming in contact with the irritable portion of the canal—although it has been dilated to the extent mentioned—causes it to contract forcibly, and thus produce the fine stream observed. Careful examination of the urine in these cases shows absence of any disease of the bladder; and, moreover, it will be seen that, small as the stream is, it is expelled with considerable force, and continuously; which circumstance will not be produced, I apprehend, by the mere action of the urethral muscular fibres, whether voluntary or involuntary. In a very well marked case of simple loss of power in the bladder lately under my care, in the person of a very fine young officer, all the symptoms of stricture were present; but there was hardly any impulse at all given to the urine as it was being evacuated, and the patient was compelled to strain violently. There was not the least obstruction in the urethra itself, and by well emptying the bladder artificially, and by attention to the general health, this viscus gradually regained its tone, as evidenced by the increasing size and force of the stream.

In the treatment of the cases I have been considering, much patience is required, both on the part of the Surgeon and the sufferer; for, as I have before stated, the latter is too apt to be greatly disappointed at the little improvement which is perceptible, and in his distress, is too liable to be misled into undergoing some heroic treatment which may either destroy his life, or give relief merely for a brief period. It is only by the continuous dilatation of the diseased canal to as great an extent as it will admit of, that the result so much desired will be obtained. If the patient is not advanced in years, or has not had stricture for a long time, he may be assured that a persistence in the treatment will be attended with satisfactory results; sometimes the desired relief will happen suddenly, at other times, and most frequently, the increase in the power of urinating will be only gradual, but will not be marked until an instrument of considerable size has been introduced. When, however, the features of the case indicate that the want of stream is due to a loss of power in the bladder, a long time elapses before the organ recovers itself, although the urethra has been well dilated by the Surgeon, and is kept patent by the sufferer himself. It is especially important in these cases to attend to the general health; for it will not unfrequently be found that this has suffered much, and that the loss of

power in the bladder is but a symptom, as it were, of constitutional debility, rather than the mere result of an obstructed urethra.

The case I now briefly detail will illustrate some of the foregoing observations:

A gentleman, aged 23, consulted me February 14, 1858, for stricture. On examination, I found that the urethra was remarkably irritable, and that there was a stricture at the bulb, through which I could only pass a No. 1 wax bougie. The strictured portion of the canal was most remarkably sensitive, and readily bled. I ascertained also that there was a stricture two inches from the meatus. The health of this patient was good; but the bladder was very irritable, and he was only able to pass his water with severe smarting, and in a fine stream. Urine acid but clear.

On inquiring into the patient's history, I found that he had had stricture for five years, and that soon after its appearance he had submitted to a great deal of catheterism with benefit; about one year and a half since, finding his symptoms returning, he unfortunately consulted a notorious person, who passed instruments from time to time during the whole of the period; he made use also of caustic, and upon the patient complaining that he had great irritability of the urethra, and nocturnal emissions, this worthy practitioner told him to have sexual intercourse regularly three times a week. This injunction was readily obeyed for three months, at the end of which time the patient's eyes began to be opened, and he resolved to take other advice. In order to show how this poor young fellow had been trifled with, I may mention that he brought to me a Britannia metal sound, equal to a No. 6, which he had been told to pass for himself.

It was evident that in this case the symptoms were due as much to the extreme irritability of the urethra, which had been induced by the wretched treatment he had undergone, as to the mere mechanical obstruction; and therefore it was necessary to relieve this, and at the same time endeavor to dilate the stricture in the most gentle manner. I therefore commenced the treatment by giving large doses of acetate of potash and tincture of hyoscyamus, and employed the wax bougie as a dilator.

Without entering into minute detail, I may mention that at the end of four weeks I was enabled to pass a No. 4 silver catheter, but the irritability of the bladder and urethra was excessive. In another fortnight I was able to pass only a

catheter one size larger, but the irritability was distressing, and there was no improvement in the stream. I was careful to be very gentle in my manipulations, nevertheless this want of improvement was disheartening to the patient, although the dilatation was progressing, and he placed himself under the care of another Surgeon, and I saw nothing more of him until the beginning of June, when he again consulted me. He informed me that several catheterisms had been performed upon him, at first with success, but on the last occasions the Surgeon had not been able to introduce the instrument.

I was able to pass a No. 3 silver catheter, and by the end of the month had got so far as No. 8, but the distressing irritability continued, and there was not any improvement in the stream of urine—it was passed forcibly, but in a small thin volume—by August 1st we were still only at No. 8, for inflammation of both testicles had followed the use of instruments, and I was obliged to desist for a time—the stream of urine was only equal to a No. 2 catheter.

On the 18th I managed, with difficulty, to introduce a No. 9, but the sensibility at the seat of stricture was extreme, and the contraction near the orifice impeded the instrument.

21st.—Stream better since the introduction of No. 9, and it continued improving. I subsequently divided the anterior stricture, and was enabled to pass as large an instrument as a No. 12. Found after I had passed this once or twice the stream became larger than it had ever been in his life, the irritability of the urethra disappeared, and he left me in the middle of October quite well and able to pass a No. 10 catheter for himself.

This gentleman called upon me March 21; he informed me that he had no trouble with his stricture at all, and I saw him introduce a No. 10 catheter into his bladder with ease; he adopts this necessary precaution once a week.

This case, although sadly mismanaged at first, illustrates the position I wish to maintain in this paper, that there may be no improvement in the power of passing the urine, although the stricture may have been well dilated, and yet that the desired relief, though tardy, will be brought about by continuous dilatation and employed to its fullest extent. It appears to me also that this case opposes the view of those who maintain that in all such instances the diminished stream, with a patent urethra, depends upon a loss of power in the bladder. Had this been so, the relief which at once

appeared after a No. 9 catheter had been passed, and especially after I had divided the slight stricture at the orifice, would not have occurred so suddenly. I attribute the absence of improvement in the power of micturition for so many months, to the extreme irritability and contractibility of the canal which was only overcome by the most persevering use of dilating instruments. It might be objected by some that the continual employment of instruments in the irritable canal will only lead to keep up the very excitement we intend to allay. If instruments are passed roughly, or if the attempts to increase their size are made too rapidly, I believe that the painful condition of the parts and the constitutional sympathy will be increased; but it is far different when gentle and very gradual dilatation is adopted—the morbid sensibility of the urethra is allayed, and in course of time entirely destroyed. A practical acquaintance with this fact is of value, not only in the treatment of stricture, but is to be made the most of in the treatment of stone by lithotrity; for an irritable urethra here is more a bar to success than where a stricture is concerned; but it is well known that the canal may be rendered comparatively insensitive by the cautious introduction of a sound several times prior to an operation being performed.

This is just one of those cases where the patient might have been easily led into the belief that perineal section was the only remedy. In fact, he had been informed on one occasion since his first consulting me, and when the difficulties alluded to were at their height, that cutting would have to be resorted to. I doubt not that many of these unfortunate persons who have submitted to this operation, have been in much the same state as this patient was in for the first few months of treatment, being induced to do so by the belief that the increase in the stream of urine would only be arrived at by laying open the canal.

Sometimes it happens that in a severe case of stricture the earlier attempts to dilate are attended with an improvement in the stream which is satisfactory to the patient. Then this improvement ceases, and does not show itself again for a long period, although the dilatation may be steady and progressive. When such a circumstance occurs there can be no doubt that the bladder is not in fault; but that it depends upon the irritability of the urethra, or an insufficient dilatation of the stricture. Without going into details, I may mention a case of a patient, aged 45, who was under my care from December to April; the stricture

was of fifteen years' standing and situated in front of the bulb. Treatment at the hands of various Surgeons of experience had been pursued, one of whom had performed internal incision on two occasions. The urethra, moreover, had unfortunately been wounded on one occasion through the stilet of a gum-elastic catheter escaping from the instrument. I commenced the treatment of this difficult case by dilating with silver catheters. The size and power of the stream of urine increased in proportion with the instruments, until I had got up to No. 4 and 5; but subsequently to this there was a good deal of irritation, and when a No. 8 or 9 had been introduced, the stream of urine was not larger than when a small instrument had been passed. Dilatation was, however, patiently persisted in, and after No. 10 had been introduced the size of the stream again increased and continued doing so until I had arrived at No. 13, when I dismissed him, able to pass his water in a good stream.

This case is interesting, as illustrating not only the particular point I have been dwelling upon, but it shows also how utterly useless is the practice of internal incision, in remedying a stricture for any length of time.

The practice of external division of stricture, which a misapprehension of some of the symptoms and an insufficient reliance upon the power of dilatation and other agents, was the means of bringing into use a few years since, has now been proved beyond all doubt to be so dangerous to life, and so inefficient to produce the complete remedy once so vaunted, that it may hardly seem necessary to consider this subject here; however, notwithstanding that the operation has received the *coup de grace*, still it may be well, for the sake of those who seek information, to mention any facts appertaining to it.

It will be seen by referring to this Journal of November 20, 1858, that I detailed the particulars of a case of stricture which had recently been under my care, and where the operation of external division had been performed by Mr. Syme himself only some seven or eight months before. This gentleman, under 30 years of age, was in a wretched condition, with a most irritable stricture, a fistulous opening in the perinæum, and broken down health. Now I will contrast this case, which had been operated upon, with the present condition of the case to which I referred to in the opening words of this paper, and where the patient of about the same age, and suffering so severely as to have retention every day of his life, and to be compelled to carry a bougie

with him wherever he went, was to have been cut. Immense difficulties were overcome, and this gentleman left me last August with his urethra well dilated, and able to pass a large catheter himself. Wishing to know his present condition, I got a letter from him, dated May 7th. He says: "My general health is perfect. I regularly pass, once a week, a No. 9 instrument, which I am able to do without causing any bleeding. I can retain my urine as long as any one, and am never troubled by getting up at night. I never suffer from retention of urine."

I may mention that this gentleman is not in a particularly favorable condition for the subjugation of a stricture, he being in the Horse Artillery, and thus compelled to take much equestrian exercise.

About a fortnight since I had in my house, on the same morning, two unfortunate gentlemen, in the prime of life, who had undergone the perineal section; one, five years since, at the hands of a London Surgeon of large experience; the other, three years previously, had been cut by Mr. Syme himself in Edinburgh. They were both in a wretched condition, the one has his perineum riddled with three fistulous openings; but as Mr. Syme himself was not the operator here, the proceeding was of course unskilfully and improperly done, and I will say no more about it. The other case, however, was treated by Mr. Syme himself, and the operation was of necessity done according to the rules laid down by that Surgeon. Yet, where is the complete remedy? The unfortunate gentleman assured me before he left Mr. Syme's care after the operation, he felt the stricture returning, and that notwithstanding he persisted in passing the instrument every fortnight, as he was told to do, the canal contracted, so that he was unable at the expiration of ten months to pass anything at all. Since then he has been roaming about from one Surgeon to another, in the hope of getting his stricture dilated. When he first consulted me some six weeks since, I could only with the greatest perseverance succeed in introducing a small No. 4 catheter, although a distinguished Surgeon in Dublin had introduced a No. 8 only a fortnight previous. There was no fistulous opening left here, as in the other; but there is the irritability and contractility of the urethra as before, although Mr. Syme performed the operation himself, and according to the information given to me by the patient, assured him it would be a certain cure. I have before enunciated the opinion that not only does this operation not prevent the return of the stricture, but that the

re-contraction becomes more severe than before. As I had not the opportunity of seeing this gentleman before he was cut, I cannot positively state whether this holds good here or not; but that the induration still remained, or had reformed at the site of the old disease, was quite evident by running the finger along the perinaeum. Cutting cannot possibly get rid of this; and so long as this remains, the stricture will persist.

Caroline-street, Bedford-square.

Osseous and Cartilaginous System.—Histological Character of Bone produced by the Transplantation of Periosteum. By DR. OLLIER.*

This observer has given the result of his experiments upon the artificial production of bones by the transplantation of periosteum, and on the regeneration of bone after resections and complete removal. These experiments, of such vast interest to physiology and surgery, were performed upon rabbits of various sizes and under various hygienic conditions, in whom he grafted portions of the periosteum into parts outside the limits of normal ossification, and under the influence of vessels strange to such ossification; and he found that whenever portions of this membrane have been transplanted, exudations capable of ossification have been produced. At the end of a certain period the formation of true bone was the result, demonstrating that the periosteum is not only a mere limiting membranous envelope, and that a tissue may preserve its property and functions, although removed from the influence of all naturally surrounding parts. The author exemplifies especially the origin and mode of development of new bone, showing that if it proceeds from the periosteum it is not the result of transformation of its fibrous layers, first into cartilage and then into bone. The important element of this membrane engaged in the process is a layer of blastema on the inner surface, so delicate that in scraping the periosteum with a scalpel it is difficult to obtain any portions of it visible without the microscope; and this blastema appears as a rule to become penetrated by calcareous salts between the fourth and twelfth days, (a period corresponding to the formation of the first osseous cavities,) but if this process fails to occur in that period, the new bone remains in part fibrous, and the development is slow and incomplete. Insufficient nourishment, suppuration of the periosteum, and other conditions, injuriously affect the process. Without digressing further, we will here state the

* Brown-Sequard's *Journal de Physiologie*, p. 14, Jan., 1859.

three kinds of experiments which the author followed in the prosecution of the question. They were as follows :

1st. Those in which the portion of periosteum used was still left in more or less connection with the bone, and was grafted into the midst of muscles or under the skin, but continuing to receive vessels from the bone.

2d. Those in which the pedicle of the portion of periosteum was divided three, four, or five days after transplantation, so as to interrupt all continuity with the bone.

3d. Those in which the piece of periosteum completely detached from the bone and rest of periosteum was at once transplanted into neighboring or distant parts.

The new bone formed in any of the above ways, varying in size according to that of the transplanted periosteum, (in one case a bone almost as large as the tibia being produced,) is found at its periphery to possess a regular layer of compact osseous tissue, and to be covered by its own periosteum. It is hollowed in the interior by medullary spaces, which terminate by uniting into a relatively large cavity, and which are formed by the rarification of the bone-tissue and production of small cavities, whose walls finally give way. The osseous corpuscles, as observed in delicate sections under the microscope, are seen at first to be irregularly disposed, but in the compact tissue they are arranged in layers sufficiently distinct around the vascular canals; but the regularity which in natural bone is observed around the Haversian canals is here wanting, as far as hitherto has been observed. The Haversian canals are generally parallel to the axis of the bone, but their arrangement is not perfectly intelligible in some respects. The medullary spaces are full of a soft, reddish, vascular substance, like foetal medulla, and is found to contain: (*a*) Free nuclei (the medullocelles of Robin) and small medullary cellules with a round nucleus; (*b*) Plates with many nuclei, generally infiltrated with fat and granulations, and containing from three to eight nuclei analogous to free nuclei (the myeloplques of Robin); (*c*) Fatty matter; (*d*) Some fibro-plastic elements and some fibrils of connective tissue; (*e*) Blood-vessels. There very often is to be observed a peculiar longitudinal groove running all along one of the surfaces of the new bone, owing to the deficient union of the parallel borders of the portion of periosteum; a similar line is also to be observed on the surface of bone reproduced after sub-periosteal resections.

The author then describes at length the method of development of bones obtained by the transplantation of periosteum, of which the following is a condensed statement: At the very commencement an effusion of lymph takes place, at first se-

rous and then more consistent, which infiltrates the portion of periosteum and neighboring tissues. The periosteum soon becomes swelled, and its capillaries filled with blood, and on its inner surface an exudation is formed, which is distinguished from the above effusion by its greater consistence, and by its constant increase whilst the other one decreases.

At the end of four or five days an accumulation of firm, transparent, or slightly grayish material occurs within the periosteum, (for its edges are then united so as to form an envelop for the blastema.) This material is chondroid rather than cartilaginous. About the seventh or eighth day the calcareous matter begins to be deposited, a process not necessarily preceded by the formation of veritable cartilage, although sometimes we find a substance hard, elastic, and with the external characters of the latter. When once commenced the ossification advances quickly, beginning at the centre and passing to the periphery. The above-mentioned blastema is found by the microscope to be composed of a large number of free nuclei and cellules analogous to those found in embryonic tissues, imbedded in an amorphous, more or less granular substance. A few fusiform cellules or very fine fibrils are also met with; and, moreover, cellules with a single nucleus like the small cellules of the medulla, and large regular cellules with numerous nuclei like the multi-nucleated plates of the same tissue. The blastema is more abundant in proportion to the growth of the animal. Under the transplanted periosteum this layer of blastema continues to be the germ and point of departure of new bone, the various elements being formed in succession, and the intermediate substance becoming fibroid, calcareous granulations being deposited, and ossification accomplished.

In those cases in which cartilage has been found, the cellules and cavities differed from those of normal cartilage in form and grouping. The author does not appear able to account for the existence of cartilage in some cases, and its absence in others. He proceeds to detail experiments showing that neither the blood-vessels nor external layers of periosteum suffice to produce bone; a layer of blastema of embryonic cellules being necessary. These embryonic elements are seen intimately mixed at certain points with the cellular tissue and elastic fibres composing the deep layer of periosteum.

He concludes by speaking at length of the reproduction of various kinds of bone and joints after resection, and shows that after the removal of articular extremities of two contiguous bones, the articulation is capable of regeneration if the capsule and ligaments be left continuous with the periosteum of the resected bone. As a means of diminishing the risk of

suppurative inflammation of bone after amputation, and of forming the union of the stump, he suggests that the end of the bone should be covered, and the medullary cavity closed up, by a piece of periosteum.—*British and Foreign Medico-Chirurgical Review.*

Fever and Ague. By Dr. Jourdan, of Buffalo, N. Y.—In the western parts of the United States, there exist three popular prejudices very serious in their result. I allude to the error, 1st. That the cure of the ague must not be too sudden. 2d. That it is better to let it wear out itself. 3d. That the ague is incurable in many localities.

To these errors we would reply that a long standing ague always determines the irritation or the inflammation of the brain, or the stomach, the liver, kidneys, and the spleen, and that a speedy cure of the disease is the only alternative, if we would prevent those complications; and, finally, that fever and ague is a disease curable everywhere, and in a very short time, without compromising the constitution of the patient, in the hands of an experienced physician. Fever and ague, dumb ague, chill and fever, so called, are nothing else than the intermittent fever in its various forms, and according to its various paroxysms; it is not a disease by itself, but the result of disorder of the nervous system in general, and particularly of the *cerebro-spinal axis*, consisting in hyperemia of the large nervous centres, viz: of the spinal marrow, *ganglia*, or of the brain. During the attack, the patient complains of headache, nausea, pain in the back; there is congestion of the blood in the brain, lungs, liver, kidneys and spleen. In a long standing ague all these organs become more or less irritated or inflamed, and always in proportion to the duration of the fever and the strength of the patient, his age, and his constitution.

The appearance of an individual who has been suffering for months with this disease, will convince any one of my assertion. Some have the appearance of one in the last stage of consumption; others appear sinking with a chronic inflammation of the stomach; others with affections of the liver.

But if we refer to the pathology of those who have died of the effect of a long standing ague, we shall always find congestion, or other injury of the brain, sometimes of the stomach, or of some of the organs above mentioned. In 1852, writing upon this subject, I stated that 2,354 inter-

mittent fever patients in the wards of a French military hospital on the north coast of Africa, 759 of them suffering with the quotidian type, had disease of the mucous membrane of the digestive tube, and 321 of them had suffered from congestion of the brain; that in those suffering with tertian fever, the intestines were found diseased in 428 patients, and the brain in 175 others; 51 were affected with disease of the lungs, and 25 were affected with disease of the lungs and brain; 256 had suffered from chronic obstruction of abdominal viscera; 91 from disease of the spleen, and 20 of the spinal marrow.

It is evident, therefore, that if intermittent fever is not soon checked, it will lead to the inflammation of some of those organs above noticed, and it will, sooner or later, compromise the life of the patient; and if death is not the immediate result, there always will exist irregulatities of the functions of the stomach, or a chronic inflammation or obstruction of the liver, frequent headaches, and, perhaps, chronic pulmonary affections.

It is only necessary to enumerate these results of fever and ague, when not properly cured, as a sufficient argument in favor of a speedy check of this disease, in the very beginning. The most obstinate ague will yield, in a few days, to the methodical treatment of a well-informed physician. My experience several years on the coast of Africa, where intermittent fever is very frequent among the soldiers, and ten years in the Western States, has convinced me that the physician cannot rely on any specific, but only on a methodical treatment, the constitution of the patient, his strength and age being previously consulted. I have found that generally a bleeding, followed by the use of quinia, with such other remedies as the symptoms indicated, have always accomplished speedy and permanent cures.

On Apparent Equivocal Generation: by H. JAMES CLARK, of Cambridge, Mass. (From the proceedings of the American Academy, Boston, May 10, 1859.)

At the close of our last social meeting I was asked if I had seen any trace of organization in the globules of the vibrio-like fibrillæ of the muscle of sagitta. My answer was in the negative. No longer ago than yesterday I was fortunate in discovering the origin of another, or rather of several forms of these pseudo-animate bodies called infu-

soria. Whilst watching the decomposition of the inner wall of the proboscis of a young *aurelia flavidula*, our common jelly-fish, I observed that the whole component mass of cells was in violent agitation, each cell dancing zigzag about within the plane of the wall. If any one will shake about a single layer of shot in a flat pan he can obtain an approximate idea of the appearance of this moving mass. In a perfectly healthy condition these cells lie closely side by side, and do not move individually from place to place, but yet are active on one side, which constitutes the surface of the stomach, where they are covered by vibratile cilia. As the young aurelia grows, this wall becomes separated from the outer one, but not completely, for the cells of the two adhere to each other by elongated processes varying in number from one to six or seven. Each cell of the inner wall contains numerous red or brown granules, a few transparent globules, and a single large clear mesoblast. When decomposition ensued, these cells became still farther separated from each other and danced about in the manner which I have thus described. The vibratile cilia were not observed to share in this movement; in fact, I could not detect their presence, because, no doubt, they had become decomposed and fallen away; but the elongated processes, which heretofore had remained immovable and stiff, lashed about with very marked effect upon the cells to which they belonged, and caused them to change place constantly. At last the inner wall fell to pieces, and every cell moved independently and in any direction. If at this time they were placed before the eyes of Ehrenburg or any one of his adherents, he would at once pronounce every cell with a single process a *monas*; the red or brown granules would be recognized as the stomachs filled with food, the transparent globules as the empty stomachs, and the large mesoblast as the genital organ or propagative apparatus. Those with two processes would be to him a *chilomonas* or some other genus closely related to it; those with three or four on one side would be the *oxyrrhis* of Dujardin; and those with six or seven processes the *hexamita* of the same author. To complete the apparently truthful determinations of these microscopists, I would only have to place before them some of these cells which I have found in a state of self-division, each half possessing its genital-like mesoblast. In all their various shapes and actions, and in the mode of self-division, there is a remarkable and undistinguishable resemblance to numerous moving bodies which go under

the name of infusoria, and which may be found, unconnected with any living organism in various kinds of infusions.

Therapeutical Action of Solanine and Dulcamara.—Prof. Caylus, of Leipzig, has undertaken a series of experiments to ascertain the exact effect of dulcamara, and its active principle, solanine. These substances belong to the class of narcotico-acids, as they produce a paralyzing action on the medulla oblongata, and an exciting action on the nerves. They cause death by producing paralysis of the respiratory muscular apparatus, by an action analogous to that of coneine and nicotine. They possess a therapeutical action in spasms and irritable conditions of the respiratory organs, in simple spasmodic cough, whooping cough, and spasmodic asthma. Their therapeutical action in certain morbid conditions of the blood, as gout, rheumatism, constitutional syphilis, and perhaps in certain chronic diseases of the skin—may be due to their augmenting the excretion by the kidneys, of the constituent parts of the blood which have undergone combustion, and not to the excitement of cutaneous activity. Solanine and dulcamara may be given without danger in inflammatory conditions of the stomach and the intestinal tube, as they exercise no action on those organs. Inflammation of the respiratory organs presents no contra-indication to the employment of solanine and dulcamara, but they are contra-indicated in inflammation of the kidneys. The medium dose of solanine for an adult is from one to five centigrammes of acetate of solanine, a substance which M. Caylus prefers to the pure alkaloid, in consequence of its solubility. The most suitable form of administration is in pills, the solutions of the salts of solanine having a very disagreeable taste. The extract obtained from alcohol, and then washed with water to remove the alcohol, is preferable to the watery extract generally employed.—*Presse Medicale Belge*, Sept., 1858.

Diuretic Action of Iodide of Potassium. By C. HANDFIELD JONES, M. D., F. R. S.

It appears reasonable to expect that the healing influence of a drug in certain morbid states may be shown to be explicable by its general mode of action, yet there are certain remedies which exert a very positive curative power, and yet afford no clue, in their general mode of action, to explain their special effects. Such a remedy, according to Dr. H. Jones, is iodide of potassium, which has certainly a strong controlling power over periosteal inflammations, whether syphilitic or

rheumatic, as well as over rupial ulcers, which generally heal under its use. It is also more or less useful in inflammations affecting fibrous tissues in various parts. Dr. Jones has made a series of experiments upon the effects of iodide of potassium administered to patients, and has examined the urine in each case; and the general results are thus summed up:—1. That the quantity of water was greatly increased in three out of six cases; a little (one-sixth) increased in one; diminished in two. 2. Out of five cases, the acidity was increased in three, diminished in two. 3. Urea was increased in three, diminished in three. 4. Phosphoric acid was increased in four, diminished in two. 5. Sulphuric acid was increased in four, diminished in two. 6. Chlorine was increased in three, diminished in two out of five cases; in two the increase was very considerable. 7. Uric acid was diminished in four out of six cases, greatly increased in the remaining two. The most marked effects seem to be the increase of the water, of the phosphoric and sulphuric acids, and of the chlorine. But Dr. Jones adds, that as far as these confessedly empirical results go, there seems to be no help or clue afforded to trace out any connection between the empirical facts just noticed. A varying diuretic effect does not give any explanation of the *modus operandi* of the drug in curing a node or an ulcer. For the present Dr. Jones concludes that we cannot attain to more than an empirical acquaintance with the operation of iodide of potassium.—*Beale's Archives of Medicine*, No. 3.

Proposition of an Abortive Treatment of Typhus Fever.
BY DR. A. KORTUM.

The means proposed by the author consist in the application of a lotion composed of a solution of chloride of calcium. four grammes \mathfrak{v} i to five hundred grammes \mathfrak{v} xvi of water, The body is sponged with this lotion threetimes daily, and besides, there is kept applied to the abdomen a folded cloth saturated with the liquid.

The observations upon which the author bases his proposition show that he has treated perfectly characterized typhus fever, the progress of which has been arrested, and the cure effected much sooner than if allowed its habitual course. The author regards the skin as the principal seat of the poisonous matter that characterizes typhus, and he believes that it is in the capillaries of the skin that the blood becomes charged with this virus, from which it is disseminated into the system. According to this view, the chloride of calcium neutralizes the poison. The author concludes by entreating his medical con-

freres to employ this mode of treatment, and to make known the result.—*Gazette Med.*, Aug. 20, 1859; from *Journal Fuer Kinderkrankheiten*. E. B. H.

On the Employment of Veratria in Acute Diseases of the Chest.
(Bulletin General de Therapeutique, Jan. 30th, 1859.)

M. Aran has called the attention of practitioners to the remarkable effects produced by the internal use of veratria in febrile diseases, and especially pneumonia. In the 'Sardinian Medical Gazette' an article has appeared, in which Dr. Ghiglia, without any knowledge of Mr. Aran's researches, recommends the use of veratria in the same circumstances, except that he never employs this alkaloid alone, but associates it almost always with opium, sometimes in the form of pill, sometimes as syrup. The dose of veratria is five millegrammes (.077 of a Troy grain) in a pill with the same quantity of opium, and the number of pills to be taken in the twenty-four hours varies from six to seven, and even twelve, according to the circumstances. In this dose, according to M. Ghiglia, vomiting rarely occurs, but nausea and the other depressing effects of veratria are present. The results obtained by M. Ghiglia in certain cases of pneumonia, bronchitis, and broncho-pneumonia, have been sometimes most remarkable, but have been occasionally unfavorable, and the following are the results arrived at by this author: "1. The inflammation of the respiratory organs, when they have arrived at such a period as to produce disorganization of the parts, are not improved by the use of veratria. 2. The action of this substance is the more favorable in proportion as the disease is more recent. 3. The tolerance is very various, according to individual habits, and perhaps also according to certain peculiarities which are not yet well understood. 4. The more easily the tolerance ceases the more marked is the depression. 5. Veratria is in many respects a preferable medicine to others which are more constant in their action but less easy to take. And 6. It is perhaps prudent, in severe inflammations of the respiratory organs, to order a few bleedings before prescribing the veratria."

Epistaxis of Alarming Character Arrested by Injections of the Perchloride of Iron. By E. J. FOUNTAIN, M. D., Davenport, Iowa.

I am induced to publish the following case from reading the report of "*Death from Epistaxis*," occurring in the practice of Dr. Triplett, of Virginia.

About two years ago I was summoned in haste to see a young man who was reported to be in a dying condition from the loss of blood. The bleeding had continued uninterruptedly for about thirty hours, escaping constantly from the nostrils, and frequently thrown out in clots from the posterior nares.

He had been attended by a German physician, who had not succeeded in arresting the hæmorrhage, and before my arrival he had abandoned the case, from motives which I need not here mention.

I found him in a frightful condition, his face, hands, linen, and much of the bed-clothing, and the floor, being covered with blood. In one corner of the miserable apartment, where many people were crowded, was a pile of rags and towels, saturated with blood.

He was so impoverished that he could not support himself in an upright position, and the extreme palor of his skin and colorless lips indicated plainly that he had lost a large quantity of blood.

I immediately plugged the nostrils, anteriorly and posteriorly, in the usual way. I supposed this would arrest the hæmorrhage, but I was mistaken. Very soon the blood escaped through the plugs in each direction, and the flow returned as profuse as before. I then removed the plugs, and rolling up two quite large pieces of fine, dry sponge, I introduced them as before, and so firmly, that I thought it would be impossible for a drop of blood to escape. I then left him, and returning an hour after, I was astonished to find the blood escaping as freely as ever. I again removed the plugs, and washing out the nostrils by injections of cold water, I pressed into each a roll of *tannin*, made into a soft mass with a little water and glycerine; I packed the nostrils full with this, but it did no good. I then introduced the plugs a third time, using compressed sponge, and forcing them in so firmly, that I feared I might have great difficulty in removing them. I then had ice applied constantly to either side of the nares, and kept the patient perfectly quiet. This answered the purpose for about half an hour, and then the bleeding returned as bad as ever. By this time the patient experienced the alarming symptoms of excessive loss of blood—ringing in the ears, occasional blindness, &c. The case looked desperate to me, while the patient, and even some of his friends, protested against further effort, as useless and cruel. I saw that it *must* be checked very soon, or it would surely be fatal. I removed the plugs with some

difficulty, and washing out the nares, I passed into each a piece of nitrate of silver, about a quarter of an inch in length, carrying them back with the forceps about four inches. I also introduced a curved injecting instrument, perforated towards its extremity with a number of small openings, and forcibly injected a strong solution of the same caustic. This did no good.

It now occurred to me that the perchloride of iron might answer the purpose. I soon procured it, and after washing out the nostrils as before, I injected a quantity of the undiluted perchloride into each nostril. This immediately checked the bleeding, and proved an effectual remedy.

Twenty-four hours after this the bleeding again returned, when I repeated the injections, and with the same happy effect.

There was no recurrence of hæmorrhage after this, and the patient soon recovered, so as to go about, but for quite a long time felt the effects from the loss of so much blood, which had been so excessive as to leave him but a very slender hold upon life. I know not in what other way it could have been saved; and the publication of this may be the means of rescuing others in similar circumstances.

“*On the Spinal Cord.*—The *Compte Rendue*, No. 24, 1859, contains an analysis by Mr. Flourens, of a memoir to the *Academie des Sciences*, by MM. PAOLINI, on this subject. The résumé of his experiments are set forth in the following:—

“1. The posterior and lateral cords of the spine are endowed with exquisite sensibility.

“2. The division of these cords impedes sensitive impressions to the encephalon.

“3. The impressions are transmitted by the posterior spinal roots, after a short passage by the side of the medullary fibres of these cords, thence pass into the gray substance of the column.

“4. The gray substance although insensible to the same, and incapable of receiving impressions excited in the sentient system, yet appears to be the channel or means indispensable for the transmission of these impressions to the sensorium commune.

“5. The posterior cords alone, being cut transversely, it is found that the sensibility of the parts of the animal below the section are temporarily augmented.

"6. The posterior cords preserve their proper sensibility well, when cut at two or three points, at certain distances from each other.

"7. The anterior cords are insensible to the immediate application of stimulus.

"8. Finally, the anterior cords are essentially motors, and strangely enough they have no semblance to the production of sensation.

"M. Flourens at the same time submitted an analysis of a paper by M. Van Kempen, of the University of Louvaine, concerning some physiological experiments on the transmission of sensibility and motion in the spinal cord: The author has repeated his experiments for several consecutive years, and those also of other physiologists, and arrives at the following conclusions:—

"1. In frogs, the transmission of *conscious sensibility*, is crossed (*croise*,) and continues the entire length of the spine; that of movement, on the contrary, is *direct* in the lumbo-dorsal portion, and crossed in the cervical portion.

"2. In pigeons the inter-crossing of the conductors of *conscious sensibility* are placed throughout the entire length of the cord. The transmission of *voluntary movement* is direct in the lumbo-dorsal region; and is, on the contrary, but *partially crossed* in the cervical region.

"3. In the mammifers, the propagation of *conscious sensibility* is crossed for the length of the column. The transmission of *voluntary movement* is *direct* only in the lumbo-dorsal region; in the cervical region it is in part crossed, and a very large part is again *direct*; in all our experiments upon the posterior side of the organ, we have found strong paralysis of the opposite side."—*Pacific Medical and Surgical Journal*.

On the Treatment of Epithelial Cancers by the Application of the Actual Caustery. By M. SEDILLOT. (Revue de Therapeutique Medico-Chirurgicale and Journal de Medecine de Bordeaux, October, 1859, p. 693.)

In the treatment of epithelioma, the rule, which is always observed, is to remove the whole of the morbid mass, together with a portion of the surrounding healthy tissues, in order to prevent a return, and this object may be effected by the use of the knife, the potential caustery, or by means of the Vienna, arsenical or Canquoin's paste.

There are some cases which are very embarrassing to the

surgeon, as it is difficult to stop the progress of the disease, and two dangers are thus encountered, either to abandon the patient to his fate or to expose him to great deformity, which is scarcely counterbalanced by the certainty of a cure. Cases of this description are those in which the canceroid affection threatens to involve the free border of the lids or attack the whole thickness of the walls of the nose, or when it approaches the commissure of the lips or the auditory canal.

It has long been known that fibrous tissue is not prone to be invaded by epithelial cancer, and M. Sedillot considers it philosophical to profit by this fact, and, by the application of the hot iron, produce a dense, fibrous tissue, with slight organization and no tendency to morbid changes. By this means to destroy the disease, and create a barrier to its extension with little danger of relapse.

Another motive for adopting this practice is, that prolonged suppuration is favorable to the elimination of cancerous elements, an opinion which the author has verified by the microscope, finding that portions of tissues, infiltrated with cancer at the time of the operation, did not present any trace of the disease after several weeks of suppuration. This was a favorite treatment of M. Boyer, who persisted in causing the wounds made in the extirpation of canceroid growths to suppurate for some time, with the effect of having but few returns.

M. Sedillot reports five cures by this procedure, of which the following case is a good example. A woman, seventy years of age, presented herself at the clinic with an epithelioma of the lower lip, of seven months duration, one and a third inches in breadth by one inch in length. The mucous membrane was scarcely ulcerated, but if the ordinary operation by a V-shaped incision had been performed, it would have been necessary to remove two-thirds of the lip. The most projecting portion of the tumor having been snipped off with the scissors, the hot iron was applied to it, and in four days more was again repeated. The cure was complete in fifteen days, and in two months after the operation a photograph of the patient was shown to the Academy of Sciences, from which it was evident that the middle portion of the lip was restored in a regular manner, its breadth and length being preserved, and the cicatrice being soft and unbroken.

The author believes the procedure to be very simple, not attended with much loss of substance, and more sure than

the knife. As chloroform is always to be administered, the patient's fears are quieted, and he experiences no pain. Should an indurated spot appear in the cicatrice, denoting a tendency to a return of the disease, it must be treated in the same manner.

On the Action of Fatty Bodies in the Absorption and Assimilation of the Metallic Oxides. By Dr. JEANNEL, of Bordeaux. (L'Union Medicale, Feb. 15th, 1859.)

Dr. Jeannel has made a number of experiments, from the results of which he is led to believe that he will be enabled to explain the very obscure question as to the part taken by the acid or neutral fatty bodies of the blood in the absorption and assimilation of the metallic oxides. These experiments will also, he thinks, contribute to support, in a novel point of view, the opinions offered by MM. Arthaud and Dupasquier as to the hygienic operation of the bicarbonate of lime, which is in fact a mineral aliment. They will at least prove this singular fact, that in the experiments of the laboratory, the bicarbonate of lime of the potable waters may become the medium of dissolving the metallic oxides in the fat oils. In fact, he hopes to prove that several important salts, as sulphate of iron, potassio-sulphate of iron, sulphate of copper, bichloride, biniodide, and protochloride of mercury, being decomposed by the bicarbonate of lime of the potable waters, by the alkaline carbonates or bicarbonates in a weak solution, or by the carbonates of the alkaline animal liquids in presence of the fatty oils, are dissolved in considerable proportion by the latter, especially at the temperature of the body. Dr. Jeannel observes that the metallic salts introduced into the stomach, if they resist the solvent action of the acid liquids in the first digestion, and if they are not absorbed with the water taken as drink, must necessarily pass into the intestine, and there undergo the decomposing action of the alkaline liquids in presence of the fatty matters with which the oxides form combinations susceptible of being absorbed under the form of emulsion. He also finds in liquid blood, which is at once alkaline and fatty, the elements which his experiments proved, when artificially united, to be capable of transforming the mineral salts dissolved in water into insoluble but deleterious oleo-stearates or oleo-margarates; and he is led to believe that the fatty salts are the definitive form assumed by the metallic salts, whether they pass directly into the

blood in the form of a weak aqueous solution, or undergo decomposition by the alkaline intestinal liquids. It would therefore be under the form of fatty salts, that we ought rationally to administer metallic agents, when we propose to moderate irritability of surface and to obtain constitutional effects.

From the results of numerous experiments, Dr. Jeannel draws the following conclusions:

1st. A solution of a metallic salt being decomposed by an alkaline carbonate in presence of a fatty oil in excess at the ordinary temperature, a part of the metallic oxide passes in solution into the fatty body. This reaction is favored by a temperature of 40° Cent.

2. The bicarbonate of lime of the potable waters decomposing very weak metallic solutions, the oil which is shaken in the mixture seizes the metallic oxide, at least in part.

3. The alkaline animal liquids, as serum of the blood, milk, and white of egg, being placed in contact with a metallic salt in weak solution, and oil, the alkaline carbonate contained in the animal liquids is most frequently sufficient for decomposing the salt, the oxide of which is dissolved in notable proportion in the fatty body.

4. If it is supposed that an aqueous solution of a metallic salt having escaped digestion in the stomach, arrives as far as the intestine, it must be admitted that it is there decomposed by the alkaline animal liquids mixed with fatty matters, and that the metallic oxide enters in solution into the latter.

5. The same facts and reasonings lead us to admit that an aqueous solution of a metallic salt arriving at the blood undergoes at first a double decomposition, the final consequence of which is the formation of a fatty salt.

6. Calomel is decomposed by a weak solution of bicarbonate of soda; chloride of sodium, and probably bichloride of mercury, are formed and dissolved together. The presence of chloride of sodium retards this decomposition and solution.

7. Calomel being mixed with water containing bicarbonate of lime or bicarbonate of soda in solution, if oil is shaken with the mixture, it becomes charged with a notable quantity of mercury. All these reactions are favored by a temperature of 40° Cent.

8. If in the administration of medicines from which a constitutional or dynamic effect is desired, we would endeavor to imitate the compounds formed naturally in the organism, we ought to prefer the form of fatty salts in the administration of metallic agents.

On the Production of Cataract in Frogs by the Administration of Sugar. By S. WEIR MITCHELL, M. D. (Read before the Biological Department of the Academy of Natural Sciences, October 3, 1859.)

A few months ago I had occasion to perform a large number of experiments upon the osmosis of woorara through animal membranes. During one of these experiments, a solution of the poison was placed within the stomach of a rabbit, and, the two extremities of the organ being secured by ligature, it was suspended in syrup. At the close of two hours a portion of the syrup, about two drachms, was injected into the subcutaneous tissues of a pigeon, who did not suffer from it in any way. A frog of small size received at the same time, in the dorsal subcuticular sac, about one and a half drachms of the suspected syrup. Much to my surprise he became feeble, and died in about four or five hours. As it was not impossible that the syrup used might contain woorara, owing to this substance having exosmosed from the stomach, the death of the frog was attributed to the poison. To correct this result, the remainder of the syrup, about three ounces, was evaporated to dryness and treated with alcohol. The alcohol was then carefully evaporated to a small bulk, and injected under the skin of a pigeon. Upon close examination it did not appear to be poisoned, or to be in any way injured by the injected material. It now occurred to me that, as the amount of sugar employed in the case of the frog was very great compared to his bulk, it might, possibly, be destructive to life when used in very large doses.

Experiment.—To test this view, three frogs of middle size were treated with sugar in the form of syrup, two drachms being injected into the dorsal subcuticular sac of each animal. Within two hours the first frog became sluggish; the dorsal sac, which had gradually enlarged, swelling from an accumulation of fluid in its interior. This fluctuating mass was the syrup, augmented by the exosmosis of fluids from the vessels or extra-vascular tissues, or both. As the frog became more and more feeble, the larger part of this collection of fluid disappeared. The frog died at the close of ten hours. During the latter portion of this time my attention was arrested by the white appearance of the frog's eyes, which, on close examination, proved to be cataractous; the cornea remaining perfectly clear and transparent.

Experiment.—The second frog was treated with repeated doses of syrup given internally. The phenomena of exos-

mosis were far less marked in this case, but large quantities of mucus collected in both stomach and œsophagus, and were finally disposed of, in part, by vomiting. The mode of death did not differ from that last described. The cataractous appearance was not seen until just after the frog's death.

Experiment.—The third frog was placed in syrup, so that when seated in the usual posture the syrup covered its hind legs. Death took place in seventeen hours, but the cataract was not formed as usual, or, at least, was not externally visible. I did not examine its eyes post-mortem.

From the time I observed the development of this curious form of cataract it became a chief point of interest in the sugar poisoning, and was studied with attention. A few preliminary experiments convinced me that the best and most certain mode of causing the cataract was to inject the sugar in syrupy solution into the subcuticular sacs. The results thus obtained were extremely curious. Of eight frogs, nearly alike as to size, and all of one species, (*R. pipiens*), thus treated with injections of two and a half drachms, six had cataract. In four of the six this was apparent during life, in one it was doubtful until after death, and in one no cataract could be seen until after death. Of the cataractous cases one was thus affected short of six hours, the remainder became so affected between six and thirty-eight hours. Two of the frogs suffered considerably from the poisoning, if such it may be termed; but both survived, and had no externally visible cataractous opacity. In all of these experiments the frogs were placed under bell glasses, tilted to insure ventilation, and were kept moist in each case by a piece of wetted sponge. In a second series of experiments, conducted in precisely a similar manner, it was found that when the frog died very early, as sometimes occurred, no cataract became visible. When they survived rather longer, the cataract was a more frequent incident; but in a few cases no such formation took place, in despite of frequent doses of sugar to a very large amount.

It now became clear to me that I had discovered a method of producing in frogs an opacity of the crystalline lens, which might be of some value as illustrating the pathology of a subject which has always been one of extreme difficulty. So far as I am aware, no one has ever succeeded in causing cataract in the eyes of dead animals without wounding the organ, and all hope of being able to govern its synthesis in

living animals has long since been given up. Many of the frogs upon whom I operated survived the constitutional effects, and remained more or less active with highly cataractous lenses. The change produced was not, therefore, of necessity associated with mortal symptoms, nor could it be regarded as a mere *post-mortem* phenomenon, since, even in the animals which did not finally survive, the lens became opaque some time before death.

With the view of ascertaining the cause of the opacity of the lens produced by the sugar poisoning, certain experiments were directed towards the determination of the effect of altering the external conditions while the frog was still suffering from the sugar. The first experiment was as follows:—

Experiment.—A large frog received under his skin about two drachms of syrup. Two drachms were also forced into the stomach through a tube, and the same amount was given in a similar manner at the close of an hour. As soon as the frog became sluggish he was placed in water and left there. He soon began to recover, and the water about him being changed thrice in the ensuing eight hours, he recovered perfectly. The dose of sugar would certainly have sufficed to destroy life had the supply of water been limited. A repetition of the last experiment satisfied me that, even with a very large dose of sugar, the animal was safe if allowed to remain in water kept fresh by frequent changes. Thus far everything pointed to osmotic changes as the probable agents in the production of the curious variety of cataract under consideration. The result of the next experiment, which in the sequence of thought naturally suggested itself as a test of this hypothesis, was such as to strengthen it considerably.

Experiment.—About two drachms of syrup were injected under the skin of a large frog. In twenty-four hours the lens was opaque, and, as the animal appeared lively, it was placed in water in order to test the permanence of the opacity. Ten hours in the water sufficed to remove most of the opacity from the lens, which began to clear in the centre first. Twenty-four hours after the frog had been placed in water the eyes were perfectly transparent, and the animal itself entirely well.

Experiment.—A distinct case of double cataract was produced in a large frog by the usual means. When the cataract first began to be visible it was placed in water. During five hours the opacity increased. In the ensuing

eight hours it diminished perceptibly, but, although the water was changed twice a day, some traces of the cataract were visible during several days. The frog recovered entirely from all the effects produced by the sugar.

Experiment.—A large frog was seated in syrup. In a few hours he was nearly dead. The mucous membrane of the mouth and tongue was intensely congested, and the parts under the eye particularly so. On placing the animal in water he slowly recovered. The eyes remained clear throughout, and were not visibly affected. The congestion above referred to is a constant accompaniment of the death by sugar, but varies in degree to a remarkable extent, and does not seem to be in any way connected with the alteration of the lens.

It was found in the course of the several experiments related, when syrup was thrown into the subcuticular dorsal sac of a frog, it at first acquired increased bulk, owing to the rapid osmosis of their fluids from the frog's tissues. During this period no change occurred in the lens. As the saccharine solution became more and more diluted the current of interchange developed, and the sugar gradually soaked into the tissues of the frog, so as to be found in most of the subcuticular sacs as well as in the peritoneal cavity. As it was still possible that the original loss of water by the tissues during the first stage of sugar poisoning, might be the cause of the cataract which afterwards formed, and, as in this case, the effects produced would be in some respects similar to rapid desiccation, the following simple test was employed:—

Experiment.—Two frogs were placed in open jars and allowed to remain without water, the temperature being from 75° to 88° F. During the experiment one frog died on the fifth day, the other on the sixth day. In neither of them was there any cataract. Both frogs were much shrunken from the loss of fluid. Mere desiccation was, therefore, insufficient to cause the opacity.

From time to time, during the conduct of these experiments, the lenses of the poisoned frogs were carefully examined by Dr. Hewson, Dr. Hunt, and myself. Dr. Hunt very kindly furnished me with notes of his observations, and, as they accord perfectly with my own results, I shall content myself with quoting his description of the general appearances presented by the cataractous lenses: "The capsule of the lens is clear, and the cells upon its lenticular surface are unaltered. The opacity begins upon the poste-

rior face of the lens directly in the axis of vision. It is next seen on the anterior surface around a clear central spot, which corresponds to the line of cleavage between the different systems of lens fibres or tubes, the centre of the star of the lens. The opacity gradually extends all around the lens, but as yet I have never met with a case where it involved the central portions; which, on the contrary, always remain clear notwithstanding this limitation. The outside color of the lens is often of a pearly whiteness, and the simulation of a true cataract is absolutely perfect."

When such a lens is viewed under a low power, in place of the faint indication of the track of the lens fibres which is usually seen, the line of cleavage is unduly distinct, and the fibres setting out from it are edged with dark, irregular lines, marking the interlocking with the neighboring fibres. A good deal of granular matter is also dispersed through the preparations. In more advanced cases the fibres or tubes are enlarged irregularly, and, their interior contents escaping, are seen abundantly in the form of yellowish pellucid globules about the tubes and throughout the field of view. My friend, Dr. Hunt, and I have also observed that the same changes may be produced by soaking the eyes of frogs in syrup. By properly regulating the strength of the syrup, cataract may be thus induced without any rupture of the eyeball. I have made no experiments with larger eyes, but it is probable that, in these also, cataract could be thus induced, and the eyes then made use of to teach the operative manual. Some such resource has long been considered desirable by teachers of ophthalmic surgery.

It may be further remarked that opacity by sugar may be produced by simply soaking the exposed lens in sugar and water. However caused, the cataractous whiteness disappears when the lenses are placed in water, but they do not become entirely transparent where the opacity has existed for some time, or where it is very highly marked. This may be owing to the fact that in extreme cases the lens tubes are not merely altered in form, and in their relations to one another, but are also ruptured and partially emptied of their softer albuminous contents; lesions which no restoration of their aqueous supply could entirely relieve.

It appears, from the various experiments here related, that mere abstraction of water from the lens is insufficient to cause opacity; a conclusion which is strengthened by the knowledge that the exposed lens, when dried, does not be-

come opaque. As it is found that the formation of the cataract attends the second stage of sugar poisoning, or that in which the sugar soaks into the tissues, it is probable that the direct contact of sugar with the lens is essential to the production of the phenomenon in question. That the changes which then result are osmotic seems sufficiently clear; but whether due chiefly to absorption of sugar in solution by the crystalline humour, or to exosmosis of the thinner portions of the lens fluids to the sugar, we have no means of determining. We may conclude, however: *First.* That sugar in large amounts destroys the life of the frog when given internally, injected under the skin, or thrown into the stomach. *Second.* That an abundant supply of water frequently enables the frog to eliminate the sugar and escape death. *Third.* That the formation of a peculiar variety of cataract is one of the most curious and striking symptoms attendant upon the sugar poisoning. *Fourth.* That the cataract is due to mechanical disturbances of the form and relative position and contents of the component tubes of the lens.

It is, perhaps, unnecessary to remark here that we have no knowledge of any such form of cataract in man. Notwithstanding this, it would be improper to omit to state that cataract has occasionally been found to co-exist with advanced diabetes mellitus. Very recently, indeed, Mr. France* has reported five cases of double cataract occurring in diabetic cases. In all of these, the cataract, which was always soft, formed with great rapidity when the constitutional malady was far advanced; and in all of them the lens increased in size antero-posteriorly, and the opacity attacked portions of several strata of the crystalline humour at once, leaving clear and transparent interspaces. Now that the diabetes has any other causative relation to the cataracts in question than through the general impairment of the nutritive functions common in this disease, I do not pretend to say; but as it is possible that the long-continued presence of even a small amount of sugar in the blood may cause in the crystalline lens osmotic changes productive of opacity, I have felt it proper to call attention anew to the relation between the two maladies in question.

*American Journal of the Medical Sciences, July, 1859, p. 266; from Ophthalmological Hospital Reports, January, 1859.

Maisonneuve's Operation for the Removal of Naso-pharyngeal Fibrous Polyps. (Gazette Hebdom., Nos. 39, 40, pp. 609 and 625, September and October, 1859.)

The French medical world has lately been occupied in discussing an operation, proposed by M. Maisonneuve, for the extirpation of fibrous polyps involving the posterior nares and pharynx. The difficulties with which the surgeon has to contend, in reaching and completely removing the pedicle of these tumors, are well known to all operators; and with a view to their obviation, the author advises the division of the soft palate in the median line, leaving intact its free border. Through this opening, which he denominates the *palatine button-hole*, he brings the tumor, and then, placing as far back on its pedicle as possible a loop of wire, he removes it by *cerasement*, afterwards closing the opening by points of suture or leaving it patent for further operations, if deemed necessary.

The principle on which this operation is founded is not a new one. In 1717, Manne, of Avignon, advocated the removal of fibrous tumors of the pharynx by dividing the soft palate in the median line, but he also included its free border in the incision. Nelaton also divided the soft palate, and with it a portion of the hard palate. Richard confined the incision to the hard palate, while Botrel proposed a modification of Nelaton's procedure by not including the free border of the soft palate. Dieffenbach seems to have been the first to propose leaving the free border intact; but he doubted its success, and reports only one favorable issue from this operation.

M. Maisonneuve has, therefore, merely revived an old operation, which had fallen into disuse, but which may prove of signal service, since the difficulty in this class of cases is not only in reaching the tumor, but in preventing its return, which may be effected by the judicious use of caustic applications. We thus infer that if the procedure be practiced, the wound should not be closed immediately, but that surgical interference be maintained until we are certain that the pedicle of the tumor be destroyed, a result absolutely necessary to a radical cure. In case of hemorrhage, the incision may be performed on one day and the tumor be removed the next; and it is stated that such wounds unite very readily.

Comparative Researches on Oleum Morrhuæ, Rajæ, and Squali.—By M. DELATTRE.

In order to test the statement of M. Homolle, that the oils of the codfish, ray, and shark are of nearly the same composition, M. Delattre has subjected these oils to a careful examination. He prepared them from the fresh livers of these fishes, excluding atmospheric air as completely as possible during the process, and used for this purpose an apparatus of his own invention, consisting of a very large sand bath, in which large balloons of glass are buried to their middle. The livers, cleaned from all impurities, are put into these balloons, and the latter are brought in connection with a reservoir, out of which a stream of carbonic acid is generated, which expels the atmospheric air. This being done, the sand bath is heated to 50° or 60° , the oleum virgineum being gained at 50° , the amber-colored oil at 60° . Especial care is taken to prevent the formation of oleic, sulphuric, or phosphoric acid during the process. The author obtained the following average for the composition of cod-liver oil, (I,) the oil of the ray, (II,) and the oil of the shark, (III):—

	I.	II.	III.
Oleine	988.70	986.94	987.17
Margarine . . .	8.06	11.01	10.12
Chlorine . . .	1.12	1.12	1.01
Iodine . . .	0.32	0.18	0.34
Bromine . . .	0.04	0.03	0.03
Sulphur . . .	0.20	0.16	0.16
Phosphorous . .	0.20	0.28	0.20
Loss	1.34	0.24	0.94

During his investigations, M. Delattre observed the following important facts: 1. While cod-liver oil contains at common temperature 180 grmm. of margarine in 1000 grmm. of oil, it loses at zero nearly all its margarine, so that it contains not more than 4 grmm. in 1000 grmm.; along with the margarine a corresponding quantity of anorganic substances is separated. 2. Iodine, bromine, chlorine, phosphorus and sulphur do not exist in the oils of these fishes, combined with potassium or sodium, as is generally believed, but in the free state. The three oils, as obtained by M. Delattre, do not, in fact, contain any alkalies at all. 3. During spring the cod-liver oil does not contain any iodine. Further investigations might, therefore, prove the necessity of keeping the oil obtained at that season out of trade.

From experiments made on the sick, M. Delattre arrived at the following conclusions in regard to the therapeutical action of the three oils: 1. The physiological action of all of them is the same; they may, therefore, be used as substitutes for each other. 2. There exists, however, the following difference in regard to their therapeutical applicability: *a.* The cod-liver oil is more efficacious in phthisical patients than the oil of the shark and of the ray. *b.* The oil of the ray is employed with greater advantage in the diarrhœa attending dentition, and in swellings of the mesenteric glands, also in chronic diseases of the skin, and in rheumatism. 3. The oil of the shark is most useful in affections of the bones.

Devergie, who compared cod-liver oil and the oil of the shark with each other, found the latter not only more pleasant, but also quite as efficacious as the former. It is thus an important circumstance, as the supply of sharks (particularly of *Squalus catulus*) is never deficient, while *Gadus Morrhue* can often not be obtained, and as the shark possesses much less value than the codfish.—(*Bulletin de l'Academie*, xxiv. p. 820, 1859.)

On different Species of Helleborus. By PROF. SCHROFF.

After treating in a very thorough manner of the phyto-graphy of the different species of helleborus which he has investigated, (*Helleborus niger*, *viridis*, *orientalis* Lam., and *fœtidus*.) the author proceeds to the second part of his treatise, in which he communicates the results of his experiments with different preparations of these plants. The following is a summary of the most important facts observed by him:—

I. *Results of the experiments made with helleborus niger on rabbits, and on man in health and disease.*—1. The root of *helleborus niger*, which is inodorous and nearly tasteless. does not possess any volatile active principle, as the fresh root in its totality is just as inefficient as a corresponding quantity of the dried and pulverized root. From one to four and a half drachms of the fresh root acted upon rabbits just as little as one or two drachms of the dried root. 2. The root of *helleborus niger* possesses but little efficacy; its aqueous and ethereal extracts do not produce any perceptible, or, at the most, but a transient effect. Only the alcoholic extract of the root, obtained in May, is somewhat more active; its administration had a fatal result in two animals, and in a third one it produced very serious symptoms. At all other stages of its development, the root yielded an

alcoholic extract which was almost inert. Also the leaves of the plant possess but little activity. 3. The root obtained in May is more active than that gathered at any other period; next to it in efficacy is that obtained in June. 4. Two of the experiments instituted on animals, but particularly the observations made in sick men, prove, in a striking manner, the *cumulative* action of the root of helleborus. Given to rabbits in gradually increased doses, it produced in a few days considerable emaciation, in spite of the existing desire for food, and finally death. In patients to whom the extracts were administered in gradually augmented doses for several days, the first few doses did not seem to have any effect; but, after several doses had been taken, the action of the medicine became perceptible, and increased with each subsequent dose to such a degree of intensity that the medicine had to be discontinued; large quantities were, however, necessary to obtain such a result. Helleborus is thus a medicine to which the organism does not accustom itself, but which, like digitalis, colchicum, aconite, strychnia, and veratria, adds to the action of each subsequent dose that of all the former doses. 5. As in aconite, digitalis, and pulsatilla, the active principles in helleborus are a narcotic and an acrid one. The presence of the narcotic principle is testified by the following symptoms: Heaviness, dullness, stupefaction of the head, vertigo, tinnitus aurium, dilatation of the pupil, sopor, or a restless sleep, interrupted by dreams, reduction of the frequency of the pulse, unusual lassitude, ill humor, anxiety, and apprehension. The presence of the acrid principle, and particularly its action on the digestive apparatus, is proved by the increased secretion of saliva occasionally observed, the vomiting, the pain in the stomach and intestines, the diarrhœa which occurs in exceptional cases, and the increase of the urinary secretion noticed in some instances. Applied to the skin, neither the fresh root of helleborus niger, nor the powder of helleborus orientalis and viridis, made into a poultice with water, produce any irritation, inflammation, or vesication, as is commonly assumed. 6. The immediate cause of death is paralysis of the heart, which is probably owing to the action exerted by the blood upon the ganglionic nervous system. It is remarkable that the irritability of the stomach, small intestines, and heart disappears in an unusually short time, (a few minutes after the last respiration.) 7. The drastic properties ascribed to helleborus have not been confirmed, and the gastro-enteritis, said to follow the

exhibition of large doses, has neither been found in acute nor in chronic cases of poisoning. 8. The aqueous extract is inferior in efficacy to the alcoholic extract; the former contains chiefly the narcotic principle, while in the latter also the acrid principle is found.

II. *Experiments with helleborus viridis on rabbits and men.*—

1. The root of *helleborus viridis*, like that of *helleborus niger*, does not contain any volatile principle. 2. The root as well as the herb possess, compared with that of *helleborus niger*, a high degree of efficacy. Two drachms of the fresh, or one drachm of the dried and pulverized root, produced death in seven and seven and a half hours, while four and a half drachms of the fresh root, and one to two drachms of the dried root of *helleborus niger* gave rise to no perceptible symptoms in animals. Doses of fifteen grains of the pulverized root make a decided impression, but do not produce death of the animal. One drachm of a stronger alcoholic extract killed the animal in one hour; the same dose of a weaker extract in three hours. Ten grains of the alcoholic, ethereal, and aqueous extract caused death always in from four to twelve hours, while one or two drachms of the aqueous and ethereal extract of *helleborus niger* produced but little effect. The extracts of the leaves acted in a corresponding manner. 3. Also *helleborus viridis* contains a narcotic and an acrid principle, but in much larger quantity than *helleborus niger*. The symptoms are the same as produced by *helleborus niger*, but are much more intense; the irritation of the intestinal canal especially is much more violent, and attended with fluid discharges, (even after a dose of two to four grains;) the diuresis is much increased. 4. *Helleborus viridis*, like *helleborus niger*, produces death in consequence of the paralysis of the heart. The depression which induces the paralysis is, however, often preceded by a stage of exaltation, during which the action of the heart and the lungs becomes more rapid and tumultuous, and congestion of the blood takes place to the brain and its membranes, and to the spinal marrow, which may give rise to hemorrhages. 5. Also from the use of *helleborus viridis* a distinct gastro-enteritis has never been observed. 6. The aqueous extract is not inferior in efficacy to the alcoholic extract; the alcoholic extract of the leaves is at least quite as active as the alcoholic extract of the root.

III. *Experiments with helleborus orientalis.*—(The roots with which the experiments were made were obtained from M.

Landerer, of Athens.) 1. The root of *helleborus orientalis* considerably surpasses the root of *helleborus niger*, and even that of *helleborus viridis*, in efficacy; it is the true representative of the action of *helebori*. One drachm of the pulverized root was fatal in four hours; one drachm of the alcoholic extract in twenty-five minutes; one drachm of the aqueous extract in two hours. Five grains of the alcoholic extract produced in rabbits chronic poisoning, which led gradually to a high degree of emaciation, and to peculiar rigid contractions of the posterior extremities. 2. *Helleborus orientalis* contains an acrid and a narcotic principle, but in greater quantity than *helleborus viridis*. 3. Like *helleborus niger* and *viridis*, *helleborus orientalis* causes death by paralysis of the heart; the preceding stage of excitement is still greater than that observed after the use of *helleborus viridis*. 4. Gastro-enteritis could not be discovered. 5. The alcoholic extract proved to be more active than the aqueous. One drachm of the former produced death in twenty-five minutes; one drachm of the latter in two hours; ten grains of the alcoholic extract were fatal in less than two hours; the same quantity of the aqueous extract in seven hours. The ethereal extract, which seems to contain particularly the acrid principle, is still to be examined.

Experiments with helleborus foetidus in animals.—As the author could not obtain the fresh plant for his experiments, he does not consider them completed; he is, however, able to state the following facts: 1. *Helleborus foetidus* surpasses the *helleborus niger* in the poisonous properties of its root and leaves, but is, however, inferior to *helleborus orientalis*, and even to *helleborus viridis*. One drachm of the alcoholic extract of the leaves of *helleborus foetidus* caused death in two hours; one drachm of the alcoholic extract of the fibres of the root in half an hour; one drachm of the whole root in one hour; one drachm of the aqueous extract in six hours; while equal doses of the corresponding extracts of *helleborus niger* did not produce any, or but a slight effect. 2. The experiments with *helleborus foetidus* also prove the presence of a narcotic and of an acrid principle. In what proportion they are present, and whether a third principle is united with them, as the peculiar odor of the plant seems to indicate, are questions to be decided by further investigations. The acrid principle seems to be most readily extracted by ether, and should, therefore, preponderate in the ethereal extract; but the symptoms during life seem to

indicate that the narcotic principle predominates; the animals suffered of prostration, of diminished frequency of the pulse, and of respiration, of spasms in various parts of the body, and died either after an attack of convulsions, or gradually under the symptoms of paralysis. 3. Death is caused likewise by paralysis of the heart. 4. The plant and the extracts gradually lose their efficacy even with the most cautious preservation.—*Prager, Vierteljahrsschrift*, xvi. 2, 1859; and *Schmidt's Jahrbucher*, 1859, No. 10.)

On Glycerin, and its Application in Surgery and Medicine. By M. DEMARQUAY. (Pamphlet, octavo, 42 pp. Labe: Paris, 1859.)

It is about five years since attention was directed to the advantages which the employment of glycerin presented, especially in surgery. M. Demarquay was one of the first to make use of this substance, and it is the result of a long experience which he makes known in his recent treatise.

The first part of it is devoted to the history and pharmacology of this liquid; it is produced, as is well known, in the fabrication of soaps and candles, but often remains impure, and does not present the necessary qualities; it is then more injurious than useful. We must therefore assure ourselves at first of the purity of the liquid which we are going to employ; the best glycerin is known at present by the name of *English glycerin*; it must not form a precipitate with the salts of baryta, sulphuric acid, hydrosulphuret of ammonia, and oxalate of ammonia; the adulteration with glucose is recognized by boiling the liquid with a small piece of caustic potassa, when the adulterated product assumes a dark color. Pure glycerin is neutral, as is proved by litmus-paper.

After having pointed out the conservative properties of glycerin, in regard to organic, and particularly animal substances, M. Demarquay speaks of its application in the dressing of wounds in general; the dressing is much more simple and more proper than that with cerate; the deposit of crusts around the wound is avoided; but particularly in cases of wounds of bad nature the use of glycerin is indicated; this liquid prevents the development of hospital gangrene, and causes the disappearance of this complication when it is developed, on the use of ordinary dressings. It is used with advantage in the dressing of gangrenous wounds, and particularly of those which succeed the incision made in anthrax. In military surgery it is particularly useful, in cases of contused wounds abundantly

suppurating, when the dressing cannot be renewed often enough, and when the wounds, in consequence of the accumulation of the wounded, and from bad hygienic conditions, have a tendency to assume an unfavorable character.

In cases of deep abscesses, with burrowing of matter and fistulous passages, glycerin is advantageously employed, in order to check the abundance of suppuration, to clean the secreting surfaces, and to modify the bad quality of the pus; the liquid can be injected into these anfractuous sores; in the same way it may be used in the sinuous passages which are so often formed in stumps after amputation.

M. Demarquay then points out the utility of glycerin in dressing burns, all kinds of ulcers, chancres, chaps, and chilblains. In diseases of the external ear and affections of the eyes glycerin is equally serviceable.

We have not yet finished with the applications which can be made of this substance; it may perhaps be believed that the properties of so inert a liquid as glycerin are exaggerated; M. Demarquay protests against the prejudice which considers all those substances inert and without real action which are inoffensive and require no great precaution or prudence in their management; yet glycerin, already very useful in itself, can be rendered still more active by the addition of some other medicines, such as laudanum, tannin, iodine, aloes, etc.

A combination of glycerin with tannic acid, (*glycerole de tannin*,) for instance, is used with advantage in the treatment of vaginitis; the preparation is composed as follows:—

Glycerin	100 parts
Tanic acid	10 to 20 “

“The speculum having been introduced, an injection of water is applied, in order to remove all the purulent mucus adhering to the walls of the vagina; these, afterwards, are wiped with a dossil of dry charpie placed at the end of a long forceps. I introduce then one or more tampons of cotton, soaked in the tannic glycerin; and, in addition to it, a dry tampon, destined to retain the drops which tend to escape.”

It may be useful to add a little tannin to the glycerin employed for dressing wounds. The reporter of the *Journal du Progres*, who has treated some cases with this application, states that it seems to accelerate cicatrization.

Finally, M. Demarquay terminates his interesting memoir with the use made of glycerin in the treatment of diseases of the skin, and reports some experiments which he has made with glycerin taken internally.—*Journal du Progres*.

EDITORIAL AND MISCELLANEOUS.

The Sixteenth Volume of the New Series of the Southern Medical and Surgical Journal.

The opening of a new volume brings forcibly to our minds the importance of the work in which we are again about to engage. Though the science of medicine is confessedly imperfect, Medical Literature, it might be suspected, has reached its culminating point. Books, pamphlets and periodicals crowd upon us in such profusion, that even the most indefatigable reader is overwhelmed, and abandons the laudable determination with which he set out, of "keeping up with the Profession." The day of book-reading, for men actively engaged in the practice of medicine, is rapidly passing away, and it will soon be superseded by the more useful, practical and practicable reading to be found in journals. The student, the teacher, the reviewer, the book-maker, may still find time to delve in heavy volumes, bringing forth the few grains of gold to be found in the mass of worthless ore; but the practitioner of medicine, the man who needs precepts, the dealer in facts, and the applier of principles, cannot read books. He is the man for whose use all facts, all principles, indeed, all medical knowledge is cultivated. He it is that converts them to the good of man, and his hand is the dispenser of all the blessings they can be made to yield. He has but little time to devote to extended treatises, to winnow out the wheat from the chaff. The brief and the practical are alone open to him. He *cannot* be the reader of books, his daily necessities *compel* him to be the reader of *journals*. There he finds, in compendious but comprehensive form, the whole embodiment of his science—principles which he sees every day illustrated in his own practice, precepts to guide him through the most embarrassing difficulties, and a *filum labarynthi* leading him through the mazes of the most obscure and even unexplored regions of his science.

The man who attempts to inform himself entirely from books, ever finds his knowledge more or less defective—it is nearly always second-handed, for in the journals, every fact and principle of value makes its *first* appearance. Buy books, we would urge, for reference; they generally contain, in a well arranged and organized form, the science of the subject on which they treat; but for daily reading, for real advancement in

science, and in order to keep pace with the Profession, subscribe to *journals*. Reading them imposes no labor, and the variety of their contents beguiles us through their pages, while we gain instruction almost unawares.

Through the liberality of our publisher, Dr. WILLIAM S. JONES, the *Southern Medical and Surgical Journal* has been enlarged by the important addition of eight pages to each number, presenting in this and our succeeding issues for the coming year, a capacious monthly periodical of EIGHTY PAGES. In justice to the publisher, we must state that, considering the quality of the paper, and the solid, well executed typography, few monthly periodicals, North or South, present a larger amount of reading matter than the one over which it is our good fortune to preside as Editors. On our own part, we promise to do all in our power, during the coming year, to fill well this ample space, and to secure to our readers as much valuable information and scientific recreation as can be compressed, during one year, into nine hundred and sixty octavo pages. To this end, we earnestly call upon contributors, readers and subscribers in their several or combined relations, to second our labors and to hold up our hands.

TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION, VOL. XII.—We received the above valuable work just as our editorial matter is going to press—too late for any extended notice at present. On looking over its table of contents we find, besides the minutes of last meeting, Business Reports, and the President's excellent address, 1st. Report of the Special Committee on Government Meteorological Reports, by Richard H. Coolidge, M. D. 2nd. Report of the Committee on Criminal Abortion. 3rd. Report on the Medical Topography and Epidemics of California, by Thomas M. Logan, M. D., of Sacramento. 4th. Reports on a Uniform Plan of Registration of Births, Marriages and Deaths, by W. L. Sutton, M. D., of Kentucky. 5th. Report on the Topography and Epidemic Diseases of Michigan, by J. H. Beech, M. D., of Michigan: and lastly, we are gratified to find that a large portion of the volume is made up by a Report from our colleague, Professor Joseph Jones, of this city, viz: Observations on some of the Physical, Chemical, Physiological and Pathological phenomena of Malarial Fever.

In the present bare acknowledgment of the volume, we cannot do justice to any of the above papers. None can more fully appreciate the value of Professor Jones's "Observations on Malarial Fever," than the readers of the *Southern Medical and Surgical Journal*. A more extended notice may be expected in a future number.

RETURN OF SOUTHERN MEDICAL STUDENTS FROM NORTHERN COLLEGES —For the first time, to our knowledge, in the history of this country, have political acerbity and intolerance risen to such a height as to cumber the walks of science and to invade the personal comfort of those who would follow her peaceful pursuits. *Pax et Scientia* have been so long and so naturally coupled in harmonious association, that their severance will appear, to most minds, like the abstraction of the combining principle from chemistry or the cohesive force from the constitution of matter. Ever considered in the light of a universal, benevolent mission to all mankind, the votaries and practitioners of Medicine have gained access, indeed welcome, into the interior of all countries, even in times of the highest religious or political excitement—even in actual war, our Profession has been allowed to pursue its researches and to carry its ministrations wherever the interest of science, on the one hand, or the highest benevolence on the other, has demanded. The Turk, the Chinese and the Savage alike, have ever respected the divine mission of the Physician and have admitted him cordially into circles where even the devoted and self-sacrificing Christian Missionary has been excluded and whence he has sometimes been driven with scoffs and stripes. Religion indeed, has often found it her interest to combine the medical savant with the Gospel-bearing man of God.

So Catholic heretofore has been the spirit towards men of our science and so universal the good will which they have enjoyed in all communities, so little have they been made to feel the disturbing influences of the ordinary walks of life, and so uninterruptedly have they been allowed to pursue their unobtrusive and peaceful employment, that the world of science has been in truth, a world apart—a world within itself—a cosmopolitan Republic escaping and ignoring all tyranny and tumult whencesoever they may come—"A river in the ocean" flowing on, grandly, majestically but calmly, despite the surging waves which may sometimes form its stormy banks.

Such has ever been our *ideal* of the science of medicine and of its independence of all extraneous perturbations—such we would ever have it, and such, it ever and everywhere is, unless too strongly conflicting influences so far pervert the general spirit of communities as that they ignore her lofty aims and interrupt her benign labors, by violating even higher and more sacred feelings than those which wed us to our science—we mean those which wed us to our homes.

The determination of a large number (nearly three hundred) of young gentlemen, Southern students in Medical institutions at the North, to

secede from those schools and their arrival at the South seeking admission into Southern Colleges to complete their studies, will naturally give rise to much inquiry among the Profession. As the proceedings of the several Students Meetings already published present a very full account of the character and causes of the dissatisfaction, we forbear at present to make any remark on the subject.

The following preamble and resolutions adopted at a meeting held at the Assembly Buildings in Philadelphia we find in the *N. A. Medico-Chirurgical Review* :

Whereas, We have left our homes and congregated in this city, with a view to prosecute our medical studies ; and having become fully convinced that we have erred in taking this step ; that our means should have been expended, and our protection afforded to the maintenance and advancement of institutions existing in our own sections, and fostered by our own people :—

Resolved, That in a body, or as many as approve of the act, we secede from the institutions in which we have severally matriculated, return to the South, and herein pledge ourselves to devote our future lives and best efforts to the protection of our common rights and the promotion of our common interests.

Resolved, That in taking this step, we disclaim any personal animosities, and deprecate any political agitation.

Resolved, That we tender our grateful acknowledgments and heartfelt thanks to the Hon. Henry A. Wise, Governor of Virginia ; Dr. L. S. Joyes, Dean of the Virginia Medical College, at Richmond ; Henry R. Frost, Dean of the Medical Department of the University of South Carolina ; to President Robinson, of the Philadelphia, Wilmington, and Baltimore Railroad, and all others who have extended to us the substantial encouragement and aid so essential to the furtherance and successful accomplishment of our enterprise.

Resolved, That we extend a cordial invitation, and will cheerfully welcome in the South, any Northern student who will subscribe to the previous resolutions.

Resolved, That a copy of these proceedings be sent to all Northern Medical Colleges, for the benefit of Southern students who may have matriculated in them.

Resolved, That the Southern papers generally, be requested to publish the proceedings of this convention.

On the 20th of December a telegraphic despatch was received at this place from Southern students in Philadelphia, reporting their determination to return to the South and making inquiry if they would be received at the Medical College of Georgia for the remainder of the term ? The answer returned was in the affirmative and the terms stated on which they would be received, viz., that those who felt it their duty leave should be received on equal terms with the regular matriculants of the Medical College of Georgia—the candidates for graduation paying the diploma

fee. On the arrival of a large number of these gentlemen a few days afterwards, they were cordially welcomed by both the Faculty and the Class.

In the full exposition of the causes of dissatisfaction presented by these gentlemen will be found ample reason to exonerate them from all rashness or impropriety—indeed as set forth in their presentation by Dr. Matthews we are obliged to yield them our unreserved commendation for their calm determination under trying circumstances, their moderation and their gentlemanly propriety.

If the illy concealed prejudice of Northern communities against their brethren in distant parts of our common country has degenerated into actual hostility, and if their fanatical misconception of a perfectly humane and benevolent institution, has caused them so far to forget the laws of self-interest and even the higher laws of hospitality so as no longer to tolerate even a temporary sojourn of these brethren among them, these communities have now received a lesson at the hands of the Medical Profession which they surely cannot soon forget—and they have done their commerce and their institutions of learning, innocent as the latter certainly are, an injury which years of conservatism and most strenuous effort only can repair. Southern patronage has been their chief, their most reliable support and yet these very patrons, it appears, have found the brief period of their sojourn among them, no longer bearable. In the present state of political feeling in Northern cities, it became impossible to continue the pursuit of studies requiring the entire occupation of the mind. Their attention was naturally turned to the institutions at home, which for no good reason, they had left, and they determined henceforth to advocate the attendance of Southern students in Southern Institutions.

Fully impressed with these sentiments, a decorous and orderly meeting of Southern students was held. Their grievances, their motives and their final determination were temperately set forth in a series of resolutions which, while they exhibit in sufficiently strong but moderate terms, their dissatisfaction with Northern institutions, as places of instruction for Southern students, we are gratified to say, carefully exonerate the distinguished Professors of those institutions from any possible charge as to the cause of their determination.

They have everywhere been kindly and cordially received by the Colleges throughout the South. They have been at once admitted into the several classes where they have applied, so far as we know, upon terms which are in the strictest accordance, both with professional ethics and that good fellowship which should ever characterize the dealings of

Medical Colleges, however distantly located from each other, or whatever may be the public sentiment or political state of the country.

On the arrival of a number of these gentlemen at this place, they reported that many of their friends—Southern students—yet remained in Northern cities, very unpleasantly situated; “they had determined and were anxious to return, but were prevented from doing so by a temporary want of funds.” The City Council of Augusta, in a special meeting, promptly, and with uncommon unanimity, voted the appropriation of the liberal sum of One Thousand Dollars, to be applied to the purpose of assisting those who might, in the above circumstances, desire to complete their course of study in the Medical College of Georgia.

We are unwilling to discuss any more fully, in these pages, the painful political and social causes which have given rise to these proceedings—deplorable as these causes may be, we here earnestly express the hope that, the decided measures so conscientiously and so firmly adopted, may contribute to their entire removal, and be productive of a state of good feeling throughout our great Republic, which seems now so unfortunately interrupted.

Great and permanent benefit will doubtless naturally grow out of these demonstrations, to Southern Medical Colleges, by awakening the entire South to their real merit and to the importance of fostering, in her own bosom, superior institutions of learning; but a higher benefit, a greater good, a far more widely extended blessing will be dispensed by them, in that they strikingly warn the fanatical of Northern communities that it is to their own advantage to respect the constitutional rights of others—their warm-hearted and impulsive, but honorable and independent brethren of the South. Even by *these* means, would we hope that our glorious Union may be consolidated and cemented, not only in the bonds of a common interest, but, as in times past, in the stronger and more reliable bonds of a common Love.

CATARACT IN FROGS PRODUCED BY SUGAR.—We are pleased to observe that Experimental Physiology is becoming so important a means of investigation in this country, and that it has found such an able and successful cultivation in the person of Dr. Mitchell. We have had occasion, once or twice before, to refer to his investigations with commendation. Those made by him, in connection with Dr. W. A. Hammond, on the Woorara poison, certainly throw more light upon certain parts of this obscure and difficult subject, than any researches since the early investigations of Sir Benjamin Brodie and Orfila?

We refer here again to his recent experiments with Cinchona, by inhalation, and, in the present number will be found a valuable contribution on "The Production of Cataract in Frogs by the Administration of Sugar. Anything which has even the slightest tendency to throw light on that most mysterious subject—the origin and mode of formation of Cataract—is certainly most worthy our attention, and should be followed up with zeal and industry by those capable of pursuing successfully the investigation. We know of none more capable of effecting this important contribution to Surgical Pathology than Dr S. Weir Mitchell.

HOSPITAL STATISTICS.

Guy's Hospital, founded by Thomas Guy, in 1721, for the reception of 400 patients, and recently enlarged through the aid of a large bequest from the late William Hunt, contains at the present time nearly 550 beds: and, with its extensive buildings and airing grounds, occupies an area of about seven acres. The hospital is divided into medical, surgical, clinical, ophthalmic, uterine, and venereal wards, independently of a ward, in a detached building, for lunatic patients, the vacancies in which the governors of the hospital have of late years forborne to fill up. In the year 1857, 44,281 persons were relieved by its means; 5,226 as in-patients, 9,889 as out-patients and 25,886 as casualties, besides 1,731 women who were attended in their confinements, and 1,540 who received advice from the Lying-in Charity. Four hundred patients are now received into the original building of Guy, and one hundred and fifty into the part of the new wing already completed; the latter building, when finished, will admit three hundred persons.

St. Bartholomew's Hospital contains 650 beds, of which 420 are allotted to surgical cases and diseases of the eye, and 230 to medical cases and the diseases of women. The number of patients is more than 95,000 annually; the in-patients amounting to upward of 6,000, the out-patients and casualties to more than 89,000.

The London Hospital contains 445 beds, of which 135 are allotted to medical, and 310 to surgical cases; of these 310 beds, about 190 are exclusively appropriated to cases of accident. In the year 1858, the hospital received 27,790 patients, including 3,976 in-patients and 23,814 out-patients. The accidents brought into the hospital, during 1858, were 11,529, including 2,090 in-patients and 9,439 out-patients.

The Middlesex Hospital, from recent enlargements, contains upward of 300 beds, of which 185 are for surgical, and

120 for medical cases. The cancer establishment receives 33 patients. Wards are specially appropriated to cases of uterine disease and of syphilis; 2,109 in-patients were admitted during the past year. The number of out-patients during the same period amounted to 16,469.

Royal Westminster Ophthalmic Hospital.—This hospital set the example in London, in 1816, of receiving the poor on their own application, without letters of recommendation. During 1857, 6,315 persons were treated, of whom 160 were admitted into the hospital, and 6,155 were treated as out-patients; of these, nearly 2,000 were children of tender age. The principal operations were—57 for hard cataract; 40 for soft cataract; 14 for the formation of artificial pupil; 220 for strabismus; 227 for the removal of tarsal tumors; 5 for the removal of deformity of staphyloma; 3 for the removal of tumor in the orbit; 2 for osteal abscess; 1 for extirpation of the eyeball, on account of malignant disease. In addition, several hundred minor operations were performed.

Royal Orthopædic Hospital.—The daily attendance of out-patients exceeds 100, the average number annually being 1,600; and the number admitted from the commencement exceeds 21,000. Out of this large number, it is stated, not one death has occurred under treatment, neither has there been any instance of permanent suffering or injury.

Lock Hospital, London.—Patients treated, from January, 1747, to 31st December, 1857, 74,389. In-patients cured from 31st December, 1857, to 31st December, 1858, 333; out-patients ditto, 2,187; in-patients, 31st December, 1858, 52; out-patients ditto, 269; died, 2—2,843. Making a total of 77,232. *Asylum.*—Admitted from July, 1787, to 31st December, 1858, 1,555; restored to their friends since the opening of the institution, 309; placed in respectable service, ditto, 391; died, ditto, 22.

Glasgow Royal Infirmary.—When the buildings at present in progress are completed, the accommodation will be much increased. Number of beds, 600. During the year 1858 the number of in-patients treated was 3,500. Out-patients, 10,422 were treated at the dispensary. Operations during the year, 185; amputations, 60; excision of tumors, 32; excision of bones and joints, 8; reduction of dislocations, 23; lithotomy, 13; various, 49.

The Lying-in Hospital, Rutland Square, Dublin.—This Hospital, established in 1745, and chartered by George II., in 1756, is the largest establishment of the kind in the British

dominions, and contains 130 beds, 15 of which are appropriated to the diseases of females. About 2,000 women are annually received into the institution.—*London Lancet*.

The General Council of Medical Education and Registration of Great Britain.—This body, of which Sir B. C. Brodie is President, began its second session August 3d, at the Royal College of Surgeons of England. This council, of which we have given some account, is the Medical Parliament of England; having the power not only to place the profession upon a proper basis, but to establish a uniform standard of medical education, and compel its adoption by the various universities and schools. The first session was devoted to the subject of registration; at the present session medical education is to be the principal subject for consideration. We shall look with interest for the conclusions to which this distinguished body of representatives of the medical profession arrive.

The rate of payment for attendance upon the meetings of the council, which the members have voted to themselves, is five guineas per day to each member attending; five guineas a day, coming and returning, when the member resides over 200 miles from London; travelling expenses being paid at the rate of £9 9s. for Scotland, and £8 8s. for Ireland.

Anæsthetic Effects of Bisulphide of Carbon.—"Dr. WM. H. UHLER, of the Falls of Scuykill, at a recent meeting of the Academy of Natural Sciences, mentioned that he had a short time before accidentally inhaled the vapor of the bisulphide of carbon, which had produced complete anæsthesia. He was removed from the laboratory by the workmen in a completely insensible condition. He revived in a short time suddenly and completely, and he did not subsequently experience any nausea or the least unpleasant symptoms. Whilst in a state of anæsthesia, his visions were of the most pleasant and agreeable character."—*Med. News*.

On Neuralgic Dysmenorrhæa.—By Dr. J. Y. SIMPSON.—"All pathologists admit a neuralgic division. That is, all admit that dysmenorrhæa may occur in patients who are subject to neuralgic affections, and in whom pains disappear from the other organs and parts of the body at the time of menstruation, only to become concentrated, as it were, in the region of the womb. Such patients complain habitually of aches and pains in the face, the head, the mammæ, the intercostal spaces, or elsewhere, and these pains all become

aggravated for a day or two before the appearance of the catamenia. Then acute and constant pain begins to be developed in the uterus, and as the menstrual flow sets in, the pains in other parts of the body become quite relieved. In such cases, the uterine neuralgia persists during the whole menstrual period—remitting, perhaps for a time, but never altogether intermitting.”—*Braithwaite's Retrospect*.

On the Use of Raw Meat in the Colliquative Diarrhœa of Children at the Breast.—By Dr. J. F. WEISSE, Director of the Children's Hospital at St. Petersburg. (L'Union Medicale, April 7th, 1859.)

Seventeen years have passed since Dr. Weisse drew the attention of the profession to the beneficial effects attending the use of raw meat in the treatment of the colliquative diarrhœa of children at the breast, and since that time numerous writers have confirmed the views originally advanced. Dr. Weisse now declares, after an experience of twenty years, that raw meat, reduced into a pulp by scraping, to the exclusion of all other treatment, is the true specific for this destructive form of diarrhœa. He cannot agree with the remarks of Mr. Charles Hogg, who recommends beef-tea in preference, for he finds in raw meat not only an aliment for the children, but also a remedy for the kind of diarrhœa in question; besides, he has never spoken of the juice of the meat, but has recommended the muscular substance itself, minced or scraped, so as to be swallowed and digested without difficulty. The object proposed is to introduce into the digestive tube the muscular substance of the meat, and the beef-tea has no controlling power over the diarrhœa, for by its mere fluidity it traverses too rapidly the intestinal canal. By giving the meat in a pulp, the solid parts remain longer in the intestine; they act by contact, and may, by exciting the intestinal mucous membrane, stimulate absorption; and it is probable also that this plan may contribute to neutralize the acidity of the gastric juice. The treatment of children's diarrhœa by raw meat has become general at St. Petersburg, and has been adopted rather by the establishment of the good effects which have resulted from it than by the publication of special memoirs. Dr. Weisse has employed the treatment in nearly two hundred cases, and the result has been always satisfactory when the case has been taken in time. When the disease is too far advanced, and has assumed the character of gastro-malacia, a cure is seldom obtained; but even in such circumstances, it is possible to mitigate some of the symptoms felt by the patient, such as the inextinguishable thirst and the vomiting.