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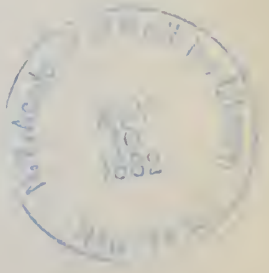


THE

New Orleans Medical & Surgical Journal

JULY, 1866.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

Art. I. INSTINCTS OF RACES:

By J. C. Nott, M. D., *Professor of Surgery, Medical College, Mobile, Ala.*

"FREE NEGROISM, or the Results of Emancipation in the North, and West India Islands, with Statistics of the Decay of Commerce—Idleness of the Negro—His return to Savagism, and the effect of Emancipation on the Farming, Mechanical and Laboring Classes." Second Edition, revised and enlarged. Van Evrie, Horton & Co., No. 162 Nassau Street, New York, 1863.

THE above is the title page of an elaborate and interesting pamphlet from which I propose to borrow largely in the conclusion of the present essay, as it well illustrates *the instinctive dislike of the negro race to agricultural labor*, the point which it is my object to elucidate. The collection of facts is ample and saves me much labor.

As this pamphlet was intended especially to illustrate a single point, I shall preface the copious extracts to be given, by some general remarks on the Civil and Physical History of Races, in order to show that the practical results of Emancipation are nothing more nor less than the fulfillment of natural laws, long since demonstrated by the science of Ethnology.

Man (*genus homo*), has, by common consent, been placed by naturalists at the head of the animal kingdom, and although he has the means of protecting himself to a great extent, by clothing, fire, and houses, from extremes of heat and cold, he cannot abstract himself wholly from those climatic influences which modify the species of other genera.

The genus *Equus* contains six species, the *Horse, Ass, Hemione, Zebra, Quagga and Onager*, all natives of the eastern continent. Each of these is generally supposed to have sprung from one original pair, and the same law of descent is applied to the *Felines*, the Canidæ and species of other genera.

The natural history of *Man* has been the great stumbling-block to zoölogists—some contending that all the Races of Men, are but *varieties* springing from one original pair (Adam and Eve); while others contend that the Races are of diverse origin, and were created, like the species of other genera, in different divisions of the earth, forming parts of separate *Zoological Provinces*.

This subject is one of great interest both to the Naturalist and Theologian, but has little practical bearing on the points here to be discussed, and will therefore be left aside.

It is curious to see the perfect parallel which the genus *Canis* (Dog) runs with that of Man. The dawn of history finds the uttermost parts of the earth covered with different races of men, and every where, these human types have been associated with one or more races of dogs equally distinct from each other.

In order that the reader may clearly understand the meaning attached to certain terms for which there will be frequent use, I will quote the following definitions from the celebrated Dr. Prichard's work on the "Physical History of Man," as he is considered a standard authority:

"The meaning attached to the term SPECIES, in natural history, is very definite and intelligible. It includes only the following conditions, viz: *separate origin and distinctness of race, evinced by a constant transmission of some characteristic peculiarity of organization.* A race of animals or of plants marked by any peculiar character which it has constantly displayed, is termed a *species;* and two races are considered specifically different, if they are distinguished from each other by some characteristic which the one cannot be supposed to have acquired, or the other to have lost, through any known

operation of physical causes; for we are hence led to conclude, that tribes thus distinguished, have not descended from the same original stock.

"Varieties, in natural history, are such diversities in individuals and their progeny as are *observed to take place* within the limits of species.

"Permanent Varieties are those, which once having taken place, continue to be propagated in the breed in perpetuity. The *fact* of their *origination must be known by observation or inference*, since, the proof of this fact being defective, it is more philosophical to consider characters which are perpetually inherited as *specific* or *original*. The term, *permanent variety*, would otherwise express the meaning which properly belongs to *species*. The properties of species are two, viz: original difference of characters, and the perpetuity of their transmission, of which the latter can only belong to permanent varieties.

"The instances are so many, in which it is doubtful whether a particular tribe is to be considered as a distinct species, or only as a variety of some other tribe, that it has been found, by naturalists, convenient to have a designation applicable to either case."

According to the above criteria, it must be conceded, that we have no means beyond *its history*, of distinguishing between a *species and permanent variety*. A reference to the chapter on Hybridity in "Types of Mankind" will show that prolificacy *inter se* is no test of common origin of two animals, and laying aside the teaching of Holy Writ, the Naturalist knows of no conclusive argument in proof of the *unity* of the human family; or of the various *canine* races, which stand on precisely the same ground zoölogically.

The wonderful discovery of Champollion, by which the hieroglyphic inscriptions on the ancient monuments of Egypt have been decyphered, has thrown an entirely new light upon the physical history of man. The absurd arguments drawn from false analogies in the animal kingdom, respecting changes of type from physical causes, and the thousand and one "well authenticated" examples of white men transformed into Hindoos, Negroes, and other races, have all passed away like the "baseless fabric of a vision" and left us to wonder that men of sense could have been so deluded.

It is now demonstrated from the monuments of Nineveh and Egypt, that the races of the genus *homo*, and those of the family of

the *Canidæ* (Dogs), were as distinct in type 3500 years ago as they now are, and that no causes in operation from that date to the present, have been able to change one form into another. On those monuments, cotemporary with Moses, and Joseph, and Abraham, are to be seen by thousands the faithful portraits of Egyptians, Berbers, Abyssinians, Nubians, Negroes, Arabs, Jews, Mongols and Assyrians, presenting the same lineaments which those races around the Mediterranean preserve to the present day. In like manner are preserved portraits of the Canines. The Mastiff is beautifully portrayed by Layard in his work on Nineveh. The Greyhound, Turnspit, Coach-dog, Hound, other varieties of domestic dog, together with the Wolf, Jackal, Hyena and Fox on the monuments of Egypt. The Bulldog is well represented in Rome, and most of the dogs now known in Europe were familiar to Greeks and Romans. When America was discovered, the Indians were found in possession of several new races of dogs. The Dingo was found in Australia, and so with all newly discovered countries.

In Europe and Asia, as well as northern Africa, which were occupied by the highest races of men, the types of men, through incessant wars, commerce and migrations have been greatly blended and confused. So with their companions, the dogs—these have been intermixed, until no doubt many original types have been lost, and an endless variety of curs appear in their stead.

The question then, as to the existence, and *permanence* of races, types, species, or permanent varieties, call them what you please, is no longer an open one. Forms that have been permanent for several thousand years, must remain so at least during the life time of a nation. It is true, there is a school of Naturalists among whom are numbered the great names of Lamarck, Geoffroy Saint Hilaire, Darwin and others, which advocates the *development* theory, and contend not only that one type may be transformed into another, but that man himself is nothing more than a developed worm ; but this school requires *millions of years* to carry out the changes by infinitismal steps of progression. With such theories, or refinements of science, our present investigation has no connection, as the Freedmen's Bureau will not have vitality enough to see the negro experiment through many hundred generations, and to direct the imperfect plans of Providence.

It being conceded then that the Races of Men, and of Canines, if not distinct species, are at least *permanent varieties*, we propose next to inquire whether the *phisique* of each race has not a kindred *moral* inseparable from it; and whether the organic structure can be changed without altering its functions?*

Is it not a law of nature, that every *permanent* animal form, call it by what name you like, carries with its physical type a *moral* of its own, which cannot be obliterated, changed, or transferred to another, so long as the *physique* stands? Can any reflecting man doubt that the instinets of the Bulldog, Greyhound, Pointer, or Hound, are inseparable from his anatomical structure; or believe that one can be edueated to perform the duties of another? These races of dogs, all over the globe, where the climate permits them to live and prosper, so long as the *blood is kept pure*, remain substantially the same in *moral* and *physique*. A Bulldog is a Bulldog, a Greyhound a Greyhound, from generation to generation, and from the St. Lawrence to Cape Horn.

Why is it that dog-fanciers lay so much stress on *pure blood?* Does not an impure cross destroy the value of a stock, and its reliability for breeding purposes? An English breeder will not touch a horse or dog that has a drop of impure blood; because he knows that the stain cannot be washed out in many generations—the impure cross will crop out eight or ten generations after, or later, as many examples prove. So adhesive is the stain, that a mare of Lord Derby that had a colt by a Zebra, when bred afterwards for several successive years to thorough bred horses, had every colt more or less striped like the Zebra, which had been the father of the first colt only. The Greyhound has little sense of smell and pursues his game by sight and speed. The Hound on the contrary depends on smell and endurance. The Bulldog is useless for hunting purposes. The Pointer, Terrier, Shepherd's dog, each has its peculiar instincts and uses. These qualities are retained so long as the race is kept pure, and when two are crossed, an intermediate type is produced partaking of the *physique* and *moral* of both parents.

Do not the same general laws which govern the rest of the animal kingdom apply with equal force to Man? Has not the Almighty

*The English language wants precise terms to suit my purpose. By *physique*, is meant physical or anatomical structure. By *moral* we mean all those functions of the nervous system which bring animals in relation with the external world, as *instinct*, reason and intellect

placed his stamp, intellectual and physical, upon the races of men just as strongly as he has upon the species or varieties of other genera? We have already stated, what the works of Champollion, Rosellini, Lepsius, and other hieroglyphic scholars, so fully prove, that the same races of men have been living around the Mediterranean for 3500 years. Since the literature of China and India have been laid open to us, we have the evidence that Mongol, Malay and Hindoo types are quite as old. America was found at its discovery covered with millions of red men of great antiquity. Australia and Oceanica have also their races of men and animals unlike all others. The *permanence* of these human types, I repeat, is no longer a point of dispute; so long as the physical causes which have for ages been acting on them, remain unchanged, they remain indelible.

It being conceded, then, that the *physique* of the Races of men is *permanent* through ages past and to come, the next question to be examined is the permanence of the *moral* which has accompanied each type in by-gone ages. If man is to be judged by analogies drawn from the animal kingdom, it would require little argument to settle the question in the affirmative. Every species, whether of the *Equidæ*, the *Canidæ*, the *Felines*, or other, has its own anatomical structure — its own physiological laws — its own instincts and mode of thought. The *moral* is quite as characteristic as the *physique*.

The Indo-European Races have, through wars, commerce, and migrations, been so blended, that old types have, to a great extent, been lost, and few *permanent varieties* can be identified in Europe, beyond Jews and Gipsies, and even these are far from being pure. When, however, we leave these migrating Races, the law of nature stands out in bold relief. Place beside each other an Arab, Egyptian, Anglo-Saxon, Negro, Hottentot, Mongul, Malay, Australian, and American Indian, and you have human types as old, as distinct, as permanent in *physique* and *moral*, as the canines and other species.

No one will deny that the animals nearest in the scale to man, as apes, dogs, and the elephant, are endowed with a degree of intelligence above mere instinct; nor is it less true that man to a great extent is a creature of *instinct*. If Races were guided by reason alone, each one would not possess the individuality which now characterizes it. The *instincts*, not only of Races, but of individuals, or, as a phrenologist would say, the *bumps*, drive reason aside or override it in the great majority of mankind. One man, generally, reasons

well about the conduct of another, and can give very good advice, while violating the precepts he lays down. The first law of nature is *self-preservation*, which exerts a controlling influence all through life. Within an hour after a child is born, it instinctively sucks—it soon cries to make wants known. These and other animal instincts precede the first rudiments of mind, for whose action the senses have, as yet, furnished no materials.

Self-love and *self-preservation* are the ruling instincts of every animal, and drive even the most untutored races to desire immortality; and, with the hope of attaining it, they seek to propitiate good spirits and evil spirits. It is not the love of the Lord, nor of virtue, that keeps most men in the "narrow path," but the fear of the devil and annihilation. If a little brimstone were not burnt under people's noses once a week at least, the devil would be most likely to drag the mass into the "broad road that leadeth to destruction."

The constant tendency of a child, is to self-glorification and self-aggrandizement—he is the hero of his own story, and appropriates to his own use everything he lays hands on. The organs of *self-esteem* and *acquisitiveness* are predominent and precede the moral sense. An honest, truth-telling child is rather an anomaly in nature, and a thing to be marvelled at.

Now these instincts, which have their groundwork in the law of self-preservation (like the wolf's love of mutton), exhibit themselves in the forms of ambition and dishonesty, and hold on to the great majority of mankind, in some degree or form, from the cradle to the grave. So true is this, that it has become a proverb that "an honest man is the noblest work of God." That these frailties belong to man, the Bible teaches from Genesis to Revelations. General Washington, General Lee, and Stonewall Jackson, as much as we admire and venerate them, cannot be called intellects of the very first rank. They were moral giants, and particularly defective in the organs of self-esteem and acquisitiveness. They were remarkable as *christians*, which they could not have been, had they been endowed with a silverspoon bump, like another distinguished individual. Even religion but imperfectly corrects these bad *instincts* of man, though it often corrects bad *acquired habits*, such as intemperance, swearing, the use of tobacco; but ambition, "that sin by which the angels fell," the love of money, the tricks of trade, the corruptions of politics, the animal passions, are rarely rooted out till all becomes "vanity

and vexation," as with Solomon in his old age. There are few men who would not prefer a good endorser to the fair promises of most pious neighbors.

So much for poor human nature in the abstract. Let us now look a little into the *Instincts of Races*, the point I wish particularly to illustrate.

Suppose we should place a hundred children of each race, Anglo-Saxons, Monguls, Malays and Negroes, upon separate islands, and cause them to be reared, without any instruction, by deaf-mutes, to adult age, what would be the inevitable result? Does any one doubt, that like Greyhounds, Pointers, Bulldogs and Hounds, each would follow out its natural instincts? Each race would form its language, its mode of thought, and, in time, would work out a social organization peculiar to itself. Nay, more, what has been the result in our country of educating Whites, Blacks and Indians at the same schools? Have the instincts of the Indian or Negro been changed? The full blooded Indian has invariably wandered off to the forest and resumed the habits of his race. He is essentially a wild animal by nature, untamable, unimitative, uncivilizable. The Negro, on the contrary, is imitative, social, easily domesticated, and, as long as kept in subordination to a higher race, will ape to a certain extent its manners and customs. But the Negro rises only to a certain point of imitation — his intellect permits no approach to civilization but that of imitation, and, as soon as the race is thrown back upon itself and separated from the whites, as in the West Indies, it becomes savage.

The instincts of race are strongly illustrated in the Chinese. They have had their civil wars, and so called revolutions, for thousands of years, but these all result in mere change of rulers. A revolution there is like a pebble dropped in the ocean — not a dimple is left behind. The same form of government, the same mode of thought, the same social organization, has remained stationary for ages, while Europe has been changing like a chameleon, from the mongrel character of its population and progressive spirit. The semi-civilization of China and India and the savagism of the red men of America, have remained stereotyped for ages, while the Gipsies have been pitching their tents in the four quarters of the globe, resisting all climates, and all moral influences which philanthropy could bring to bear on them. No human power can change the fiat of the Almighty. He brought the races of men and animals into existence. He gave

them moral and physical laws, and all the powers of the Freedmen's Bureau, or "gates of hell cannot prevail against them."

The Caucasian races have been the only truly progressive races of history. They have the largest heads, the highest instincts, the most comprehensive intellects have, in all ages, stood ahead of all others in civilization and have had no competitors in literature, art and science.

It would seem that "reason, the proud prerogative of man," is to a great extent subservient to the *instincts of races.* In all departments of knowledge into which *speculation* can enter, human reason runs wild. In religion, mental and moral philosophy, the science of government, law, political economy, etc., the attainment of absolute or fixed laws is hopeless. The world consequently makes comparatively little progress in morals, and vice simply changes its form. What is fashionable in one age, is not in another.

The only real progress made by mankind, is in the exact sciences, as Chemistry, Botany, Astronomy, Mathematics, Natural Philosophy, Mechanics, etc., which is almost Godlike, and in this the Negro, Indian, and other inferior races, *take no part whatever.* It is humiliating to look on the infirmities even of genius. Lord Bacon in morals was beneath contempt. Napoleon, Alexander, Cæsar, Frederick the Great, were only great highway robbers, who trampled morals, religion and everything under foot to attain their ends.

How can any thoughtful American doubt the overruling influence of *instinct* in races? Can more conclusive facts be asked, than those presented to our view every day by the Whites, Negroes and Indians in our midst?

Yesterday I clipped from a newspaper the following extract, which tells, not only the melancholy story of one tribe of the red men, but is a picture of the doom that awaits them all.

REMNANT OF AN UNFORTUNATE TRIBE.— A dispatch to the St. Louis Democrat says :

ST. JOSEPH, March 28.—A small band of Winnebago Indians have been encamped a few miles from this city during the winter, earning a living by cutting wood and hunting. Some time ago they received notice to decamp and join their red brethren in the Indian country. To day they came into the city and employed counsel to prepare a petition to the Government for the privilege of remaining here and engaging in civil pursuits. This is the last remnant of this once powerful tribe. They are broken in spirit, and say they have made

their last hunt, have finished their journey, and beg the privilege of resting here until they die. Their petition will be forwarded to Washington, strongly endorsed by our citizens.

In like manner, I have seen daily around Mobile for thirty years, the remnant of the once numerous Choctaws, living in bark tents, as degraded as wild beasts, and gradually dwindling away in spite of the best directed efforts that humanity can bring to bear on them.

To my mind, the foregoing conclusions with regard to the various instincts and intellectual characters of races are so self-evident, that I feel as if a labored argument on the subject would be an insult to the understanding of the reader. A few centuries, or even fifty years ago, before the various Freedmen's Bureaux had fairly commenced their destruction of Indians and Negroes, an array of facts and arguments might, with propriety, have been called for; but the colonial history of Spain, France and England, as well as the history of missions in Asia, Africa and Oceanica, tell the tale of Races.

The discussion, thus far, interests more particularly the naturalist and moral philosopher, but the practical end to which I have been aiming, is *the question of Negro labor at the South*, on which hangs the future prosperity of the Cotton States and the destiny of the Negro race. We see the remark quoted every day that history (of the white race) repeats itself, and there is no greater truism; but is the same law applicable to the Negro race? In my letter to General Howard, I asserted that *the Negro is, by instinct, opposed to agricultural labor, and will not till the soil for wages*, an assertion which is proven by the history of the race in and out of Africa.

The negro tribes have had undisturbed possession of the immense continent of Africa for thousands of years, except that portion north of the desert of Sahara — bordering the Nile and the Mediterranean; and yet the black population, georgraphers tell us, does not reach 100,000,000, while China and India with vastly less territory have respectively 400,000,000 and 200,000,000. Why this enormous difference? It is simply because the negro *is not* an *agricultural* race, while the Chinese and Hindoos *are* intensely agricultural. China and India are gardens from one extreme to the other, and all the food that can be made, *is* made out of the soil. There is reason to believe that those countries reached their maximum of population a thousand or two years ago, and could not increase because the soil could feed no more. In like manner, the black population of Africa

probably reached its maximum quite as far back, not because the agricultural resources of the country were exhausted, but because the people will not cultivate cereals at all, and depend on the natural products of the country, such as yams, cocoa-nuts, plantains, bananas, etc. Nature provides on that continent food enough for seventy or eighty millions, and beyond this, there can be no more population, as there is no food for more.

So too, with the American Indian — he depended upon the scanty products of the chase, to the exclusion of agriculture, and had probably reached his maximum of population at the time the continent was discovered by Columbus.

North America in a few centuries will have a population of more than 1,000,000,000, and Africa might have the same, if the negro could be driven to agricultural labor.

The same inertness which characterizes the Negro physically characterizes him intellectually. No Negro ever invented an alphabet; and from the Great Desert to the Cape of Good Hope, no ruined temple, no crumbling monument, no work of art, no relic of science, no fragment of recorded history, point to any spot in this wide expanse as the cradle or grave of civilization.

The Negro has no excuse, but *that of race*, for the want of agriculture, art and science; for he has been, from the time of Moses to the present day, in constant intercourse with Egypt, the great granary of antiquity and fountain, from which the civilization of Palestine, Assyria, and Greece flowed. So much for the history of the Negro in his native land; let us now follow him into other countries.

When the late civil war broke out in the United States, there were 4,000,000 negroes in the country, about 500,000 of whom were free. The slave portion was not only the best cared for, most comfortable, contented, and increasing laboring population in the world, but was more intelligent, more moral, more christianized, more useful in the progress of civilization than this race had ever been in its native or in foreign lands, in freedom. These facts are fully borne out by all statistics, and will not be controverted by any unprejudiced mind.

What, on the other hand, was the condition of the 500,000 of the freedmen? The professional philanthropists had done everything in their power to educate, to humanize, to stimulate them to mental

and physical activity, but all without result. No one can call the name of a full blooded negro in this country that has ever reached mediocrity in intellect — not one has made a discovery in science, an invention in the mechanic arts, written or spoken a line that has been preserved in print. Worse than all this, they have utterly abandoned all agricultural labor, for which they are well suited, and are either dying from the effects of indolence or occupied about towns as boot blacks, scavengers, waiters in hotels and steamboats, and other positions subordinate to the whites. I have never known a free negro family in the United States to settle on a farm and till the soil successfully from year to year. He will sometimes, driven by dire necessity, cultivate a little garden spot to avoid starvation, but his immediate wants are poorly supplied, and he never accumulates property by agriculture.

What has been the history of the colony of Liberia, on which so much sentiment, so much thought, so much energy, and so much money have been spent? Missionaries and school-masters have done their best; and at the end of half a century, the experiment has proved such a dead failure, that it is now talked of as a dream of misdirected philanthrophy.

Knowing that authentic portraits of races, addressed to the sense of sight would be much more satisfactory to the reader than any written description, a short time since, I wrote to Messrs. J. B. Lippincott & Co., Philadelphia, publishers of Nott and Gliddon's "*Types of Mankind*," requesting them to send me copies of several plates used in that work. They very obligingly sent the four which will be found below, and which came to hand since the foregoing part of this essay was written. Instead of giving them somewhat as a *postscript*, I might have worked them into the text to greater advantage, but I am writing against time to oblige the Editors who are now waiting for my copy.

These drawings, which all date back to about the same epoch, viz: 1500 years before Christ, are taken from the great works of Champollion, Rosellini, Lepsius, and Belzoni, and are perfectly authenticated portraits of races of men at that date. It is equally certain that these and all the other races that lived around the Mediterranean, live there still, and have preserved their types without change for 3300 years. Nor is it less certain that these various races, Egyptians, Nubians, Arabs, Negroes, Tartars, Jews, Assyrians, and others, may

be traced distinctly one or two thousand years farther back; but on this I will not insist as the chronology of Egypt is not accurately determined, for monuments earlier than 1500 years, B. C. This date too, it should be remembered, is placed in the 18th Egyptian *dynasty;* and the reader may well believe that these dynasties occupied a long vista of time. Lepsius, the best authority we have, places the epoch of Menes, the first of the Pharaohs, at 3893, B. C. !!!

The first drawing given below, is a very curious and interesting one, as it not only proves the diversity of races 3300 years before

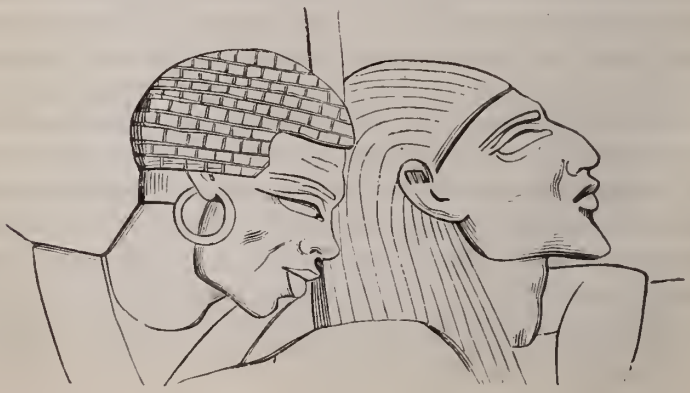
Christ, but the fact that the ancient Egyptians had the same material and used it much as we do for the classification of mankind. There are on the monuments several similar tableaux, but we shall select the celebrated scene from the tomb of one of the Pharaohs, SETI MANEPTHA I (generally called "Belzoni's tomb," at Thebes) of the XIXth dynasty, about 1500 B. C. The Egytian god Horus, is seen conducting to the King sixteen personages in four groups, and each group of four representing a distinct type of the human family, as known to the Egyptians of that day. The above figures, which may be seen colored, in plates on a folio scale in the great works of Belzoni, Champollion, Rossellini, Lepsius and others, are copied for convenience from the smaller work of Champollion Figeac. They display the Rot, Namu, Nashu and Tamheu, as the hieroglyphic inscription terms them, or in plain English the *red* (Egyptian)—the *yellow*, the *black*, and the *white* races, antedating the epoch of Moses.*

* For full details see "Types of Mankind," pp. 84-5 6

The following group is traced upon a faithful reduction by Cherubini. It represents a double file of Negroes and Nubians, bound and driven before the chariot of Rameses the II, at Aboosimbel.

In the original, the Nubians are painted of a dark cinnamon color, and the negroes black, showing that these two races presented the exact physical types then that they do in our day, on the banks of the Nile.

Next below, we given two unmistakable portraits, the one a negro, the other an Asiatic, selected from a well drawn group of nine, in the act of being smitten by King SETI I, at Karnac. No one can fail to recognize the Negro and Semitic types, which also date about 1500 years B. C.



The last drawing, given below, equally well authenticated as the others, is one of the many proofs that *negro slavery existed in Egypt more than three thousand years ago!* An Egyptian scribe, colored red (the color of Egyptians) is seen registering the black slaves, of whom males, females and children are represented. The latter with the little tufts of wool upon their heads, while a leopard's skin around the first negro's loins, is grotesquely twisted so as to make the animal's tail belong to its human wearer.

In connection with this scene, which is taken from a monument at Thebes, Sir Gardiner Wilkinson, an established authority, remarks :

"It is evident that both white and black slaves were employed as servants ; they attended on guests when invited to the house of their master ; and from their being in the families of priests, as well as of the military chiefs, we may infer that they were purchased with money, and that the right of possessing slaves, was not confined to those who had taken them in war. The traffic in slaves was tolerated by the Egyptians, and it is reasonable to suppose, that many persons *were engaged, as at present,* in bringing them to Egypt *for public sale,* independent of those who were sent as part of the tribute, and who were probably, at first, the property of the monarch ; nor did any difficulty occur to the Ishmaelites in the purchase of Joseph from his brethren, nor in his subsequent sale to Potiphar on arriving in Egypt."

We might thus go on and add numberless portraits of negro Races ; represented on the Egyptian monuments as slaves, prisoners of war, as fugitives, or slain in large battle scenes, etc., all proving that as

far back as the XVII dynasty, B. C. 1600, they existed as distant nations, above Egypt. The same profusion of portraits of the other races, above alluded to, are also seen on the monuments, equally faithfully portrayed.

The limits of our essay will not permit additional examples or arguments on the *permanency* of human types ; but it would be useless to attempt further argument with one who doubts, even after these few well authenticated facts. Nor, if it be admitted that the physical type, instincts, habits and intellect of the Negro have been the same for three thousand years, is it anything short of cruelty and folly for the Freedmen's Bureau to attempt to change this work of the Almighty.? "Can the Ethiopian change his skin, or the leopard his spots," is the language of Scripture, and proclaims a physical law over which man has no control.

I have given some reasons for the opinion that the Negro is, by *instinct, opposed to agricultural labor*, and that this instinct can never be overcome except in slavery. As it saves me much trouble in collecting facts, I will conclude in my next with copious extracts, illustrative of his agricultural history, from the pamphlet at the head of our article.

I am aware that very flattering accounts are coming in from all quarters, to the effect, that the Negroes are working well, and that a large crop of cotton in 1866 will be the result. At forty to fifty cents per pound for cotton, it is possible that the Negro may, for a time, be stimulated to some degree of industry, but I am perfectly willing to stake what little reputation I may have upon the assertion, that the Negro must fail as an agriculturalist, that the race will be gradually exterminated in this country, that they will deteriorate morally and intellectually, and that we must look to other sources of labor to produce the great staples of the Gulf States.

(*To be concluded in next number.*)

Art. II. CHOLERA AND ITS TREATMENT:

By Warren Stone, *M. D., Professor of Surgery, University of Louisiana.*

THE subject of Cholera seems now to agitate the public mind; and some knowledge of its course and character is so important to human life, that it becomes the duty of every one, who can throw any light upon this disease, or afford any advice that may give security against a frightful scourge, to put his views before the public.

It so happened that my professional life, and the Cholera in this country commenced together, or in the same year; and many incidents came under my observation calculated to throw some light on its character and pathology. The history of this disease, from its first appearance in the East, and its progress through Europe, and finally through this country, has been sufficiently written upon. The public also is well informed upon the thousand theories, and the varying and contradictory treatments that have been set forth by eminent authority. I will, therefore, confine myself simply to what I know, and to what I believe.

The first question, and the one which now disturbs the public mind is — is Cholera contagious, and can it be shut out by quarantine? I am satisfied that it is not personally contagious, and cannot be excluded by quarantine. I think though that the filth and excrements of Cholera patients in a confined place, will generate the disease. I was in West Troy, New York, when the Cholera first appeared in Quebec and Montreal, Canada, among the imigrants, in the latter part of May, and the first days of June, 1832. These imigrants in their alarm, started for the States by way of Lake Champlain, and the Champlain Canal. The authorities of Troy were informed, by express, that a death from Cholera had occurred at Whitehall, and one or two on the Canal above Fort Edward. The militia were promptly ordered out; all imigrants were arrested and taken on an island in the river, some miles above the city, and provided with all proper comforts and means of cleanliness. I feel quite sure that no cases of Cholera occurred among these imigrants. Everything was quiet until the fourth day of July following, some two or three weeks afterwards. On the night of the third of July, a dredging boat that had been employed below Albany, at what is called the overslaugh, came up to Troy for the purpose of giving the men a holiday; and

as they indulged in a little excess of food and drink during the evening, one of their number was taken violently ill late at night. The case attracted attention, and I was deputed by the guests of the hotel in which I was staying to visit the patient, and report his condition. I had never seen a case of Cholera, but this case answered the description of the disease so perfectly, that it left no doubt. He died two hours after I saw him. A strict inquiry showed that this man had been on this dredging boat steadily, and had not been ashore for a period of four weeks previous to landing at Troy, on the evening of the third of July. On the next day, information was received that Cholera had appeared in the city of New York on the second day of July. On the fifth of July, a humane person requested me to see a young man lying on a pile of lumber, who he said appeared very ill. I found him in the collapsed state of Cholera; and as he was destitute, I obtained an outhouse of the landlord, had him conveyed to it, and stayed with him the greater part of the time for twenty-four hours, administering his medicines, and even injecting a saline mixture into a vein in his arm. The room was close, but I suffered no inconvenience from contact and confinement.

The disease gradually spread, but was confined to those most exposed and worst fed; yet it did not appear that contact had any influence in its production. West Troy had a large number of boatmen and raftsmen, and consequently many cases of Cholera; but there was an almost entire exemption among those who were temperate and supplied with all the comforts of life. So much for quarantine and contagion.

I left Troy for New York, and in the latter part of October, embarked for New Orleans in the brig Amelia. The vessel was overcrowded with passengers, and there were a few cases of Cholera in New York when the ship sailed. For the first four days, there was a calm, and everything was healthy; but a terrible storm came, and it was found necessary to fasten down the hatches, and stifle over a hundred human beings in the small space between a small ship's decks. They were all attacked of course, with sickness; and their excrements together with the decaying provisions and heated air, were enough to destroy life without the assistance of an epidemic poison. I expected serious consequences. The Captain who was willing to do whatever was proper, said that the hatches could not be raised without imminent danger of sinking the ship, a fact which was subsequently verified.

On the third day of the storm, there was a cry that there was a dead man below. The weather having moderated a little, the Captain ordered the hatch to be raised, and I went below, where I found a deplorable state of things. All seemed stupified from foul air, and about twenty-five seemed to be in the second stage of Cholera. Eight bodies were thrown overboard on the first day, but every one that had strength was sent on deck, and the disease soon subsided, leaving no case of Cholera except convalescents.

At this period in our voyage, the brig was run on Folly Island in distress. There had been no Cholera in South Carolina; and, I think, none either in Georgia or North Carolina; neither was the disease prevalent for two years afterwards. A Sea Island planter, who had suffered with what is called the country fever, was on the island, but as soon as he learned that Cholera had existed aboard the ship, he fled to Charleston, S. C., leaving behind two superannuated negroes and two young ones. The city authorities at once ordered down an ample guard to prevent the entrance of any one into the city, but at the same time provided bountifully for all the wants of the passengers. The value of the cargo was considerable, and quite a company of wreckers came down for the purpose of securing it, and the city guard joined with them. Within three days, fourteen of them died; whereupon the city authorities ordered the ship and everything belonging to it, to be burned. The fact is, the stench engendered in the vessel below deck, by all the causes combined was unbearable, and the wreckers cut a hole through the ship's side; but this did not exempt them from the effects of the poison. The boats being lost, the surviving passengers had to be taken ashore through the surf, and consequently were wet. Exposure at this time, to a cold north-east wind, caused a few new cases; and many of the passengers visiting the filthy ship for liquor and plunder, renewed to some extent the disease; but as soon as the ship was destroyed and the passengers were made comfortable, the disease disappeared, showing that it could not be perpetuated in a pure atmosphere. The two old and the two young negroes were constantly among the crew and passengers for the purpose of selling vegetables; and from their well known cupidity, it is presumed that they managed to get to the ship. However, three of them died one night. In passing their tent one morning, I observed one of the young negroes sitting in the doorway crying; and on inquiring the

cause, I received in reply the answer that "they would not get up to get his breakfast." I looked into the hut and saw on the floor the three dead bodies, presenting all the marks of Cholera. The survivor had strong premonitions of the disease, but with care, they soon subsided and he was sent to the city. These are substantial facts, entirely distinct from coincidences. The first cases at Troy, show conclusively that cholera cannot be fenced out, and is not personally contagious; and the cases at Folly Island show, beyond a doubt, that the accumulated filth of Cholera will generate it, evincing clearly the importance of a rigid inspection into the state of vessels entering our ports. The cleanliness of the vessel is of the first importance; for if in a filthy condition, or if Cholera have existed in confined apartments, death may occur to those who may be exposed to the direct influence of the atmosphere; though I feel sure that it would not start an epidemic where nature intended none.

The very general opinion in Europe, that the poison is contained in the excrements, I think is true, but not to the extent that many represent. It has to be concentrated and confined to produce effect; and with strict care, cleanliness and ventilation, Cholera will never spread by contact. This first and most important step in preparing to avoid disease is to ascertain its nature. The truth is, we know nothing of the essential character of any epidemic or contagious poison. We can only appreciate effects, and through them form some idea of the pathology. Scarlet fever, measles, and small pox, and even plain, vulgar intermittent fever, are all equally obscure as to cause. The world expects the medical faculty to explain the causes of all new diseases. The truth is, we are in the habit of thinking that we know a great deal about what we are merely familiar with, when in fact, we are as ignorant of the essential cause, as if we had never seen any of the phenomena. It is not singular, that the world is so full of opinions and theories, considering that it is so difficult to get at facts and so easy to draw upon the imagination. I do not see why I should not impose my opinion upon the public, since with all my dissections and researches, I am unable to reduce it to a tangible form. We are in the habit latterly of speaking familiarly of blood poison in all cases of epidemic or contagious diseases, which I think is calculated to mislead in the treatment in some diseases. We must judge of these poisons and their effect on the system by the phenomena developed and the effect of preventives and of remedies.

As all these morbid agents are intangible, it is as reasonable to suppose that the direct impression is made on the nervous system in many cases as on the blood. It is quite certain that epidemic and contagious poisons are quite different in their effects. The influence of epidemic poisons is best counteracted by keeping up the powers of innervation and the most vigorous state of the system. This course at best has no preventive influence against contagious poison, and although a vigorous subject may sustain its effects with more safety, it often appears that the puny and impoverished subjects more frequently escape its influence. The effect of Cholera on the nervous system is analogous to that of the miasmatic atmosphere, producing a stasis of the capillary circulation; and this condition, in cases brought about by the two causes, is benefited by the same means. But more of this when upon the treatment. The direct impression of the Cholera poison, I think, is upon the nervous system. Some ingenious writers fix the impression upon the sympathetic nerve, by which they account for the congestion in the lungs, and the want of the decarbonization of the blood. But this view is merely imaginary, and adds nothing to our stock of practical knowledge. The nervous system is a unit, and it is inconceivable that so secure a portion as the sympathetic should alone be affected by a general cause. There is some mystery in the nervous system. Some nerves are voluntary and some, for wise purposes, are involuntary; but there is good reason to believe that the nerve force is the same whether transmitted through the sympathetic or spinal nerves. I have dissected very faithfully and have seen the effect of many wounds on the nerves; and I am satisfied that the spinal nerves are as strictly organic nerves as the sympathetic.

Nature is very provident; and all the organs most essential to life, and our well-being, are carefully provided against injury and against cessation of the circulation and nerve force. Hence, the free anastomosis of the arteries, and what is analogous, the linking together of every part of the nervous system through the medium of what is called the sympathetic nerve; so that under no injury can the important organs be deprived of necessary nerve force. The ganglia probably have the capacity of generating in some degree this nerve force, as all nerves have, while the numerous twigs receive it from the general source, through their connection with the spinal nerves. This accounting for disease by reference to the sympathetic nerve, is explaining an inexplicable phenomenon by an inexplicable theory, or in other words by bare assumption.

The most important thing in Cholera, as in all other diseases, is to prevent it. Experience all over the world has shown that no system of quarantine can arrest the progress of an epidemic when it starts to sweep over a country. A proper quarantine, however, is essential; as it has been shown that a filthy ship with Cholera on board is capable of infesting those who may be immediately exposed; and many lives may be saved, although an epidemic would not be averted. It has also been shown that when Cholera is epidemic, it springs up in various and remote parts of a city without regard to contact or proximity, but seizes upon those that are enervated by any and all causes that may enervate, such as meagre and unwholesome food, exposure to vicissitudes of temperature, intemperance, etc. There has probably been no greater errors promulgated to the public than in directions as to diet. Many things have been prohibited, that are not only wholesome, but really essential to health.

Vegetables have generally being ignored. There may be some indigestible vegetables that serving no purpose in the economy, may do harm, and should be avoided; but wholesome fresh vegetables are essential to health, and what is necessary to health, if properly used, will never be hurtful. Subacid fruit, when in season, is not only palatable, but is demanded by the human economy. An epidemic in its rise, progress, and decline, usually persists for three months; and no one can support life for that length of time on bread and meat alone without injury to health. It was observed in 1848, that in the fruit districts in England where cider is made, Cholera was not known. This fact led to inquiry, and it was discovered that acids were good remedies in Cholera. The truth is, a mixed diet for the human system is the best; and wholesome vegetables are necessary. Fruit properly used is also beneficial. Americans, in general, do not know how to live. They will dine amply upon substantial food and then spoil the meal with a dessert of fruit, whereas, if the fruit was given at mid-day or lunch time, young children even might partake at their will, not only with impunity, but with advantage.

The main object during an epidemic should be to keep the system in a vigorous state; and if stimulants are necessary for the purpose, they should be used, not however as a luxury or indulgence, but as a medicine. In my experience at Troy, when Cholera first made its appearance in this country, I had under my observation over a hundred laborers employed in building a dry dock. The landlord with

whom I was staying, arranged to feed them, and furnish them with liquor. In a large out-building, he served their meals, consisting of good beef, mutton, potatoes, and all fresh wholesome vegetables. He furnished their liquor at the usual price at the inferior shops; but he issued a good quality of brandy diluted to one half its strength with water. At an early hour in the morning, they took what they called an "antifogmatic," and at a late hour at night, they were comforted with a parting drink. These laborers were paid their hire every Saturday night, and I had an opportunity of seeing the quantity they drank. They averaged ten drinks each of this brandy, but the measures were moderate. The weather being warm, they perspired freely, retired regularly at ten o'clock, arose early, slept soundly and eat heartily — were too much occupied to think of Cholera, and not a case occurred among them; while idlers and those of irregular habits were dying freely around them. Such an exemption in so large a number of men of a class that under ordinary circumstances would have been subject to Cholera, furnishes a fact of some importance. They drank too much, no doubt, but their habits being regular, they never deranged digestion and for the time being, it may have been useful for them to keep bodily heat a little above the natural standard.

Next in importance to warding off Cholera, is the ability to detect it at the outset. What are usually termed the premonitory symptoms of Cholera, or Cholerine, are in reality the Cholera; and the destructive rice-water discharges bear the same relation to this disease that black vomit does to yellow fever. Some of these cases recover, but the majority sink under the pestilence. I believe that in the early stage, the disease is easily warded off, or the severer symptoms are prevented; but after the warning signs have passed unheeded, the mischief is done; and it is as reasonable to expect to discover a successful treatment for this stage as for consumption after the lungs have been destroyed.

I have likened Cholera to miasmatic disease, and the resemblance is, in many respects, striking. There are, I believe, permonitions to congestive fever, as it used to appear many years ago in this locality. The subject of this disease is prone to commit imprudences, and is disposed during the attack to serous discharges from the bowels. In Cholera, the subject, although habitually prudent, is tempted to indulge in articles of diet that in ordinary health would have been scrupulously avoided. He often times has a morbid appetite,

and is fortified by a kind of hilarity and a sense of indifference that neutralizes his usual prudence; and a man who, when in health, never eats away from his family, will slap the first friend he meets on the shoulder and invite him to take oyster, and will not be denied. After oysters, champagne is called in, and finally he goes home in unusually good spirits. In the night, he is taken with vomiting and purging, and early in the morning, he is in a blue collapse, and dies before noon. All this is attributed to his imprudence the night before. When the truth is, he had the Cholera all the previous day, in the form of what are called premonitories. Whereas, if he had stopped eating, gone to bed, and taken nothing, his life would have been saved. I believe, however, that medicine is necessary in this stage, and will render the case safe, or nearly so. Quinine operates in these cases on the nervous system almost as effectually as it does in warding off congestion from miasmatic causes. In the fall of 1848, when Cholera appeared, I was lame from rheumatism so that I could not ride; but I gave advice to a great many families. I advised them to watch carefully, and if any member had derangement of the bowels, to send him to bed; and my medium prescription for adults was fifteen to twenty grains of quinine, eight to ten of calomel, and two to three of opium, made into six pills. One to be administered every hour or two until all symptoms subsided. No deaths of Cholera occurred either in the families, or among the servants of those who sought and followed this advice. This is negative testimony, certainly, but the epidemic was severe, and it is fair to presume that some would have suffered, if nothing had been interposed as a preventive. Animal broth and a little brandy and water may be useful. If the disease has advanced further, and the discharges are copious and exhausting, astringents are proper, and moderate use of opiates may be resorted to. Among the astringents, I think kino is the best. It can be given freely without any injury to the mucous membrane, and it restrains the discharges more than any of the other vegetable astringents. I have never seen anything but increased distress to the patient from any of the heating and stimulating substances that constitute so many Cholera remedies. Calomel, I have seen used from the dose of a quarter of a grain, to half ounce doses. The small doses are useful in this stage of the disease, and I think has more curative effect than anything else. The half ounce doses do not deserve a comment. There is a condition of the mucous membrane even in the collapse that calomel operates favorably on; and I believe when properly

given, assists in preventing what has been termed the consecutive fever. Half or a whole grain of calomel dropped on the tongue every half hour or oftener, until ten or twelve grains are administered, often relieves the vomiting and fecal discharges, and leaves a favorable condition compared to that left by heating stimulants. The best that can be done for the cramps is to secure a stout attendant or two who can straighten the limbs and take the kinks out of the muscles. Sinapisms, like a hot iron, distress the patient, and hot bags of salt or bran annoy very much, and seem to exhaust without doing any good.

Ice water to drink, and ice water to the surface, is not only the most grateful remedy, but it favors re-action more than all the internal and external stimulants that can be applied. This picture presents great similarity to conjestive fever which re-acts under the use of cold water. Dr. Fearn of Alabama, I believe, was the first to bring it into use, and its value was generally recognized, but the disease gradually died out as the country grew old in cultivation, and few of the younger members of the profession have any knowledge of the old fashioned algid or congestive fever, and consequently cannot appreciate the analogy between it and Cholera in the blue stage. I first observed the effect of cold water in the Cholera of 1833, in the Charity Hospital. A patient was brought in, in the stage of collapse, quite pulseless, with a cold skin, and extremely restless, gasping for breath, and calling for fresh air. The purging had nearly ceased, but there was no attempt at re-action. I ordered free cupping over the stomach and abdomen, as was the practice at the time, and I happened to be in the ward when the cups were applied. A little dark thick blood was forced through the scarified points, looking much like poor molasses on a cold day, while the patient was writhing in great apparent agony from the cups, although his condition would have led one to expect a state of insensibility. I ordered the cups to be removed and took a basin of water and a sponge to wipe off the little blood that had been forced out. He seemed at once quieted by the cold sponging, and thrust his hands into the basin of water, exclaiming, with a brightened countenance, "Oh! doctor, that is so good!" Finding it grateful to his feelings, I continued the sponging for sometime, and finally appointed two trusty nurses to take turns in steadily sponging him with instructions to consult the patient's desire. In the morning of the next day, I found him with a steady but feeble pulse, considerable

warmth of skin and a greatly improved capillary circulation. The gasping for fresh air had nearly disappeared, showing that the congestion of the lungs had also been relieved. He slowly recovered without anything like consecutive fever, although his mucous membrane had suffered so that the nutritive functions were but slowly established. I have tried the application of cold water in different ways, and I think the sponging is the best mode of administration. I have placed the patient in a bathing tub and poured buckets of water over him and then rubbed him dry with manifest advantage; but the process is fatiguing and exhausting to the patient, and cannot often be repeated. The wet sheet answers well in some cases. I think it is well to indulge patients during the collapse in the free use of ice water. The patient's cravings are so morbid that it may be proper to use some restraint; but I have known cases that were abandoned as hopeless, and on being allowed, in mercy, by their friends to gratify themselves with ice water, they re-acted and recovered. At first, the patient would vomit as often as the stomach became a little filled; but this tendency to irritability, slowly abating under the soothing influence of ice, the vomiting and thirst gradually subsided. There is something peculiar in the state of the nervous system, which cannot be well appreciated.. One thing, I know, is certain, and that is, that nerves cannot be tortured into the performance of their functions any more than heretics or rebels. The torture of counterirritants, hot applications, and burning things in a stomach, that is already suffering the sense of heat, only serves to intensify the disease and confirm the collapse.

I have said nothing of the pathology of Cholera, except the allusion to the nervous system, because it has no anatomical character. All that is observed after death is accidental, and depends very much upon the previous treatment and the stage in which death takes place. The mistake in the treatment of Cholera is a common one. The disease is a huge one, and it is thought that powerful remedies in enormous doses are necessary to combat it, without considering that the patient has as much to bear as his system is capable of, and that it takes but little more to turn the scale against him. Nature intended mankind to die of old age, and a large majority unaided by medicine can weather the plagues, yellow fever and cholera, and all other plagues; and if the rest were aided a little, a large portion of them also would stand out against disease.

I feel that the medical profession and the intelligent public must be tired of the writings upon this subject. It is but natural that there should be many conflicting opinions, since the disease cannot be reduced to rule and made to furnish physical land-marks. Indeed, it is only lately that the members of the profession have arrived at anything like unanimity in tangible diseases that furnish anatomical marks for a guide; and even now, we are annoyed by the displays of statistics in the journals, to prove that one treatment is as good as another, when any single minded, unbiased observer would at once arrive at the conclusion that both were wrong, since they follow opposite principles, and boast of equal success. While I have little faith in the potency of special medicine, I have great faith in small things applied in the proper time and place. Hence, I have not laid down any fixed rule of practice of my own, but rather have endeavored to set forth my views concerning the character of Cholera, and leave the judgment of those who may be influenced by my opinion to govern them.

I have dwelt, I fear, too briefly upon some important points. The one most important is relative to the premonitions of Cholera. I am perfectly convinced that Cholera in its incipiency, can be checked by simple means and rigid care. I have stated what the means were; but physicians even do not enforce the observance of such rules, as they believe ought to be pursued. I mentioned the remarkable fact that when the patient is in the most danger, he has the least apprehension, and generally possesses a morbid appetite — another illustration of its nervous character.

Those who are subject to what is called sick head-ache, have their premonitions in the form of morbid appetite the day before this condition becomes a part of the paroxysm. The indulgence of the appetite may aggravate the symptoms somewhat, but the paroxysm would have occurred if the patient had fasted. The same train of symptoms occurs in epilepsy. In the latter case, food taken sometimes thirty six hours previous to the attack, remains indigested, and yet no symptoms of indigestion are shown; for the functions of the stomach are suspended, and there is not even partial digestion — everything being thrown up as unchanged as if taken into the stomach an hour or two before the accession of the paroxysm. It is the same in congestive intermittent. As the mucous membrane in Cholera plays so important a part, the indulgence in eating in the forming stage of the disease has a more detrimental effect than in

the other affections mentioned above. The important point is to determine when the disease begins. In the last epidemic, I advised my patrons to take notice of any looseness of the bowels, and consider it Cholera, and pursue the course I have mentioned. The matter is so important, any one can sacrifice a day or two. I think the Cholera looseness is peculiar, but it cannot be described so accurately as to enable one to risk his life upon it. Notwithstanding all that has been said, the disposition to affections of the bowels in Cholera times, I never could see. The fact is, every timid person's head is in his stomach, and he takes note of every little sensation and rumbling of wind; but the premonitory discharges of Cholera which look like the Mississippi water, when the Red river and the Missouri are high, never occur as a common thing. On the contrary, these discharges are genuine Cholera discharges, and as the disease advances, the rice-water sets in, and too often fatal results follow, when a little timely prudence would have saved all. I would impress upon my friends that the Cholera patient is not responsible for his carelessness and indiscretions. These departures from regular living are a part of the disease, and the habitually careful and prudent man is just as likely to commit them as the common, reckless vagabond. It is the same in yellow fever, and hence the great advantage of having cases during these epidemics in private families, where some prudent and watchful female will notice the premonitions of disease.

ART. III.—SULPHITES AND HYPOSULPHITES:

Translated from the French of CHARLES TURPIN, D. M. P., *of New Orleans, Louisiana.*

NOTWITHSTANDING the numerous materials gathered together by tradition, notwithstanding the services rendered by physics, chemistry, mechanics, natural history, physiology and nosology, medicine has still remained essentially empirical in its formulæ.

It is, therefore, with great satisfaction, that we observe the new and fruitful direction impressed on modern labors of investigation, and their tendency towards a *positivism* without which progress is

impossible. At the present time, the doctrines and exclusive spirit of individual systems tend to give way to a system of medicine less changable in its principles, more perfect, and above all, more independent. To attain this end, serious minds declare that medicine should be experimental, that every fact should be verified by rigid experiment and counter-experiments, without attempting for a moment to give superiority to any system whatever, but to establish positive truth. Then will be seen to how great extent the progress of the practice of medicine is dependent on the theory, and the important services which they are able mutually to render.

Until now the Sulphites and Hyposulphites have been almost exclusively confined in their use to the arts, and in the amphitheatres, to the preservation of anatomical subjects (Suçquet), and have been scarcely ever employed, and have been almost unknown in their physiological and therapeutic relations. This deficiency no longer exists. Numerous experiments in Italy, France, England, and Germany, have established beyond question their deoxydizing properties, and their power of arresting fermentations in the chemical sense of this word.

The point of departure of the experiments of Dr. Polli, of Naples, is a chemical theory based on this principle. He considers contagious and infectious diseases as zymotic affections, susceptible of being modified or arrested in their course by the Sulphites and Hyposulphites. Is this hypothesis well founded? Before condemning it, let us wait until the experience of others comes to our aid, invalidating or confirming the theoretical inductions, and the hopes which he founds upon the efficiency of the sulphites in purulent and putrid infections, in puerperal, typhoid, and eruptive fevers, and in fine, even in organic diseases.

GENERAL CHEMICAL CHARACTER OF THE SULPHITES.

There are four sulphites which have been used. The sulphites of soda, magnesia, lime, and the bisulphite of soda. The alkaline sulphites are soluble in water, the sulphites of the alkaline earths are not. The soluble sulphites readily alter in contact with the air, and are transformed into sulphates. If dissolved by concentrated acids, sulphurous acid is disengaged without clouding the liquid, or forming a precipitate; but, in the same circumstances, bromine, chlorine, iodine decompose the water and transform them into sulphates,

whilst if they be dry, these metalloids fail to act at the ordinary temperature.

1. *Sulphite of Soda* is white, and crystallizes in oblique prisms of four or six faces terminated by dihedral summits. It has a sulphurous taste, and a feebly alkaline re-action. Heat decomposes it into sulphate of soda, and sulphuret of sodium. The bisulphite of soda is in irregular, opaque crystals, and has an acid re-action.

2. *Sulphite of Magnesia* is in white, irregular crystals, has a sweetish and sulphurous taste, effloresces in the air; and water at 60° Fahr. dissolves a twentieth part of its weight.

3. *Sulphite of Lime* is of a yellowish white color, oxydizes slowly in the air, is very little soluble, requiring eight hundred parts of water to dissolve it. It is without taste when first placed in the mouth, but afterwards affords a sulphurous flavor.

GENERAL CHEMICAL CHARACTER OF THE HYPOSULPHITES.

These are soluble salts, having a crystalline form; they are less alterable by air and heat than the sulphites, and acids decompose them, causing a deposit of sulphur. There are three to be considered—the hyposulphites of soda, magnesia, and of lime.

1. *Hyposulphite of Soda.*—This crystallizes in rhomboidal prisms; it is white, transparent, inodorous, and has a slightly bitter taste; unalterable in the air; it is soluble in water and insoluble in alcohol.

2. *Hyposulphite of Magnesia.*—This is very soluble in water, and unalterable in the air.

3. *Hyposulphite of Lime.*—This salt is white, crystallizes in hexagonal prisms, is unalterable in air, decomposed by heat, and so soluble in water that the latter takes up nearly its own weight.

Physiological action upon Animals.—In accordance with the experiments of Polli, neither vomiting, nor diarrhœa, nor any general disturbance, is observed as affecting dogs which have taken half an ounce (fifteen grammes) of the sulphite of soda or of magnesia. These experiments demonstrates that these salts, in doses of two, three, four drachms daily, continued during ten to fifteen days, produce no inconvenience; and that, of all these preparations, the sulphite of lime appears to be the one best tolerated; and further, that autopsies made, at several different periods of the treatment, have always shown the intestinal mucous membrane in normal condition.

Physiological action on Man.—Experiments on man similar to the above have afforded like results. During the entire continuance of the treatment, the patients have presented only negative evidence of the action of these remedies, and, specially, have never voided sulphurous gas by any outlet. The urine remains clear, and free from ammoniacal odor, though long exposed to the air. A remarkable phenomenon, occurring in man as in animals, remains to be noticed, namely: that dead bodies and their fluids resist putrefaction when they have been impregnated with the sulphites (Polli).

The sulphites remain in the body in the condition of sulphites, and are eliminated in the urine, where they are found undecomposed several hours after their injection, and they are not transformed into sulphates before the expiration of twenty-four hours. The reverse occurs with the hyposulphites, which preserve their characteristics intact, though eliminated in the same manner. To test their presence, it is necessary to introduce a paper, rendered blue by the liquid iodide of starch, into the mouth of a tube containing the urine previously acidulated with sulphuric acid. The paper loses its color, if a hyposulphite is present.

Giving credit to the conscientious experiments of Polli and of Burgreave upon animals, it becomes difficult to refuse to admit, 1st, that these salts exercise upon the economy a very marked action, an action almost specific in certain cases; 2d, that their administration is able not only to retard death, but also to alleviate the symptoms of purulent infection, produced by the introduction into the circulatory system, in large doses, of pus, or of blood rendered putrid by diverse poisons, and to effect a cure in a marked number of such cases.

In 1862, Burgreave (de Gand) first employed the sulphite of soda in solution as a lotion for healing different kinds of wounds. The advantage of this new method may be summed up as follows: 1st, anæsthesia of the wound; 2d, prevention of nervous accidents; 3d, excitation of granulation, and acceleration of cicatrization; 4th, diminution of the quantity of pus, which it renders viscid, sweet, inodorous and neutral.

Experiments and chemical results have established the superiority of this new medication, which has been fully confirmed by Constantin Paul, Ferrini, Tagiuri, Gritti, Vignole, Galligo, Questa, Sagrini.

I, also, have had occasion to employ the sulphite of soda in like circumstances, and have had every reason to be gratified with the result.

Purulent infection, purulent diathesis and metastasis, phlebitis, pyæmia, putrid infection, puerperal fever, form a group of septic diseases presenting a special character of putridity, and a mixed alteration of liquids and solids. It is well known how grave the prognosis is in all these affections, and how powerless and uncertain are all therapeutic means. The indications can be much better met, and success becomes much more certain, with the sulphites.

Illustrating the idea of Jobert and Robin in regard to the analogy between ferments and the toxical agent, which appears to play the principal part in the above named conditions, Dr. Polli, by his theory and experiments, induced a large number of confréres to use the sulphites, and thanks to their labors (Tagiuri, Capperelli, de Ricci, Mirone, Rodolfo Rodolfi, Spencer Wells), they have greatly contributed to generalize their employment, and to demonstrate the real services which they are capable of rendering. To prove this, it is only necessary to quote the words of Semmola, clinical professor at Naples, whose testimony is all the more weighty, since he does not partake of the enthusiasm of his confréres, and has endeavored to specify, as far as possible, the cases in which the uses of the sulphites may be advantageous: "The diseases against which the action of the sulphites is incontestably remarkable, are putrid infections, not resulting from a specific cause. Thus, pus in putrefaction, depraved intestinal chylification, abnormal urine produce intoxications, against which the sulphites are almost specifics. They paralyze the action of the absorbed putrid substances, completely suppressing the putrid local emanations, provided that the topical applications of these remedies be added to their internal administration."

It is to be remarked, that, in all the observations made, the dose of the sulphites has always been enormous (ten, fifteen, twenty scruples in twenty-four hours), and their use long continued. Is this mode of employment a necessary condition for success?

INTERMITTENT FEVERS.

The sulphites were indicated, in advance, in paludal intoxications, and the following table prepared by Constantin Paul, illustrates the results obtained. It must not be forgotten that they are only

substitutes for the sulphate of quinine, and that their action is much slower.

Fevers treated with the Sulphites:

Mazzolini,	403	cases;	336	successful;	36	unsuccessful.
Capparelli,	1	"	1	"	0	"
Poma,	15	"	7	"	8	"
Lattini,	11	"	11	"	0	"
Maraglio,	2	"	0	"	2	"
Ferrini,	3	"	1	"	2	"
Tagiani,	2	"	0	"	2	"
Total,	437		356		50	

Ratio: cured, 81.46 in 100; unsuccessful, 11.44 in a 100.

Fevers treated with Quinine:

Mazzolini, 184 cases; 102 cured; 82 relapses.

Ratio: cured, 55.42 in a 100; relapses, 44.56 in a 100.

TYPHOID FEVER.

Before accepting the opinion of Dr. Polli in regard to the zymotic nature of typhoid fever, in which he admits the existence of a morbid and specific ferment susceptible of being neutralized by the sulphites, it is perhaps better first to agree upon the signification of the words, Typhoid Fever. Let us, then, stop to examine, not the specific character of this disease, which is generally admitted by physicians, but the proper signification of the term Typhoid Fever, which has caused so much controversy, and which is so often employed differently.

Thus, for the French school, it is characterized by a lesion of inflammatory natere, seated in the glands of the Peyer and mesentric ganglia, whilst the physicians of London, Edinburgh, and of Dublin, attach less importance to these lesions, because they have less frequent occasion to observe them. This difference would probably continue to exist if the labors of Shattuck of Boston, of Gerhard and Pennock of Philadelphia, had not proved that there exists in the United States and England two diseases formerly confounded under the name of Typhus Fever, but really distinct, and resembling each other only in some of the general phenomena. One, affecting young subjects, is the Typhoid Fever of the French school, whilst the other, common to all ages, is a distinct disease from the former, which bears the name of Typhus Fever.

As Typhoid Fever is less common in Italy than anywhere else, and

as there is some doubt as to the nature of the Typhoid Fever treated by Terni, Parrigini, Finamore, Calapreta, Capperelli, Farrini, Tagiari and Caveeri, we abstain from forming any conclusions in regard to the results furnished by the sulphites in this disease.

VARIOUS DISEASES.

A similar reserve will be maintained in regard to rubeola, scarlatina, variola, dartre, scorbutus, maguet, etc. We will wait for more extended observations, to confirm or invalidate the results obtained.

In purulent catarrhs of the bladder, and in cancers of the womb at a certain stage, injections of the sulphites are very active, either as disinfectants or as preventives, or curatives of the nervous intoxication due to putrid fermentation. (*Semmola, Rodolfi, Capperelli.*)

Administration of the Sulphites with other medicines.—The sulphites may be given with calcined magnesia (Manglio), nitrate of potash (Poma), acetate of morphine and of veratria (Ferrini), opium, aconite, belladonna (Emile Delpech), infusions of the leaves of peppermint, melissa, absynth, orange, hyssop, tea, chicory, saponaria, etc., or with infusions of the flowers of mallows, chamomile, lime; with the infusions of hop, cinchona, quassia, dulcamara, gentian, rhatania catchu, etc.; with anti-scorbutic syrups, and the syrup of the rind of the bitter orange (Emile Delpech).

The sulphites are prescribed in solutions, in glycerine, syrups, in alcohol, for gargles, mouth-washes, collyria, enemata, etc.

Dose.—If the experiments of Polli have demonstrated how innocuous are the preparations of the sulphites, so also do the doses administered by the Italian physicians, which I have deemed it a duty to report faithfully, furnish us with still more convincing proofs of the same fact.

Sulphite of Magnesia.—Tagiura gives six, eight, ten scruples,* in twenty-four hours, and six scruples by injection. Capperelli gives three scruples per day; Maraglio, four to five scruples; Poma, sixteen to twenty scruples, divided into sixteen doses, given before the febrile access; Ferrini gives sixteen scruples, divided into four doses, one every three hours; and Polli gives fifteen scruples daily.

* In the original the French *grammes* is the word used, which throughout this article is translated "scruple." The gramme is only about fifteen and a half troy grains, and, therefore, four and a half grains less than the scruple.

Sulphite, Bisulphite and Hyposulphite of Soda.—De Ricci gives twenty scruples of the sulphite in twenty-four hours, and of the bisulphite one and a third scruples every two hours.

Mirone gives of the hyposulphites two, and Caperelli eight, scruples a day.

MODE OF ADMINISTRATION AND DOSE.

1st—*Tisanes:*

℞. Sodæ hyposulphites,.....3i.
Aq. fervent,.....℥viij M.

In same quantity of liquid, the dose may be carried from fifteen grains to two and a half drachms.

2d—*Lotion for External Use:*

℞. Sodæ sulphit. vel. hyposulphitis.....3iv.
Aquæ distil,.....℥viij M.

3d—*Syrups:*

℞. Magnesiæ hyposulphit.,.....3v.
Syrup,.....℥x M.

Each tablespoonful will contain fifteen grains of the salt.

4th—*Draught:*

℞. Magnesiæ hyposulphit.,.....3ij.
Syrup menth. pip.,.....℥j.
Aq. menth. pip.,.....—
Aquæ,.....āā ℥ij M.

5th—*Tinctures:*

Alcohol at twenty-one degrees readily dissolves from a half drachm to an ounce of these salts.

6th—*Gargle:*

℞. Sodæ sulphit. vel. hyposulphitis,.....℥j.
Mel. rosæ,.....℥jss.
Aquæ lactucæ.....℥vjss M.

7th—*Collyrium:*

℞. Sodæ sulphit. vel. hyposulphit.,.....gr. x—xv.
Aquæ lauro—cerasi,.....℥j.
Aquæ rosæ,.....℥xj M.

8th—*Enema:*

℞. Sodæ sulphit. vel. hyposulphit.,.....3iv.
Inf. sem. lini,.....℥viij M.

9th—*Glycerolé:*

℞. Glycerinæ puræ,.....℥x.
Amyli,.....3v.
Fiat secundem artem et adde:
Sodæ sulphit. vel. hyposulphit,.....3x M.

10th—*Ointment:*

℞. Sodæ sulphitis,.....℥j.
Tinct. limonis,.....gtt.vj.
Unguent Belzoini (balsamique),.....℥j M.

All of these prescriptions are taken from Delpech, and are to be found in the excellent article of Constantine Paul, published in *Le Bulletin Therapeutique* of 1865, Nov. 4, 5, 6, etc.

In a subsequent article, it is proposed to enter into the questio nof fermentation, upon which is based the theory of Polli.

(To be continued.)

ART. IV—MODIFIED INOCULATION:

By C. H. TEBAULT, M. D., *Visiting Physician Charity Hospital, New Orleans, Louisiana.*

IN offering the present paper for publication, I am influenced by no other motive than a desire to bring into somewhat more prominent, and I trust, too, more favorable notice, a subject hitherto attracting but a fugitive interest in the profession. I allude to modified inoculation.

My attention was first directed to this subject by the accompanying note from George B. Wood, M. D., "Treatise on the Practice of Medicine," fifth edition, page 406:

"It was an easy inference from the modifying influence of the system of the cow on the variolous contagion, that a similar effect might be produced by the milk of the cow on small-pox matter; and M. Theile, of Kassan, and M. Robert, of Marseilles, proposed the use of such a mixture in vaccination. M. Brachet, of Lyons, in the year 1832, made some experiments with satisfactory results; and these have been recently repeated on a much larger scale at La Charité, in Lyons, by M. Bouchocourt. Equal parts of cow milk and variolous matter taken from the pock in the vesicular stage were mixed, and then children inoculated with the matter.

"Others were inoculated from matter proceeding from the vesicles thus produced, and others again from these secondary cases. Of twenty-one cases, eighteen presented solitary vesicles, confined to the place of puncture, having all the character of genuine vaccine disease; others, but a few additional pocks. The inoculation thus performed proved protective." (See *London Medical Times and Gazette*, April, 1854, p. 412).

From the month of October, 1864, until the surrender of Gen. Johnston, I was connected with the Ocmulgee Hospital at the Confederate Post of Macon, Georgia, and, together with other duties, was

appointed superintendent of vaccination. It was imperative at this date, by orders, so requiring, that every soldier, before receiving his discharge from the military hospitals, should be closely scrutinized with reference to the probable degree of immunity he enjoyed against variolous contagion; if he were adjudged sufficiently fortified against the disease, a certificate, so stating, was furnished him by the surgeon in charge, which he deposited with his ranking medical officer on returning to the army. If, *per contra*, he was not deemed properly secured, vaccination, or revaccination, was required to be performed, as the case might be; and a certificate, giving date of operation, statement of result, etc., supplied him, to be likewise surrendered on rejoining his regiment or company.

The numerous vaccinations and revaccinations which such orders imposed, proved, ere long, too exhausting for the supply of reliable virus on hand. It hence occurred, that many of our soldiers were vaccinated from scabs, procured indiscriminately from each other; and it was precisely from just this quality of material that nearly all (excepting, probably, a fractional few which may have taken on erysipelas or gangrene), those distressing cases originated, jeopardizing at times life itself, as well as limb.

These anomalous cases were by no means of rare occurrence, nor were they confined within the pale of the army. Liberal details of medical men were sent throughout the country to vaccinate all the healthy children, so that an ample supply of the purest vaccinia should be ever at hand for the use of the medical staff.

This admirably designed arrangement was destined to defeat itself. At first, moved by the double motive of patriotism and a desire to protect their offspring from the contagion of small-pox, at this time widely diffused through every State of the Confederacy, mothers unhesitatingly yielded the arms of their infants and older children to the charmed lancet of the surgeon. And thus for a while this most necessary work went successfully on without hindrance. But can it be wondered at that this spirit, but lately all aglow, on the part of mothers, should wane and dim into well-nigh extinction, when spurious matter, by some accident or other, was used on their nurselings, developing, in lieu of simple vaccine disease, ugly, phagedenic sores, spreading into unmanageable and destructive ulcers, ending occasionally in the forfeiture of life, or else seriously compromising the future usefulness of the limb?

In this last view of the matter, it cannot be a subject of surprise that our legitimate virus could no longer sustain the ceaseless drain upon it. It was at this epoch in the history of the army, that I decided on testing the value of the note above quoted, being unprovided with reliable matter, and quite unwilling to compel soldiers to submit to the introduction of a virus, of which I could procure no history.

Accordingly, with every possible caution under the circumstances, and strictly conforming to the recommendations contained in the note adverted to, I engrafted one soldier after another with the modified lymph, until thirty-odd had swelled the list of my experiments. Of thirty-five persons thus successfully inoculated, three only exhibited a few additional pocks, in no case more than six, in addition to the seat of puncture.

No perceptible difference could be detected, whether in the course of the pock, or in its effects on the system at large, when contrasted with the phenomena attendant on simple, uncomplicated vaccine. None of these cases had been previously vaccinated. The wards of the Ocmulgee Hospital, at the time of these experiments, were more than usually crowded—the result of an order transferring the greater number of the hospitals in this department to the Carolinas. It was thus rendered impossible to prevent the inoculated patients from freely intermingling with the rest of the inmates of the hospital, many of whom even at this late day had never been vaccinated; still, in the face of these facts, not even a single case of varioloid occurred within its walls, during or after the suspension of this practice. Previously, from time to time, an occasional case had offered.

The accidental information of which I became possessed, at this juncture, at the hands of a friend in the profession, to-wit: that the laws of the State of Georgia were specially severe concerning any other procedure than vaccination, as a security against small-pox, influenced me to discontinue the practice, which I had so far kept to myself. A further inducement to avoid all possible conflict with the State laws, consisted in the fact of my now being in possession of a moderate supply of good material, secured from healthy children, whom I had recently vaccinated.

My observations on the subject, however, did not close here. A large small-pox encampment had been established on the outskirts of Vineville, about three miles distant from Macon. I use the

term "encampment" purposely, for the patients were all treated in tents. It was under the direction of Assistant Surgeon L. Carter, at that time in the service of the Confederacy, and was an appendage to the Floyd House Hospital, Surgeon Dabney Herndon in charge.

I omitted to state a very important fact when recording the results of my own cases, which defect in this history, I shall correct at once. I had neglected to mention that those soldiers whose arms had perfectly cicatrized, permitted me, with some persuasion, to test, by a second inoculation, the degree of immunity so conferred, and this time with pure unmodified small-pox lymph. The material used on them, I intentionally secured from a case of confluent variola, and introduced the same in great abundance into numerous incisions. All that remains to be added is, that the second inoculation with confluent variola lymph, had no effect in the three cases thus experimented on.

At the encampment above mentioned, this modified inoculation was in general use, vaccination being entirely ignored. It was practiced, I believe, previous to the date of my own experiments, though unknown to me at the time. To this station all cases of variola or varioloid occurring at any of the Post Hospitals, were immediately sent for treatment. As the result of too much precaution, it frequently happened that soldiers were sent out to this place, because their symptoms were suspicious, and associated with the fact that they had never been vaccinated, or had never taken, when, in truth, they were not laboring under the supposed disease. Such cases, after a systematic exposure of the kind, were constrained to remain here, till they were armed against the disease by measures looking to immunity, or had successfully passed through its several stages and sufficiently recovered therefrom.

The immunity never failed to follow successfully modified inoculation, as far as could be ascertained. In no instance, after the pock had attained to maturity, have I ever seen varioloid ensue. I cannot speak so favorably of vaccination, for I have seen small-pox itself occur again and again under exactly such circumstances, and, in spite of the unquestionable purity of the virus used. Hundreds of cases at this encampment were subjected to this modified inoculation, yet not a case found it necessary to take to bed. Their identity in every sense with vaccinia, was as noticeable and as thorough as could be.

The people of the neighborhood and their children, on applying

to be vaccinated, were likewise inoculated, and the same favorable results were obtained. They visited and intermixed with each other without any restrictions on their freedom; yet, in this locality variola and varioloid were scarcely known. The few cases that did occur, were distinctly traceable to exposure to small-pox itself.

It would seem that this immense focus of contagion, here centralized, would have invited numerous attacks of variola or varioloid among the dwellers of this immediate vicinage; but the converse was the case, whilst in Macon, these diseases were alarmingly prevalent. As far as could be determined by investigation, the few seized by either of the affections were confined exclusively among the non-vaccinated and the vaccinated—not a case occurring among such as had been protected by modified inoculation. The scabs derived from such inoculation in healthy children, were used with like happy results.

It is to be hoped that Dr. Carter will find an early occaaion to make known his very extended experience in the premises.

Dr. C. B. Gamble, of Florida, our estimable and respected Surgeon of the Post, on my apprising hinn of such procedure, in contravention of the State laws on the subject, was about to take instant means for its suppression. I entreated of him a little delay that he might inquire into its results, at the same time expressing how favorably I viewed its workings. I saw Dr. Gamble some two weeks later, and, in lieu of discountenancing and frowning down its further practice, he had become one of its advocates, in so far as to send scabs procured as above stated from healthy children, to his friends and acquaintances writing for vaccinia. These, he afterwards informed me, had behaved admirably in every case.

In the *Revue Medico-Chirurgicale*, No. 13, published by Dr. A. Martin Lauzer, for 1865, may be found on p. 543, the following, which I translate into English :

"*Inoculation of variola-virus, diluted by admixture with cream.*— M. Lanfranchi, Sanitary Officer at Guitera (Canton of Licavo District of Ajaccio), and physician to the Canton, had to contend in 1854 with an epidemic of confluent variola, which carried off more than four hundred victims from the nine parishes of the canton, among whom children were to be found wearing manifest traces of previous vaccination. The variolous inoculation attempted in some of the parishes did not lessen the intensity of the malady. M. Lanfranchi conceived the idea of testing on his son a mixture of vario-

lous matter and cream from cow milk, after the ensuing method : Having made a small incision about the middle of the anterior aspect of the fore-arm, he deposited virus, just secured from a small-pox vesicle, into the same; and then taking a small quantity of cream from cow-milk, on the point of the same instrument, he introduced it into the same incision, spreading it to mix it with the virus; then covering up the slight wound with a light coating of the same cream, which he required to dry before permitting the readjustment of the child's dress.

"The result of this operation was not long waited on; a slight irritation followed soon after the inoculation of the modified variolous virus. It formed a small scab which fell off or became indolent on the third or fourth day; when on the sixteenth or seventeenth day a well pronounced inflammation manifested itself at the incision; fever was kindled, and variolous pimples exhibited themselves in divers places on the body, to the number of seven or eight.

"The fever was mild in character, and the child recovered without having evinced the least restlessness. Six other children of the parish, not yet seized by the epidemic, were subjected to the same mode of inoculation, and like the son of M. Lanfranchi had a benign type of varioloid. Last summer a fresh epidemic of variola occurred in one parish, and successively invaded the entire canton. As in 1854, this epidemic seized on the vaccinated alike, as on the unvaccinated children. The small-pox was confluent, claiming many victims, and disfiguring those who did not succumb under its violent usage. Now, in this instance, M. Lanfranchi practiced, as he practices still at this moment, his inoculation of variola-cream, and the children whom he has thus protected enumerate above a hundred. With all, the effects were so exceedingly mild, that a large number did not take to bed, and in no case did such inoculation present more than twenty pocks. It is difficult in families to put to the test the preservative virtue of such inoculation, by afterwards inoculating with the pure variola lymph; but what M. Lanfranchi could not prove on the children of his clients, he verified on his own son, at the suggestion of M. Cauro. With virus taken from a variolous vesicle, without admixture with cream, he inoculated his child ten years after the modified inoculation of 1854, and the result was void. The subject was perfectly refractory against the second inoculation." (*Journal de Médecine Pratique.*)

M. Lanfranchi's method is somewhat different from that pursued

at Macon. His cases were something severer, and may be due to the difference in his plan of inoculating. In his severest cases, however, twenty pocks were the largest number that ever occurred in his practice. There are few persons, it occurs to me, who would not accept immunity from the disease at this cost. He found this procedure infinitely superior to vaccination.

Let us briefly, in conclusion, draw what may be considered fair inferences from the foregoing facts:

1st. We hope to have demonstrated that its operation is equally benign with vaccination—in fact that their action is identical, and resting this statement on an experience of fully five hundred cases.

2nd. That the disease so ingrafted, like vaccinia, is not communicable by contact.

3rd. That the immunity it confers would seem to be more lasting, and otherwise superior to that responding to vaccination.

4th. That simultaneously with the occurrence of small-pox, we are supplied with a seemingly all-potent means for its arrestation.

ART. V.—MARRIAGES OF CONSANGUINITY:

By S. S. HERRICK, M. D., *New Orleans, La.*

"Report on Influence of Marriages of Consanguinity upon Offspring." By S. M. BEMISS, M. D. Louisville, Ky.

"Transactions of the American Medical Association." Vol. XI—1858.

"Du Danger des Mariages Consanguins sous le Rapport Sanitaire." Par M. le Dr. FRANCIS DEVAY. Paris, 1862.

"Journal des Connaissances Médico-Chirurgicale" Publié par le Dr. A. MARTIN-LAUZER, 1862-3-4-5, passim.

THE subject at the head of the page seems to have attracted an unusual degree of attention among medical men during the last decade. The questions therein involved are as old as society; in the earliest code of laws which has come down to us, the degrees of relationship, between which marriage might be lawful, were clearly defined; and there is good reason to believe that this matter has received the attention of law-givers in all civilized nations down to the present time. The Church of Rome has seen fit to extend the prohibition of the Levitical law to the fourth degree of consanguinity,

inclusive; while the Chinese civil law declares all acknowledged degrees of consanguinity, and even coïncidence of name, to be a bar to marriage. The concurrent judgment of the civilized world, since the dawn of history, would certainly claim high consideration, without even an examination of its merits; and yet, there are not wanting men in our time who question its validity upon their sole personal observation. Unquestionably this is an age of intense intellectual activity, fertile in invention and discovery, unexampled in the extension and diffusion of knowledge, and in its application to the production of material wealth, and the consequent multiplication of the comforts and elegancies of life. But let a critical and impartial observer examine, for a definite period, all the pretensions to discovery and invention in science and art, and how many will he find possessing sufficient truth and merit to save them from oblivion? We might safely say, not one-tenth. Still, as long as prizes are occasionally won in the lottery of Fame, we must expect adventurous men to take its chances.

This remark is more pertinent to the novelties which curious and enthusiastic minds have latterly attempted to engraft on medical science, or substitute for it, than to the subject now in question; still it is not without its bearing here. If the world has been laboring under all the disadvantages of a great scientific error, which has always been closely interwoven with the social relations of life, it were unworthy of this progressive age to tolerate it longer, and the fame of Hercules awaits the champion who shall subdue the monster. From the restrictions which the laws, civil and religious, have thrown around marriages of consanguinity, it is evident that a large portion of mankind must have considered any bar to their free choice a hardship; and it is not strange that the propriety of establishing them should be questioned, and that advocates for their repeal should spring up. Such has lately been the case, and observations have not been wanting, which tend to show that marriages within the second degree of consanguinity, or cousin-germans, are productive of no defect not possessed by either parent. These observations have led to a wider and deeper investigation of the subject than was ever before made, and it may confidently be asserted that it is now better understood in all its relations than at any previous period.

The report made by Dr. Bemiss, referred to above, is, so far as I know, based upon the most complete and comprehensive investigation ever made on this subject, which seems to have been impar-

ally directed to the simple object of ascertaining the effects of consanguineous unions. It consists of 833 observations, made by a large number of medical men in twenty-five different States of the Union, upon all the cases of consanguineous alliance on which they could gather the required data. In addition to this was given the comparative result of 125 marriages in which no consanguinity existed In the former number each case is reported separately, and all are arranged in tabular form, exhibiting a large number of particulars, and throwing so much light on the subject that no difference of opinion could reasonably exist upon the result.

From his table of aggregates the following extract is made, the reader observing that "Class A, includes instances of marriage or incestuous intercourse between brother and sister, or parent and child; Class B, instances of marriage or incestuous intercourse between uncle and niece, or aunt and nephew. Class C, marriage between blood relations, who are themselves descendants of blood relations; Class D, marriage between double first cousins; Class E, marriage between first cousins; Class F, marriage between second cousins; Class G, marriage between third cousins; Class H, marriage irregularly reported, all first cousins":

CLASSES.	No Observations in each class.	Unions Sterile in each class.	Average number of births to each marriage.	PER CENT. CHILDREN.								
				Defective.	Deaf and Dumb.	Blind.	Idiotic.	Insane.	Epileptic.	Scrofulous.	Deformed.	Died young.
A	10	—	3.1	93.5	—	—	61 2	—	3.2	16 1	35.4	—
B	12	3	4.41	75 4	1.9	5.6	5 6	1.9	1.9	20.7	26.4	43.3
C	56	4	4.17	53 8	4 2	5.1	12 8	1.2	1.7	18.8	3.8	26.9
D	27	—	5 7	27 2	1.2	1.2	2 5	3.8	1.2	6.3	1.2	35
E	580	40	4.8	24 9	4 2	2 2	8.3	—	1.6	6.2	1.9	22.5
F	112	5	4 58	13	1.7	—	3 3	—	1.1	2.9	1.7	16 5
G	12	—	4.91	27	5	—	1.7	1.7	3.4	16.9	—	13.5
H	24	1	5	17 5	2 5	—	2.5	1.6	—	12.5	—	10
Total ..	833	53	4.46	28 7	3.6	2 1	7.	—	1.5	7 6	2.4	22.4

It is to be noted that the number of defective births corresponds with the degree of consanguinity, except in the case of class G, where the number of observations was obviously two small to establish a rule. Of those that died young, it is likely that defects were often unnoticed, especially in Classes B and D, where the ratio of early deaths was largest; while we have to remark here a smaller number under the heads of deaf-muteness and idiocy than we have a right to expect—the very defects most likely to escape notice in young subjects.

The following, from Dr. Bemiss's report, shows the "comparative results of marriage between parties not previously related or known to be the immediate descendants of relatives":

NUMBER OF OBSERVATIONS.	Average number of births to each marriage.	PER CENT.							
		Defective.	Deaf and Dumb.	Blind.	Idiotic.	Insane.	Epileptic.	Scrofulous.	Died young.
125	6.7	2.15	0.36	0.12	0.71	0.12	0.36	0.12	16

Here we observe that not only were the unions in the latter case more fruitful, but the issues present defects in less than one-tenth the average proportion shown above, while the ratio of early deaths is notably diminished.

As the result of his inquiries among the various asylums for the afflicted, Dr. Bemiss says: "I have made great effort to ascertain the probable proportion of the deaf and dumb, blind, idiotic and insane in our asylums, who are the descendants of blood intermarriages. This effort has not been successful, from the difficulty principals of such institutions find in gaining the requisite facts. I feel satisfied, however, that my researches give me authority to assume that over ten per cent. of the deaf and dumb, and over five per cent. of the blind, and near fifteen per cent. of the idiotic, in our State institutions for subjects of these defects, and throughout the country at large, are the offspring of kindred parents, or of parents themselves the descendants of blood intermarriage."

We have not the means of determining the ratio of consanguineous marriages to the entire number in this country, but it cannot approach the figures above. In France very satisfactory results have been obtained, as may be seen below. From the *Révue Médico-Chirurgicale*, 1862, named at the head of this article, the subjoined is transcribed:

"At the Academy of Sciences, meeting of June 16, M. Boudin read a paper, of which the following are the sum and conclusions:

"1. Consanguineous marriages in France represent about .02 of the entire number, while the proportion of deaf-mutes from birth issued from these unions, is to the whole number of congenital deaf-mutes—(A) at Lyons, at least 25 to 100; (B) at Paris, about 28 to 100; (C) at Bordeaux, about 30 to 100.

"2. The proportion of deaf-mutes at birth increases with the de-

gree of consanguinity of the parents. If we represent by one the danger of engendering a deaf-mute child in an ordinary marriage, the danger is represented by 18 in marriage between cousin-germans; 37, in marriage between uncle and niece; 70. in marriage between nephew and aunt.

"3. At Berlin they reckon 3.1 deaf-mutes among 10,000 Roman Catholics; 6 to 10,000 in the great majority of Protestants; 27 to 10,000 among the Jews. In other words, the proportion of deaf-mutes increases with the aggregate of influences favorable to consanguineous unions by the canonical law.

"4. They reckoned, 1848, in the territory of Iowa, U.S., 2.3 deaf-mutes in 10,000 whites; 212 to 10,000 slaves. [Here is a blunder attributable to his ignorance of the geography of our country. The reader may conjecture his meaning]. That is to say, in a population of color, in which slavery favors consanguineous, and even incestuous unions, the proportion of deaf-mutes was ninety-one times greater than in a white population protected by the law, civil, moral and religious.

"5. Deaf-muteness is not always attributable directly to consanguinity in parentage. We see it sometimes manifested in cross-marriages, when one of the parties had sprung from a consanguineous marriage.

"6. The most healthy consanguineous parents may engender deaf-mute children; on the contrary, deaf-mute parents, not consanguineous, engender deaf-mute children only very exceptionally. The frequency of deaf-muteness among the children of deaf-mute parents is, therefore, independent of all morbid inheritance.

"7. The number of deaf-mutes often increases in a very sensible degree in localities where natural obstacles to crossing in marriage exist. Thus the proportion of deaf-mutes, which is for France altogether as 6 to 10,000, rises in Corse to 14 in 10,000; in the Higher Alps, to 23 in 10,000; in Islande, to 11 in 10,000; in the canton of Berne, to 28 in 10,000.

"8. We may estimate the entire number of deaf-mutes in Europe at about 250,000.

"9. Consanguineous alliances are also charged with favoring infecundity and abortion with parents; albinism, insanity, idiocy, pigmentary retinitis and other infirmities with offspring; but these various propositions appear to us to demand a numerical proof, which is more or less deficient as yet."

In the same number of this Review, M. Isidor, Grand Rabbi at Paris, while protesting against the above estimate, as regards the Jewish population, admits a proportion of deaf-muteness of from 12 to 15 in 10,000.

In the December number for the same year, M. Boudin adds : "Nothing seems, *a priori*, to indicate a difference in result between these two kinds of union. However it is worthy of remark that the Levitical law, which forbids marriage between nephew and aunt, permits, nevertheless, that between uncle and niece. The canonical law, alone, forbids marriage to the fourth degree of consanguinity inclusive—that is, to the issue of cousin-germans."

The Levitical law is, indeed, silent on the union of uncle and niece, but the Primative Church believed the spirit of the law to condemn it, and accordingly regarded it as incestuous.

An examination of the few cases reported by Dr. Bemiss, under Class B, confirms the statement of M. Boudin above, that the results are more disastrous in the union of nephew and aunt than the reverse.

From the same Journal, 1865, this interesting account is transcribed:

"In 1849 there died at Wildah, Kingdom of Dahomey, a Portuguese trader, named Da Souza. An important personage in the county where he lived so many years, Da Souza had acquired a great fortune by the slave trade. At his death he left behind him 100 children, born of 400 women kept in his harem. The sinister policy of the Kings of Dahomey, hostile to the establishment of a mixed race, has confined this numerous progeny in a private enclosure under the charge of one of the sons of Da Souza. Viewed with an evil eye in the country, watched by the agents of the king, the most despotic monarch in the world, these mongrels can form connections only among themselves, or, to speak more properly, they live promiscuously, in the most shameless manner. In 1863 they reckoned children of the third generation. The color of their skin was returning rapidly to a deep black, while they still preserved some of the features of their European ancestor. We are able to declare, on our own authority, that, among all these descendants of Da Souza, forming among themselves unions of the closet and most monstrous relationship, there are no deaf mutes, no blind, no cretins, no infirm from birth. By compensation this human herd goes on diminishing, and is threatened with speedy extinction."

While this unexpected absence of intellectual and physical defects may strike us with some surprise, the return of these people to the negro type, under the combined influences of climate and social, moral and mental degredation, presents an interesting observation to the ethnologist.

In opposition to the carefully digested conclusions of M. Boudin, the elaborate report of Dr. Bemiss, and, it may be added, the concurrent testimony of the world in all ages, we have the personal observations and opinions of a few writers in the French Review before mentioned. In the volume for 1863 M. Bourgeois agrees decidedly with Prof. Bouchardát, that no degeneration results from consanguineous intermarriage, unless the parties are affected with similar hereditary vices. M. Bourgeois is supported in his views by M. Penier, chief physician of the "Invalides." He and M. Seguin state that numerous consanguineous unions in their own families have been succeeded by no ill results to posterity.

In the volume for 1865 it is reported: "Dr. Voisin has passed a month in the commune of Batz, Loire Inférieure, the inhabitants of which, for several years, have practiced consanguineous intermarriage, and live almost isolated from the surrounding districts. He has observed the consanguineous couples, which now number 46; he has ascertained the antecedents of husband and wife; he has examined them and their children in a physical and intellectual point of view; he has made inquiries among the old inhabitants of the country; and he has prepared, with these data, tables from which it results that consanguinity produces no disease, no degeneration, no vice of conformation, and that the race remains handsome and pure."

I shall not attempt to account for such a striking discrepancy between the conclusions of M. Voisin and those of M. Boudin; while the intelligent reader may draw his own conclusions from the laborious researches of our countryman, Dr. Bemiss.

A tendency to the reproduction of the intellectual, moral and physical traits of parents is universally admitted, and it is almost as generally granted that inherited defects are exaggerated in the offspring of blood relations; moreover, recent investigations go to prove that consanguinity in marriage, as an original cause, is adequate to the production of all the natural malformations, infirmities and vices to which the human organism is subject. It is a happy circumstance for our race, that infecundity of parents and early death of their offspring often attend these unions. An historical examina-

tion of large communities strongly confirms the views deduced from the investigations before mentioned.

Sparta was in the strictest sense an aristocratic State, whose free population was never large. On the authority of Niebuhr, the citizens had been so reduced in number after the battle of Leuctra, that they would have become extinct, had they not been recruited by the Laconians who surrounded them.

As a result of close intermarriages among the nobility of France and Spain, writers at the close of the seventeenth century remarked: "In Spain, when a Grandee of that nation was announced in a saloon, they expected to see enter a sort of abortion." In France it was said: "In regarding the mass of men composing the high nobility of the State, one seemed to be in a society of invalids." The frequent extinction of these families was remarked by non-medical writers.

In 1583 the sovereign council of Berne had granted the right of citizenship to 387 families. In 1793 there remained of these only 108; the rest were extinct.

As examples of physical and intellectual degredation from want of crossing in entire communities, M. Devay instances the Cagots of the Pyrenees, the Vaqueros of Asturias, the Colliberts of Bas-Poiton, the Marrans of Auvergne, who are held as accursed and outcasts by the surrounding inhabitants. These are probably remnants of tribes driven from their homes by the tide of invasion, and are rapidly diminishing.

The preservation of the Jews and Gypsies is to be attributed to their migratory habits, by which close intermarriages are in a degree obviated. The Jews, having been scattered for ages over the civilized globe, have acquired many of the national traits of the inhabitants surrounding them, while their engagement in commercial pursuits has given them extraordinary facilities for emigration and extended intercourse.

The readiness of the Gypsies to reinforce their numbers by any vagabonds willing to join them is well known, nor is accusation wanting of a propensity for stealing young children for the purpose of adoption.

The permanence of the old families of the British aristocracy is largely attributable to their alliances with the vigorous stock of wealthy families belonging to the commercial and manufacturing classes.

The spirit of caste tends strongly to consanguinity in marriage,

and to this principle, so interwoven in the Egyptian and Hindoo polities, we may ascribe chiefly their weakness as nations and the stationary character of their civilization. Among the abominations of the Egyptians and Canaanites, which the Hebrews were commanded to avoid, were incestuous connections. The Canaanitish tribes have long since been extinct or merged among their conquerors. The Egyptians, having been subjected by the great conquering nations successively, still exist, a degraded and oppressed race known as the Copts, under the Turkish yoke. On the other hand we may attribute the permanence of the Chinese state to the prohibition of consanguineous unions, while its exclusive policy in regard to foreign intercourse accounts for want of progress in civilization.

In all ages of the world the conquerors and leaders in civilization have been nations of mixed blood. Unquestionably the most aggressive and progressive race now existing is the mixed race known as the Anglo-Saxon. The people of these States, not yet brought to a condition of fusion, and therefore not yet having acquired a distinct national character, which belongs only to a homogeneous people, have, in various ways and on various occasions, asserted their progressive tendencies, and have a religious faith in that most aggressive of all doctrines, "Manifest Destiny." Let me not, however, be understood to favor, in the slightest degree, an amalgamation of white and colored races. On the part of the white individual such a union could be attributed only to the grossest sensualism or an insane devotion to a favorite theory; and to their shame, be it said, such examples are too numerous. Though it cannot be denied that these unions are productive, and that the progeny are superior to the colored parents in intellectual capacity, in our country their social status is indissolubly bound to that of the inferior race, the ravings of fanatical theorists to the contrary notwithstanding.

While we have such convincing proofs of the degrading tendencies of close intermarriages, we are not without evidence that crossing with a different and healthy stock may serve successfully to reclaim descendants from vices of conformation. Dr. Guggenbuhl states that cretinism has disappeared from certain villages of the Tyrol, since French soldiers from the armies of the first Empire settled there and formed connections with families.

The importance of crossing has always been understood by intelligent breeders of domestic animals, and never was more highly appreciated than at the present time. Close breeding is sometimes

practiced to perfect a certain quality, but if this is persisted in, it is sure to result in the general decay and final extinction of the stock. It is stated by M. Chas. Aubé that, in artificial fish-ponds of about five acres, the carp bred from a single pair begin to degenerate after three years, unless reinforced from other waters, or better by changing the stock, and finally cease to be prolific. The same writer instances two setter dogs, perfect in their qualities, a male and female of the same litter. Their progeny degenerated and became extinct in the third generation.

Nor are we without analogical evidence from the vegetable kingdom. Enlightened agriculturists well know that the use of seed from their own crops successively produces deterioration in both quantity and quality, and they seek fresh supplies from distant quarters.

To return to the particular subject, necessity cannot be urged as an excuse for consanguinity in marriage, except among the poorer classes in small and isolated communities, and nowhere in our country. The obvious motive is simply a mercenary one, and very few are ignorant that some risk is incurred, even beyond the degrees sanctioned by our statutes. In this connection the admirable remarks of M. Devay are appropriate: "You wish your heirs to have a rank in society; but if they are only idiots and cretins, will they not be fatally fixed in the lowest rank of the social scale? You wish your posterity to be happy; but if you have only attenuated and sickly scions, what will they have before them but the threatening image of Death, an image before which all delights vanish?" The magnitude of the danger is, however, far from being realized by the mass of our people, and there is reason to believe that these mournful penalties of Nature's broken law are more common in this and other Protestant countries than in those where the authority of the Church of Rome exclusively prevails. It is evident that our people are not prepared for additional legislative restrictions on this subject; and in a country like ours, where each State would decide the question separately and perhaps differently, little could be expected from such an agency. The necessary and proper remedy is to enlighten the public mind, and as no other class understand this subject so well as medical men, the responsibility rests chiefly on them.

It is certainly to be hoped, that the interest lately manifested by the profession, respecting the effects of consanguinity in marriage will continue and strengthen, until by their influence and example the question shall have become popularized, when alone the mass of the people will understand its importance and bearings upon the economy of life.

Clinical and Hospital Record.

ART. VI.—MILITARY SURGERY:

Memoranda by T. G. RICHARDSON, M. D., *Professor of Anatomy, University of Louisiana.*

GUN-SHOT FRACTURE OF THE SKULL—REMARKABLE CASE OF RECOVERY.

MORE than six years ago, I took occasion, through the pages of the *North American Medico-Chirurgical Review*, to express what were then considered by many good surgeons rather heterodox opinions in regard to the treatment of certain varieties of fracture of the skull; and the general doctrine of non-interference, therein set forth, subjected me to the friendly censure of some whose positive teachings to the contrary have been heretofore received in this country as the rule of conduct in all such cases. My position during the late war as Assistant Medical Director and Medical Inspector of the Army of Tennessee, and, subsequently, by the courteous request of the Medical Officers in charge, as Consulting Surgeon to the great Jackson Hospital at Richmond, containing 2,500 beds, gave me unusual advantages for observation, and I am now prepared not only to reaffirm my former opinions, but, if need be, to substantiate them by reference to authorities whose decisions it would be difficult to controvert.

In the article referred to,* the following *Remarks* are appended to to the report of a case of compound fracture of the skull with depression of bone:

My object in reporting this case, and in mentioning the other two in connection with it, is to show, in the first place, that compound depressed fractures of the skull without symptoms of compression are not very rare, Mr. Erichsen to the contrary, notwithstanding; and, secondly, to furnish evidence in favor of modifying a generally received surgical dogma concerning their treatment. In regard to the latter question, if the reader will take the trouble to refer to the standard surgical works, published in this country and in Great Britain within the past half century, he will find that the trephine or the elevator is directed to be employed in all cases of compound fracture with depression, whether symptoms of compression exist or not. Take, for example, the recently published "System of Surgery," by Professor Gross, pronounced by Professor Simpson, of Edinburgh, to be the most complete treatise on surgery in the English language. The following is his language: "the proper treatment in

*See North Am. Med. Chir. Review, July, 1860.

compound fracture is to elevate the depressed bone and remove any loose or partially detached pieces, this plan being adopted whether there be any compression or not. The case being a compound one cannot be aggravated by operation, though it is not to be forgotten that this should be executed with the greatest care and gentleness." Mr. Erichsen is equally positive; and if we go back a few years to the great modern lights, such as Sir Astley Cooper and Mr. Abernethy, we find this same doctrine laid down as a law not to be questioned. Accustomed as the Anglo-Saxon race has been for so many centuries to obedience to law, departing from it only by slow degrees, as circumstances seem gradually to require, or breaking suddenly away from it only under the pressure of great emergencies, it is not strange that a doctrine backed up by such authority, and reaffirmed by nearly all subsequent teachers, should have all the force of an enactment of the Medes and Persians, which, we are told, altereth not. Now, with all due deference to the opinions and decrees of those who have established or perpetuated this rule, and without partaking in any manner whatever of the spirit or temper of the party who pleasantly style themselves "Young Physic," I am disposed to object to the wide range which has been given to this dogmatic precept. I have no objection to picking out pieces of bone which are completely detached from their connections with the dura mater and pericranium, or so nearly so that their little vitality must be inevitably lost in the subsequent reaction; nor would I hesitate to remove a jagged or splintered fragment that might be sticking through the dura mater into the brain; but I cannot understand the necessity of removing the bone simply because it is found resting upon the dura mater. To elevate it to its place, when this can be accomplished without further injury to the cranium, would be all right enough, but it is rarely feasible, the great majority of cases demanding for this purpose the use of the trephine.

If I understand the matter, the practice is grounded upon the fact that the depressed bone is necessarily a cause of irritation which will subsequently develop inflammation of the brain or its membranes, whether these structures be wounded or not. Upon this subject I have two suggestions to make.

In the first place, those who take this ground also advocate non-intervention in simple depressed fracture without symptoms of compression. Now if the depressed bone be a cause of inflammation of the encephalon in compound fracture, it is not less so in simple fracture. Indeed, this unfortunate result, according to these premises, would be more likely to occur in the latter than in the former, in consequence of the additional pressure exerted by the extravasated blood and the products of the subsequent inflammation of the subcutaneous structures. And this, I think, will be found to hold good in practice; that is to say, that inflammation of the brain and its membranes oftener occurs in simple fracture with depression than in compound, the same expectant treatment being employed in both.

Secondly, it is not true that pressure upon the brain induces inflammation of the organ, and in proof of this I need only refer to the fact that apoplectic effusions are seldom if ever followed by such an occurrence. The cause of inflammation of the brain after fracture I

conceive to be the bruising, laceration, or jarring to which the organ has been subjected; and if such be the fact, the removal of the depressed bone will in no degree serve to prevent this much-dreaded result, except in those cases in which the fragments have penetrated the dura mater. I might even go still further and state, as has been suggested to me by my distinguished colleague, Professor Stone, that it is not altogether improbable that the removal or elevation of the depressed bone, independently of the injury done by the trephine, may even contribute to the establishment of inflammation by permitting the entrance of a greater amount of blood into the bruised part when reäction takes place than could occur if the pressure were allowed to continue.

In regard to the statement made by many writers, that the use of the trephine does not in any manner complicate a case of compound depressed fracture, I would simply ask whether that exposure of the dura mater which is what they so much fear in simple fracture as to advise against the use of the trephine, is not largely increased by the application of the instrument in compound fracture, to say nothing of the further injury to the bone? It is true that in times long gone by, and it is to be hoped never to return, when a perfect mania for trepanning prevailed among surgeons, large portions of the cranium are said to have been removed with evident advantage to the patient;* but this by no means proves the innocuousness of the operation.

Lastly, I would state, without fear of contradiction, that the number of persons who recover after compound fracture with depression, in whom the trephine is not employed, is far greater than of those who have been subjected to the operation. Common observation proves this beyond any doubt; but as additional evidence, I would refer the reader to the statistics of Mr. Lawrie and Mr. King, in Cormack's *Monthly Journal*, 1844, where it will be found that of 77 cases reported of compound fracture, there were 29 cures and 48 deaths; 26 of these 77 cases were not trephined, and of these 18 were cured and 8 died; 51 of the 77 cases were trephined, and of these 11 were cured and 40 died.†

The only question that remains to be considered in this connection is, the liability to epilepsy after depressed fracture when the fragment of bone is allowed to remain in its unnatural position. The number of cases of epilepsy directly ascribable to this cause, compared with the total number of cases in which depressed bone is permitted to remain below the level of the surrounding surface, is acknowledged by all to be very small, and does not therefore usually enter into the discussion of the subject. But according to the views here enunciated concerning the propriety of using the trephine in the class of cases under consideration, the question becomes, in my opinion, of considerable importance. In the absence, however, of sufficient data, I am compelled to leave it for further investigation.

* It is mentioned, in John Bell's "Principles of Surgery," that Godifredus, chief surgeon to the States of Holland, was accustomed to boast that his friend Henry Chadborn, chirurgion, during King William's wars on Philip, Count of Nassau, trepanned the skull of the Count *twenty-seven* times, and substantiated the fact by the most indisputable authority, for he made the said Count of Nassau, after he was recovered, on the 12th of August 1664 write the following curious certificate: "I, the underwritten Philip, Count of Nassau, hereby declare and testify that Mr. Henry Chadborn did trepan me in the skull twenty-seven times, and after that did cure me well and soundly."

† Motte Velpeau.

As before stated, my recent army experience fully substantiates the conclusions here enunciated. Not only so, but I am now clearly convinced that, with few exceptions, the only cases of compound fracture of the cranium that demand the employment of instruments are those in which fragments of bone are entirely detached, the presence or absence of symptoms of compression having but little bearing upon the question. Although I have not preserved notes of the numerous cases that came under my observation, I can nevertheless state, that in not a single instance in which I saw the trephine or elevator employed, or used them myself, were the symptoms materially alleviated, or a fatal issue prevented. All the patients thus treated succumbed within a comparatively few days. On the other hand, I witnessed recoveries from some of the very worst forms of gun-shot fracture, in which no surgical interference whatever was permitted, save the application of cold-water dressings. Take the following remarkable case as an instance of the latter. I give it from memory; and while the dates, etc., may not be exactly correct the main points may be fully relied upon :

A. B., æt. 24, admitted into Jackson Hospital, June, 1864. The day previous, at the battle of Cold Harbor, he had been struck upon the head by a minie ball, which entered the left temporal bone just in front of the top of the ear, and passed out through the frontal bone, about half an inch to the left of the middle of the forehead. The differential appearances of the opening of entrance and exit commonly observed in penetrating wounds of the skull, were well marked; the former being almost circular, but little larger than the ball, and its edges strongly inverted; the latter quite large, irregular, and the bony and cutaneous edges everted and ragged. Cerebral substance, coagulated blood, and fragments of bone were also protruding from the latter. Further examination showed that two lines of fracture extended between the openings, one above and the other below, the latter involving the orbital process of the frontal bone, so that upon taking hold of the supra-orbital arch with the fingers and thumb the fragment, embracing about one-third of the frontal bone, could be readily moved in any direction to the distance of a fourth of one inch or more. The man reported that he had been stunned by the blow, but soon recovered his consciousness and walked to the rear. At the time of my visit, twenty-four hours after the accident, his intellect was not in the least disturbed, pulse and respiration good, no paralysis, no headache, the left eye closed by extrava-

sated blood and œdematous tumefaction. My attention was called to the mobility of the lower half of the frontal bone, upon the corresponding side, of which I fully satisfied myself by raising and depressing it with the fingers, and could plainly trace the line of the upper fracture in this way. No operation was thought advisable, not even the removal of the loose spiculæ of bone, but cloths wrung out of cold water were ordered to be kept constantly applied. Under this treatment the case progressed favorably ; the wounds suppurated freely, fragments of skull and an abundance of broken down brain substance were discharged, the swelling about the eye subsided, and at the end of a week or ten days I found the man sitting up reading a newspaper, and was told that he had not had an unfavorable symptom. In four weeks from the time of the injury, he left the hospital for his home in Georgia, the opening in front of the ear having entirely closed, and the one in the forehead very much contracted, and secreting but a small amount of healthy pus. The sight of the left eye was lost.

This, I acknowledge, is an extreme case, and is described rather as a surgical curiosity than as possessing any very great practical value. Nevertheless, it forcibly illustrates the remarkable power which unaided nature sometimes exhibits to resist the most serious injuries to vital organs, and stands in striking contrast to the fatal results so often witnessed after apparently trifling accidents.

To return then to the treatment of compound, and more especially of gun-shot fractures of the skull, I repeat that in the vast majority of cases the only operative procedure that seems to me justifiable, is the removal of loose foreign substances, such as balls, portions of hat or cap, and fragments of bone when these can be reached without penetrating too far into the cavity. To effect this it may sometimes be necessary to saw off a projecting angle either with the trephine or Hey's saw. What I insist upon is, that these instruments, together with the elevator, should not be used, simply because there is depressed bone, or even when the depression is attended with symptoms of compression of the brain. Cold water, applied by means of the drip or cloths constantly wetted, until the period of active inflammation is passed, will accomplish all that lies in the surgeon's power. Subsequent results, such as necrosis of bone, epilepsy, etc., are of course not here taken into consideration, and are not sufficiently frequent to govern the primary management.

In thus restating my opinion in regard to the treatment of these cases, my special object is not to prove that I was right six years ago. If it had been so, I should have presented a long line of statistics upon which it is so much the custom now-a-days to rest the settlement of a question of this kind. My true desire is simply to record the results of close and repeated observations made at the bedside of the wounded. I admit the value in these cases of carefully prepared statistics, when these are made up of the reports of gentlemen whose names are given, and who are known to be competent observers; but I submit whether such reports as are now being issued from the Surgeon-General's office at Washington (made up as they are of the monthly reports of hundreds of inexperienced and incompetent medical officers), deserve to be received as possessing any value whatever, when their figures are brought to bear upon a question of so much importance. According to these reports the expectant treatment of gun-shot fractures of the skull was less successful than the operative; the former giving a mortality of nearly 80 per cent., and the latter only about 55 per cent. But these figures avail nothing when brought into competition with the direct observations of such men as Seutin, Stromeyer, Macleod, Guthrie, and a host of others who have in recent years enriched military surgery by their contributions.

Gun-shot Wounds of the Knee-Joint.—Of these melancholy cases I have seen a great many during the past four years; and during the spring and summer of 1864, I was privy to the treatment of eighteen or twenty such, which were brought to Jackson Hospital, no operation having been performed upon the field. In most of these cases the proper time for amputation had passed when they were admitted, and but few of them, therefore, were subjected to this procedure. Suffice it to say, however, that during my whole experience in the army, I did not witness a single recovery without amputation from unmistakable gun-shot wound of the knee-joint, with injury, however slight, to the femur or tibia. In some of the cases, where amputation was considered unadvisable, I laid the joint freely open, and in one or two, in addition to this measure, I injected the joint thoroughly with tincture of iodine, but with no material benefit. In one case only did I resort to excision. The patient, under the assidious and intelligent care of Assistant-Surgeon T. Chacheré, M. D., did well for two or three weeks, and there was a fair prospect for his recovery; but abscesses in the limb below made their

appearance, and the general health beginning to decline, amputation was performed, and he died from dysentery and general wasting of the vital powers about three months after the operation.

In one other case, which occurred at the battle of Kingston, North Carolina, I dissected out the patella which was comminuted, the femur and tibia being uninjured. The operation was performed six hours after the receiving of the injury, and the patient sent immediately by railroad to Raleigh, a distance of one hundred miles, where I saw him in hospital four weeks afterwards, doing very well. I have reason to believe that this man recovered with an anchylosed knee.

ART. VII.—VESICO-VAGINAL FISTULE:

By NATHAN BOZEMAN, M.D., *of New York (late of Montgomery, Alabama).*

A CASE OF VESICO-VAGINAL FISTULE, SITUATED IN THE TRIGONUS VESICÆ, AND COMPLICATED WITH ALMOST COMPLETE ADHESION OF THE VAGINAL WALLS ABOVE; CURED WITH THE BUTTON SUTURE; SUBSEQUENT PREGNANCY; ABORTION THOUGHT ADVISABLE, AND RECOMMENDED AT THE END OF THREE MONTHS.

WHILE residing in New Orleans, in 1860, I was, for the first time, consulted by Mrs. B., of that city, in regard to her case. She was about twenty-five years of age, a little under medium stature, rather stout, and of good form. She stated that she was confined with her first child about four months before, was in labor four days, and was attended by her family physician, who had to use instruments to effect delivery. About twenty-four hours after the birth of the child, she first noticed dribbling of urine, and was unable to pass it in the natural way. A high degree of inflammation, accompanied with inability to use the lower extremities, attacked the vagina. This disability of her limbs lasted about two months, after which she gradually regained their use.

Examination.—I found a considerable degree of inflammation and

excessive sensibility of what appeared to remain of the vagina, it being not more than two inches in depth.

The fistulous opening was situated just above the root of the urethra, was slightly inclined to the right side, oval in shape, with unyielding edges, and scarcely large enough to admit the point of the little finger. Above the fistule, the opposing walls of the vagina had fallen together, and were almost completely adherent, there remaining only a very narrow passage upon the left side leading in the direction of the os uteri. This condition of the vagina occasioned immobility of the edges of the fistule.

Treatment.—This was commenced by separating the walls of the vagina, which process required careful and extensive dissections, and the daily introduction of tents. This procedure was excessively tedious, and much time was consumed in dilating and bringing the parts into a suitable condition for the final operation. There was a continual tendency of the parts to return to their former state, and the greatest care and attention was demanded in order to accomplish the dilating process.

The preparatory treatment, with several unavoidable interruptions, was continued until January, 1862, at which time I made an attempt to close the fistule, being assisted in the operation by Drs. Benedict, Holliday, Faget, and Bell. I encountered great difficulty in effecting approximation of its edges, especially at the angle on the right side. The operation, upon the whole, was unsatisfactory, owing to the indurated and unyielding nature of the parts. Soon after the operation was completed a slight hæmorrhage took place, which gradually increased and resisted all efforts to control it. The patient finally becoming somewhat exhausted from loss of blood, I was forced to remove, with the assistance of Dr. Faget, the suture apparatus on the fourth day, and no further trouble arose from this cause. The operation, however, resulted in a failure.

Being dissatisfied with the condition of the parts in the above operation, I determined to renew my preparatory treatment, and to carry my dissections and dilatation to a greater extent, with the hope of securing more elasticity, or mobility of the parts, immediately concerned in the closure of the fistule. After a long period of time, I succeeded in the undertaking, and there now appeared no obstacle in the way of effecting perfect coäptation of its edges. Before, however, I could take advantage of this favorable condition of the parts, in order to perform the operation, circumstances rendered it

necessary for me to relinquish, for the time, the management of my patient, and with this interruption, preparatory treatment, thus far so satisfactory, was discontinued.

In May, 1863, more than a year subsequent to the above-mentioned interruption in the treatment, my patient visited me at Wetumpka, Alabama, for the purpose of having a cure in her case completed. Upon examination, at this period, I found that all advantages gained by the former treatment had been lost, and it was necessary to recommence the preliminary step of the operation.

I began at this time, by making more extensive dissections of the adherent vaginal walls than on the previous occasion, and in the procedure, I encountered very considerable hæmorrhage. The latter, however, was controlled without much difficulty by pressure and plugging the vagina. Dilatation to the utmost extent of the canal was now instituted, and being kept up until the part entirely healed over, there was no tendency to recontraction. In this manner, I secured a degree of mobility far exceeding that gained in previous efforts. A second operation, therefore, for closure of the fistulous opening was now considered advisable. The operation was performed on the 7th day of August, in the presence of Drs. Harris, Lightfoot, Mason, and Williams. I introduced at this time four sutures, and used a button, somewhat sigmoid in shape, and well adapted to the parts. The after-treatment, suffice it to say, was satisfactory. The suture apparatus was removed on the eighth day, the cure was found complete, and in a few days the patient was allowed to leave her bed. At first there was slight incontinence of urine, but this passed off in a few weeks. Her general health now improved rapidly, and this unfortunate woman was restored to the enjoyment of life and society.

About one year after her cure, while residing in Mobile, Alabama, she became pregnant, and being anxious about the consequences of another labor, she consulted my distinguished friend, Dr. J. C. Nott, of that city, who at once communicated with me upon the subject. As well as I recollect, he was applied to about the end of the third month of gestation.

In view of the extensive cicatricial condition of the parts, and the danger of a recurrence of a fistule, and even greater injury of the parts, and perhaps the loss of life, consequent upon the labor at full term, I gave it as my opinion, that it would not be advisable or safe to allow gestation to go on to its natural termination, and that

it would be proper to affect abortion for the purpose of saving the patient from such risks. Dr. Nott, after making a thorough exploration of the condition of the parts, wrote me that he fully corroborated my view of the case, and that he had effected abortion without difficulty.

A few months ago, while on a visit to New Orleans, I saw this lady, and she stated that she never enjoyed better health in her life, and had no trouble whatever from her old injury. I advised her again, as I did when I discharged her, that in case of pregnancy it would always be best for her to consult a physician who could form a pretty correct opinion, from seeing the condition of the parts, as to whether it would be proper or not to allow it to go on to full term. It may be, in the course of time, that the vagina will lose, to a very considerable extent, its cicatricial character, and become sufficiently capacious and dilatable to warrant the belief that a living child could be born without risk to the integrity of this organ.

Remarks.—This case cannot be regarded in any other light than a most interesting one, and presenting certain peculiarities in the treatment as well as results that render it highly deserving of a place upon record; and its study cannot fail, I conceive, to be of the greatest importance to the inexperienced operator, who may chance to meet with a similar case in practice. First, the extensive sloughing of the vaginal walls, resulting in their almost complete coarctation; secondly, the extensive dissections that were required to overcome this condition before the fistulous opening could be even approached with a view to closure; thirdly, the length of time taken to complete the cure, thus affording another illustration of the great endurance and determination usually evinced by this class of patients, and the equally important and necessary perseverance of the surgeon to succeed under such apparently insurmountable difficulties; and fourthly, the pregnancy occurring a year after the cure, and the course thought advisable and recommended under the circumstances.

ART. VIII.—ANEURISM OF POPLITEAL ARTERY:

Cure effected in a few hours by mechanical compression; operation by ARMAND MERCIER, D. M. P., *New Orleans La.; observation by* EDW. CAIRE, M. D., *City Physician.*

MRS. B., washer and ironer, aged forty-five, has resided in this country for seven years, has always enjoyed good health, with the exception of an attack of yellow fever in 1856; and an attack of rheumatism a short while after her arrival in this country, an attack which lasted four months and has never returned. About a year ago, whilst hanging up some lace to dry, Mrs. B., had a fall; she fell on her back from a height of about three feet, and having lost consciousness for a few minutes, she does not know whether she struck her knee or not in her fall; two weeks after the accident, having, whilst walking, felt some pain in the popliteal space, she examined the part, and noticed a redness and an unaccustomed hardness; thinking it was a new attack of rheumatism, she rubbed the part with brandy, salt, camphor, etc.; but there had formed in the popliteal space a round tumor, which kept increasing in spite of the frictions, and had reached in a few months the size of a big turkey's egg; the pain also had increased, but it was felt only when walking; the sensation felt then is compared to the one that would be produced by a stick strongly attached to the leg and preventing all bending of the knee.

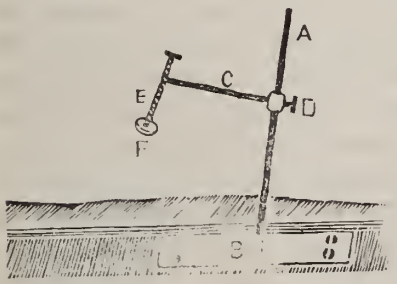
About a month ago, Doctor Jannequin was called upon by Mrs. B., and recognized an aneurism of the popliteal artery. Thinking that a ligature would probably be necessary, he requested a consultation with Doctor Mercier. It was decided that before undertaking such a serious operation, compression should be tried; and in order to prepare the patient, she was submitted to a course of purgatives, and of digitalis. One quarter of a grain of powder of digitalis was at first administered morning and evening; in a few days it was carried to three and a half grains per day. The pulse which on beginning the treatment beat eighty times per minute, gave only sixty pulsations after three weeks' treatment. Several times the use of digitalis had to be suspended on account of some gastric trouble; it would then be taken up again, beginning with half a grain, morning and evening, and low diet was preseribed. Yet five or six days

before entering the hospital, the patient interrupted all treatment, and merely submitted herself to greater rest.

Saturday, August 24.—The patient entered the Circus Street Hospital to-day; the aneurismal tumor offers pulsations which are felt very distinctly and are strong enough to raise the fingers applied to it. Pulse at 76. A saline purgative is prescribed for the evening.

In order to remedy the want of persons who would have been necessary to perform a digital compression, which it was supposed would require an expenditure of time, and annoyance to assistants, Doctor Mercier thought of having a new compressor made. Having observed that all instruments heretofore constructed took their resting point on the patient himself, and that, however wide that resting point could be made, the instrument could not be borne on account of the pain it gave, it became necessary to obviate that inconvenience, and have made an instrument, which, taking its resting point altogether independent of the patient, would, as much as possible, take the place of the thumb.

To that effect, Mr. Dufilho, manufacturer of surgical instruments, in New Orleans, made an apparatus of which we here give a sketch and short description:



"A" is an iron rod 29 inches long, 5 lines in diameter; "B" a square plate 4 inches wide, $1\frac{3}{4}$ inch high with 4 screws to make it fast to the outside of the bed; "C," a second rod 20 inches long, 5 lines in diameter, which by means of the screw "D" can be moved up and down on "A;" E is a screw $5\frac{1}{2}$ inches long, 4 lines diameter, slightly inclined and terminated by a sort of pincushion, having exactly the shape of a big thumb.

The advantages claimed for this compressor are: Firstly, that it can be supported by the patients with very little pain for several hours in succession; secondly, it requires so few persons for the operation, the same attendant being able to remain alongside of the patient, having merely to watch the instrument and readjust it should it get out of place. On the other hand, it requires on the part of the patient almost perfect rest; but should he want to move, the attendant has merely to apply his thumb immediately above the cushion,

and make digital compression for ten or fifteen minutes, after which mechanical compression is resumed.

Sunday, 25.—The patient slept well last night; compression was begun at a quarter past twelve; the tumor measured then 14½ inches in circumference above the patella, 4 inches along the axis of the limb, and 5 inches in its greatest transverse diameter. The cushion was applied at the crural arch; the aneurismal sack was surrounded with lint dipped in a solution of ⅓ of perchloride of iron to ⅔ of water; two bladders full of ice were applied, one to the tumor, the other to the inside of the thigh.

7½ *o'clock*, *P. M.*—The patient underwent the compression perfectly well; whether she moved a little, or rather that the mattress flattened under her, the cushion had to be fixed several times. The cushion, entirely taken off, the tumor was carefully examined and did not present the least pulsation. It was noticed just before taking the cushion off, that compression was not perfect; pulsations were felt, but very faint, it is true, in the space of an inch and a half below the cushion; the aneurismal sack itself presented a remarkable hardness in its whole extent.

At 10 o'clock, P. M., no pulsations at all; mechanical compression was continued through the night; twice, for about 15 minutes each time, it was replaced by digital compression. After 5 o'clock, A. M., the cushion could not be applied any more, on account of the pain occasioned by its resting on some engorged ganglions—ganglions which, however we must add, were engorged long before the operation. The cushion had to be applied an inch lower down, which rendered more difficult the complete interruption of circulation; the cushion left behind it merely a red spot which disappeared in less than two hours; the skin was perfectly natural. Towards 6 o'clock A. M., the patient slept for a quarter of an hour. The foot and lower part of the leg had felt somewhat cold during the evening and night, but the internal collateral artery distinctly felt near the patella increased in size tolerably fast; and "pari passu" with this increase, the natural heat returned to the limb. No food of any sort has been taken.

Monday, 26.—At 7, A. M., the instrument was entirely taken off; the aneurismal sack, not quite as hard as yesterday, but not the least pulsation felt; the patient was enjoined to keep the limb perfectly still. The instrument was applied again from 2 to 3 o'clock; the patient complained of some pain around the knee; and there being

some slight inflammation, one of the bladders of ice was taken off; the other was removed at 8, P. M. The internal collateral artery, the size of which had still increased, was perfectly felt from the condyle of the femur to the tuberosity of the tibia. Half a cup of tea was allowed at night.

Tuesday, 27.—Pains around the knee entirely gone, since the removal of the ice; during the day the perchloride was removed; no pulsations; a cup of tea morning and evening, a cup of beef-tea during the day; there was some slight engorgement of the cellular tissue around the knee, but as no unnatural heat was felt, nothing was done.

Wednesday 28.—Same condition; the tumor measured this morning $14\frac{1}{2}$ inches in circumference, and $3\frac{1}{4}$ inches in its longitudinal diameter.

Thursday 29.—Nothing new; Mrs. B., with a patience really remarkable, has kept her leg in nearly the same position.

Friday 30.—This morning Mrs. B., raised her leg and fixed it herself on a pillow; the tumor measures to-day 14 inches in circumferance and $2\frac{1}{2}$ inches longitudinally. The patient is advised to stretch her leg slowly and by degrees.

Sunday, Sept. 1.—The patient got up to-day and walked in her room. No pulsation whatever felt in the tumor.

Monday 2.—The patient left the Circus Street Hospital at 2 o'clock to-day.

Mrs. B., seen several years after the operation, was then perfectly free of all pains, walked without any difficulty; the tumor had been entirely absorbed.

Art. IX.—SURGICAL NOTES OF THE LATE WAR:

By A. J. Semmes, M. D., *of New Orleans.*

THE following crude and unaltered notes of a few cases are extracted from memoranda of the writer, prepared in the year 1863, when he was assigned temporarily the duty in the military department of Virginia, as an hospital surgeon and inspector of hospitals.

Many of these cases were admitted into the General Military Hospital at Camp Winder (Surgeon A. G. Lane in charge), near Richmond, Virginia, immediately after the disastrous defeat of the Federal forces, at Chancellorsville; reports of some of the most interesting cases were published two years ago in the *London Lancet*, and no notice of which will therefore be taken in this paper. These and other cases were principally in the divisions of the hospital, under the immediate charge of Surgeons Henderson and Bratton, and their assistants, gentlemen of zeal and patriotism in the discharge of their duties, and of acknowledged professional skill and culture.

I.—SHELL WOUND OF BOTH HANDS; COMMINUTION AND FRACTURE OF CARPAL BONES; AMPUTATION.

Private J. J. B., 4th Regiment, N. C. Infantry, aged thirty years, sanguine temperament; wounded at Chancellorsville, May 3rd, 1863; admitted to Winder Hospital, May 16th, 1863; previous health was good, habits temperate and regular. The injury was caused by a fragment of shell which comminuted the first row of carpal bones of the right arm, fracturing the styloid process, with extensive laceration of the soft parts; in addition to which, in consequence of a second wound, there was a laceration of the soft parts, with exposure of the fifth metacarpal bone of the left hand. On admission to this hospital, on the afternoon of the 10th of May, after a tedious and uncomfortable railway transportation, the patient was laboring under great nervous depression; the wound ill-looking; the pulse small and frequent; countenance pale and anxious, with general exhaustion. Stimulants, with nutritious diet, were ordered, and at bed-time half a grain of the sulphate of morphia was administered to procure rest and allay irritation.

May 12, 1863.—Amputation of the right arm (flap method) was practised at the lower third, and water dressings of a moderate temperature were applied, with a full opiate at bed time; diet nourishing.

May 15, 1863.—The patient has rested well, and is progressing rapidly: almost one-half of the flap uniting by the first intention. The patient is allowed generous diet, with occasional stimulation.

June 1, 1863.—The patient is convalescing well, and is preparing to go home on furlough. Up to the time of the close of this report the patient is reported well.

II.—GUN-SHOT FRACTURE OF THE CRANIUM; ABSCESS OF THE BRAIN; DEATH.

Private R. A. L., 14th Regiment, N. C. Infantry, wounded at Chancellorsville, May 3, 1863; admitted to Winder Hospital, under the care of Surgeon Henderson, May 10, 1863. The wound extends over the anterior and posterior border of the right parietal bone. On examination, a fracture was discovered extending antero-posteriously about one inch, and in an opposite direction about half an inch. There is no febrile excitement, cerebral disturbance, or other unpleasant symptoms.

May 14, 1863.—Fever, with slight delirium; pulse full and quick; cold applications to the head were directed, and an ounce of the sulphate of magnesia was administered.

May 15, 1863.—Febrile symptoms have abated, and delirium has ceased; pupil of the eye normal; complains, however, of periodical cephalalgia; cold applications to the head were continued; a light and nutritious diet was allowed.

May 27, 1863.—Symptoms of compression of the brain are manifesting; the pupils of the right eye is dilated, and that of the left is contracted; pulse frequent; respiration stertorous and irregular; convulsive action of the left side; involuntary action of the sphincter ani, with fœcal discharge.

May 28, 1863—Paralysis of the left side; pulse 130; the dressings were removed, and the tissues were dissected to the bone; the pericranium and dura mater were detached from the bone, for some distance around the seat of the fracture; the fragment was elevated and removed; after the removal of the fragment of bone the dura-mater protruded through the opening, which was small. At the posterior border of the wound, a small piece of a minie ball was discovered, which was imbedded in the membrane. There was no pulsation of the brain, which was visible or appreciable; but fluctuation could be distinctly recognized beneath the dura mater, which was punctured, thereby evacuating about an ounce of thick creamy pus. No relief was afforded by the operation, the patient dying about an hour afterwards.

The autopsy revealed an abscess opposite the seat of the wound, about an inch distant, in the substance of the brain.

III.—COMPOUND GUN-SHOT FRACTURE OF THE TIBIA AND FIBULA; SMITH'S ANTERIOR SPLINT APPLIED; RECOVERY.

Private J. W. B., 1st Regiment, N. C. Infantry; wounded May 3,

1863, at Chancellorsville; admitted to Winder Hospital, May 10, 1863. The ball entering the posterior of the right leg, emerged in front and fractured the tibia and fibula. After the removal of a considerable number of spiculæ of bone, Smith's anterior splint was applied, with great relief to the patient; water of a temperature agreeable to the feelings of the patient kept constantly applied to the dressings.

May 12, 1863.—The patient's general health is good; rests well at night; good diet, with moderate use of stimulants.

May 20, 1863.—The wound presents a healthy appearance, and is healing rapidly.

June 1, 1863.—Up to the time of closing this report, there is every prospect of a rapid and complete recovery, as the patient is preparing to leave for his home.

The use of the anterior splint, first introduced to the profession by Professor Nathan R. Smith, of Baltimore, when properly adjusted, has been uniformly successful in the treatment of gun-shot fractures in the military hospitals of the late Confederate States; and I think that the experience of every military surgeon will verify my statement, that it is a great and beneficent improvement, giving great relief to the patient, enabling him to change his position and affording every facility for renewing the dressings and cleansing the wound without disarranging the fractured bones.

IV.—GUN-SHOT WOUND OF THE FOOT; INJURY OF THE TARSO-METATARSAL ARTICULATION; AMPUTATION; RECOVERY.

Private S. L., 22d regiment, N. C. infantry, wounded May 3, 1863; admitted to hospital of the 3rd division, May 10, 1863, aged 21 years; phlegmatic temperament; by occupation, before enlistment, a farmer. The ball entered the palmar surface, below the anterior extremities of the third and fourth metatarsal bones of the left foot, passing upwards and backwards, and was deeply imbedded in the tissues on the external and inferior surface of the astragalus, injuring the bones in its tract. This patient was under the special care of Dr. Henderson. On admission to hospital, there was an extensive slough on the dorsum of the foot; and the inflammation was traveling rapidly to the ankle joint, leading to its destruction.

May 25, 1863.—The constitutional powers failing from pain and nervous irritation amputations with circular flap in the lower third of the leg was resorted to—*water dressings.*

May 29, 1863.—Condition of patient is improved; appetite good; stump doing well; *nutritious diet, with moderate stimulation.*

May 30.—Patient regaining strength; stump healing rapidly.

June 4, 1863.—Convalescence rapid; and at the closure of this report, patient expecting to leave for his home.

V.—GUN-SHOT WOUND OF THE CHEST; PNEUMONIA; RECOVERY.

Private J. S. P., 23d regiment, N. C. infantry, was wounded May 3, 1863, at Chancellorsville; admitted to hospital of 3d division under treatment of Surgeon Henderson, May 10, 1863. The injury was caused by a minie ball, which, entering in front near the inferior border of the pectoralis major muscle of the left side, and passing along the ribs for five or six inches distance, penetrated and made its exit behind.

On admission to hospital the patient experienced little or no pain, and there were no indications of injury to the thoracic viscera, and the wound presented a healthy appearance.

May 13, 1863.—Patient is confined to his bed, and suffers considerable pain and dyspnœa; pulse accelerated; some preternatural heat of skin; urine high colored. On a physical exploration of the chest, crepitation was detected, with some dullness on percussion; *dry cupping over the seat of pain* was ordered with the internal use of *mild chloride of mercury,* and *compound powder of ipecacunaha and opium; counter-irritants and derivatives from time to time, with a nutritious diet.*

May 19.—Respiration becoming more labored, and he has remained in the sitting posture for the last 48 hours; *half an ounce of the syrup of morphia* was directed at bed time: *gum water.*

May 20.—Patient improving; more resonance over the lung; moist sounds on auscultation; *syrup of morphia and tolu, with nutritious diet.*

May 30, 1863.—Patient rapidly convalescing; is relieved from all pectoral trouble; comfortable; wound is healing kindly, and patient is preparing to leave for his home. Up to the close of the report, the patient had nearly recovered.

VI.—GUN SHOT WOUND OF THE THIGH; LIGATURE OF THE FEMORAL ARTERY; EXTENSIVE CHARACTER OF THE WOUND; DEATH FROM PYEMIA.

Private A. S., 37th Regiment, N. C. infantry, aged 33 years, of a bilio-sanguine temperament; robust constitution; a farmer before enlistment; wounded May 3, 1863, at the battle of Chancellorsville; was admitted to the hospital of the 4th Division, Camp Winder, under the special charge and treatment of Surgeon Bratton, C. S. A.

This case may derive some interest from the extensive character of the injury. A fragment of shell, one and a half inches in diameter, with ragged and irregular edges, entered the right thigh, passing spirally upwards and inwards, under the superficial layer of muscles, lacerating the femoral artery, in its course, at the lower border of the middle third, and made its exit in the perineum. A second fragment of shell entered the same limb at the same spot, but, passing transversely over the limb, extensively lacerated the soft parts, and escaped from the inner surface of the same.

This man is of robust constitution and bilio-sanguine temperament, and on the night of his admission to the hospital, seven days after the reception of the wound, secondary hæmorrhage occurred; the femoral artery was ligated at its middle third, and the usual dressings were applied; *an opiate at bed time was ordered.*

May 12, 1863.—Patient has rested well; complains of no pain. The natural temperature of the limb is restored.

May 15, 1863.—The patient is improving in health; appetite good; *nutritious diet; moderate stimulation.*

May 16, 1863.—The case is progressing favorably, and for the twelve days he was doing well, the wound cleaning off finely, and presenting a healthy granulating surface.

June 1, 1863.—The patient has experienced distinct rigors, followed by fever, with cerebral, pulmonary and intestinal derangements—presenting all the indications of pyemia.

June 5, 1863.—Death.

VII.—GUN-SHOT WOUND OF GLUTEAL REGION, AND OF THE URETHRA; RECOVERY WITHOUT UNPLEASANT CONSEQUENCES.

Private W. McC., 22d Regiment, N. C. infantry; wounded May 3, 1863; admitted to hospital May 10, 1863. The ball entered the left nates and passed through the urethra, in an oblique direction, in front of the pubic bone. The patient suffers considerable pain during micturition. The urine, when voided, passing out at the orifice of the wound and the urethral canal. As soon as the sloughing had ceased, and the process of reparation had commenced, a gum elastic catheter was introduced and retained.

May 16.—Doing well; good diet, and an occasional dose of morphia.

May 29, 1863.—Patient at this time has no pain and is in a most promising condition.

June 1, 1863.—Patient rapidly convalescing, and is on the eve of departure for his home.

VIII.—GUN-SHOT WOUND OF THE CHEST; BALL PASSING THROUGH BOTH SCAPULÆ TRANSVERSELY; RECOVERY.

Private M. M. J., 11th regiment, Alabama infantry, aged 19 years; bilious temperament; wounded May 3, 1863, at Chancellorsville; admitted May 10, 1863. The ball entered near the posterior border of the left scapula, opposite the spine of the same, and made its exit in front of the anterior border of the right scapula, near its inferior angle. The patient states that for three days after the reception of the injury and prior to his admission to this hospital, the sputa were tinged with blood.

May 25, 1863.—Experienced a fit of violent coughing last night, and one of the attendants states that air was heard to escape from the wound near the left scapula. Auscultation revealed crepitation, and occasionally a mucous râle over the base of both lungs, but more extensively over the base of the right lung.

On forcible expiration, with the spontaneous closure of the mouth and nostrils, the air would escape, with noise, from the orifice of the wound.

The patient's health is good, and he would suffer but little, were it not for a severe neuralgia of the right side of the face. Nutritious diet, with anodynes and stimulants.

May 28, 1863.—Patient rapidly convalescing; respiration normal; resonance clear.

June 1, 1863.—The patient was doing remarkably well up to the time of the close of this report, and was on the eve of departing for his home.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

ART. I.—*On Chronic Urethral Discharges:* By W. H. VAN BUREN, M. D., Professor of Anatomy, etc., etc.

IN a very large majority of the cases applying for relief with chronic discharge from the urethra, commonly known as gleet, we find that this discharge is merely a symptom of a more serious disease, viz. stricture of the urethra. Hence the clinical rule so commonly enforced by good surgical authorities: in all cases of long standing urethral discharge, examine the patient for stricture. The reasons for this rule are obvious. The more essential consequences of contraction of the calibre of the urethra, viz. a diminished volume of the stream of urine, and the necessity of a longer time and more effort to empty the bladder, are not present in the earlier stages of the disease, which is notoriously insidious in its progress; and they always advance so slowly as not to attract the attention of the patient until the stricture has already existed for some months—often for years. Hence he frequently has no knowledge of its existence until it is ascertained by a surgical examination; complaining only of the more obvious symptom, the gleety discharge.

The nature and amount of this discharge vary so greatly in different cases that no evidence of the presence or absence of stricture can be gathered from its examination. It may be profuse and purulent in character, as when furnished by a false passage which complicates the stricture. It may be transparent and scanty, or variable in quantity and color from irregularities in diet and drink; or apparently absent entirely as a discharge, and only visible in the shape of yellowish-white filaments floating in the urine after it is voided, washed out and rolled into shreds by the stream as it passes through the canal. I have often examined these minute floating particles under the microscope; they consist of pus corpuscles enveloped in mucus, rolled into thread-like masses by the friction of the urine against the urethra. Besides these microscopical elements we find also in the discharge of gleet the debris of the different varieties of epithelium from the urethra, the ducts of Cowper's glands, the ducts of the prostrate and ejaculatory canals, and occasionally casts from the cæcal pouches or follicles of the prostate itself.

The discharge is furnished not only from the altered surfaces of the urethra which correspond with the stricture, but often from the inflamed membrane lining the dilatation of the canal which always exists, in a greater or less degree, immediately behind the stricture. Finally, discharge, in any of these varieties, may exist where no stricture whatever can be detected on the most careful instrumental examination.

And now let us consider the best mode of examining the urethra, in a case of gleet, to detect the existence of a stricture, if present; for this purpose you require a flexible bougie with a bulbous expansion at its extremity. It is of French manufacture, and known as the *bougie à boule.* It is made of different sizes, ranging from No. 1 to 14 of our scale. Notice that its somewhat olive-shaped extremity is conical, tapering to a rounded point, with a more abrupt bevel at its shoulder. You select the largest of these bougies which the orifice of the patient's urethra will admit, and introducing it with extreme gentleness, push it very slowly along the canal into the bladder. If it should be arrested, make very gentle pressure against the obstacle for three or four minutes, endeavoring at the same time to distract the patient's attention by a question or two, reassuring him if the instrument causes pain, and it will thus glide onwards, if the obstruction is due to spasmodic contraction of the muscular fibres which surround the canal. If it does not free the obstacle by this manipulation you have probably encountered a stricture, and, by substituting a smaller bougie, and if necessary still another yet smaller, always employing the same extreme gentleness, you will finally pass the stricture. Then, in withdrawing the bougie, by marking the point on its shaft when its shoulder again encounters the obstruction, you will be able to form a judgment as to its length. So that by this mode of examination you will have made a diagnosis: 1st, of the existence of stricture; 2d, of its distance from the orifice; 3d, of its degree of tightness; 4th, as to its sensibility.

I know of no better mode of examining for stricture than this, under these circumstances.

Having thus established a diagnosis, the case is no longer a simple gleet, but a case of stricture; and the appropriate treatment for stricture, of which we will speak hereafter, will afford the best chance of cure for the gleet. For a stricture thus detected for the first time, treatment by dilatation, by means of bougies and steel sounds, will be in the great majority of cases, if properly carried out, entirely competent for a cure. And when the stricture has disappeared by the use of these means, I can state to you, as our clinical experience, that the gleet will also have been cured. As the rule, this is true; but unfortunately, there are not unfrequent exceptions to this rule. I say unfortuuately, after due consideration; inasmuch as these exceptional cases of gleet dependent upon stricture, in which the discharge still persists after the stricture has been entirely removed by proper treatment, are notoriously difficult to cure, and constitute a class of cases very troublesome to both patient and surgeon.

The remedies usually employed, after the use of bougies has failed, are local and constitutional. Amongst the former are injections of sulphate of copper, chloride of zinc, and nitrate of silver; bougies smeared with Guthrie's ointment; blisters to the penis or perinæum. Under the latter head, tincture of sesquichloride of iron, tincture of cantharides, cod-liver-oil, sea-bathing etc. etc. These remedies are applied empirically in consequence of our limited knowledge of the morbid anatomy of the urethral mucous mem-

brane, and the imperfection of the means hitherto employed for its exploration. Hence the unsatisfactory results which so often follow the usual modes of treatment.

When we consider the length and narrowness of the canal lined by this membrane, and its numerous extensions into the ducts of the various glands which pour their secretions into the common outlet, and the complexity of its connexions and sympathies, it is sufficiently obvious why it is so difficult a task to fix the seat and cause of a chronic discharge from the urethra. We require better means of exploring the canal; and it is by improvement in this direction that more accurate physical diagnosis and more successful means of treatment are to be attained. What the application of percussion and auscultation has accomplished in improving our knowledge of diseases of the chest; what the invention of the ophthalmoscope, and the laryngoscope, and the speculum, has effected in disease of the eye, the larynx, the vagina, and uterus, we want applied to the urethra. Before Recamier's invention of the speculum uteri a vaginal discharge conveyed to the mind of the physician as uncertain and obscure an idea of the lesion which gave rise to it, as a chronic urethral discharge does at the present time. To-day it requires but moderate skill to determine by the use of the speculum whether the cause of the discharge lies in the walls of the vagina, the neck of the uterus, its cavity, or the cavity of the uterus itself. Many years ago Segalas of Paris, stimulated by Recamier's success, attempted, but in vain, to illuminate the depths of the urethra through a speculum. More recently Desormeaux, a colleague of Civiale at the Necker hospital, acting upon a suggestion of the famous Fresnel, of lighthouse celebrity, as to the management of the light, has perfected an instrument, after some years of study and labor, which promises to be more successful. Through the kindness of Dr. Desormeaux, I enjoyed an opportunity of examining its construction and mode of application in a number of cases last summer. I am satisfied that it is a legitimate addition to our means of exploring the urethra, and that it promises to rank with the ophthalmoscope and laryngoscope. Like these it requires tact and familiarity with its use before it can be adapted to the daily wants of practice; but so also do the finger and the ear before they are useful in practising the touch or auscultation.

The instrument somewhat resembles a dark-lantern, in which the light is collected by means of lenses into a pencil which, falling upon an inclined mirror, is projected through a hollow tube introduced into the urethra, and illuminates an area of the surface of its lining membrane equal to the diameter of the open extremity of the tube. As the tube is slowly withdrawn the whole length of the urethra may be thus brought under inspection.

The tube introduced separately into the urethra, has its open extremity filled by a wooden plug attached to a stilet. This is withdrawn, and the lantern is afterwards readily attached to its slightly expanded external opening, when the instrument is ready for use. The tube is of polished metal, blackened within to prevent reflection, and the largest size employed is about number 13 of our scale.

For inspecting the cavity of the bladder a catheter is employed,

with a short sharp curve like that of a lithotrite, and an oval glass window set into the convexity of its angle. There is also a large tube for the rectum; and its smaller tubes have been used to inspect the interior of the uterus. This instrument is called the endoscope, and I have occupied your time in showing you its construction, because by its use Dr. Desormeaux claims to have already demonstrated the true morbid anatomy of some of these chronic urethral discharges, and a more sure method of curing them. He has also explained the mode in which gonorrhœal inflammation gradually alters the urethral mucous membrane, and produces permanent stricture, having watched its progress carefully through all its various phases, from the simple intense redness which characterizes the suppurative stage, through the granular period which corresponds with the gleety discharge, to the white glistening bloodless surface of the fully formed organic stricture. This granular stage of urethral inflammation following gonorrhœa and characteristic of this disease, is the lesion most interesting to us at present, as throwing light upon the pathology and treatment of gleet. Our knowledge of its existence is due entirely to Desormeaux's researches with the endoscope. It appears that, after gonorrhœal inflammation of a certain degree of intensity and duration, patches of the urethral membrane become studded with minute granulation in particular localities of the canal, which are the sure forerunners of permanent stricture, and that more or less gleety discharge is poured out by these granular surfaces, until in the progress of the disease they become converted into the dense non-vascular tissue which constitutes the organic stricture. In the sequence of pathological changes there is an exact analogy between gonorrhœal urethritis and purulent conjunctivitis, and the similar affection, equally well known, of the os uteri. Granular conjunctivitis affects by preference the palpebral conjunctiva of the upper eyelid, and if its progress is unchecked it leads inevitably to fibrous degeneration of the affected membrane. According to Desormeaux, the same is true of gonorrhœal urethritis. The diseases are equally obstinate, and curable only by similar local applications. In his volume on this subject, published last year in Paris, a case is related in which this granular disease of the urethra had existed eleven years, accompanied by a gleety discharge, and which, in the language of the author, furnishes "a complete picture of the affection." Perhaps, as it contains details also of the mode of treatment by which the disease was effectually cured, I can do no better than introduce here a translation of the case.

"D—— consulted me in the month of October, 1855, for an acute orchitis. He had contracted gonorrhœa in 1846, and had been subject to a slight transparent discharge ever since its cure. Ordinarily, he gave himself little concern about it, but always after rising in the morning, on squeezing the urethra before urinating, he could force out two or three drops of clear, stringy discharge. I noticed also that his stream of urine was smaller than natural, that it was slightly twisted in direction, and lacked projectile force.

"As soon as he recovered from his inflammation of the testicle, the patient, who had become anxious about his difficulty in passing water, submitted to a thorough examination. By the aid of a *bougie à boule*,

I discovered, in the bulbous portion of his urethra, a stricture, through which I passed with some difficulty an instrument less than a line in diameter. Its passage caused pain, and the bulbous extremity was bloody when withdrawn. The stricture was more than two-thirds of an inch in length. On introducing the tube of the endoscope and carrying it down to the stricture, I brought in view a red inflamed surface, covered with minute granulations about the size of millet seeds, some larger, some smaller. I had, in fact, under my eye, a granular ulceration, presenting exactly the appearance of the same affection of the neck of the uterus. In withdrawing the tube, the granulations disappeared, and I saw nothing but a red surface, which in its turn passed out of view, and as far as the meatus the remainder of the urethral mucous membrane was perfectly healthy.

"The discovery of this lesion seemed to me to explain fully the whole pathological history of the case; for it was easy to understand that a continuous discharge could be kept up by a granular ulceration, similar to those we see daily on the palpebral conjunctiva and uterine neck, and which are so notoriously persistent and difficult of cure. The ulceration explained at the same time the chronic thickening of the urethral mucous membrane, causing the stricture I had just made out. I could also see clearly, by the persistence of this granular surface, why, contrary to the testimony of most writers on this subject, a chronic discharge from the urethra continues, in some cases, after the thorough dilatation of the stricture to which it is attributed; or, when temporarily checked during treatment, reappears as soon as the use of instruments has been discontinued, as I have seen so often happen.

"I decided finally to treat this lesion of the urethra by the same means employed in similar granular ulcerations of the os uteri, and in order to verify the relation of cause and effect probably existing between the ulceration and the stricture, I concluded to withhold the use of bougies for the latter.

"The endoscope afforded me the means of applying remedies to the diseased surface exactly as they are applied the the os uteri at the bottom of the speculum. I made use of cauterization, by a concentrated solution of nitrate of silver, carried through the tube, and was able to see distinctly the immediate effect produced upon the granular surface. These cauterizations were repeated every three or four days, the patient, in the interval, using injections in the urethra, of a decoction of rose leaves. Although the strength of the solution of the nitrate of silver was one part of the salt to three parts of water, the pain produced by its application was slight.

"This treatment, commenced on the 5th of December, 1855, had been carried out more than a month, when, on the 25th of January, 1856, without anticipating such an occurrence, I found that the tube of the endoscope could be passed through into the bladder; it had traversed the seat of the stricture without communicating the sensation as of having freed any obstacle, although its diameter was nearly three lines, and it fairly distended the anterior portion of the canal. It was evident that the stricture had disappeared, without any other treatment than that applied to the granular surface.

"I was thus enabled to examine the whole extent of the urethral

mucous membrane, from the neck of the bladder forwards. The prostatic portion was slightly red; this redness increased in the membraneous portion, and, towards its union with the bulbous expansion of the spongy portion, the ulcerated surface was recognised, its granulations being now hardly visible. The patient asserted that for some days previously he had passed as large a stream as in early life. Three additional cauterizations removed all remaining traces of the granulations; after this the patient continued his urethral injections for ten days, and then discontinued all treatment.

"A few days later, the discharge had entirely disappeared, and the *bougie à boule* traversed the whole length of the canal without encountering any obstacle. The endoscope showed but a slight redness remaining at the seat of the desease, and it was obvious that the ulceration had been entirely cured, and also that the stricture had disappeared under the influence solely of the treatment applied to the granular ulceration.

"I have had this patient under observation for eight years, and he has had no return of his disease."*

It is apparent, then, if M. Desormeaux's observations and deductions are confirmed by the experience of other observers, that his instrument has already added to our exact knowledge of the pathology of gleet and stricture, and that it also affords us more certain means of applying remedies to the cure of these effections.

I am able, from a somewhat limited experience, to speak favorably as to its practical utilty. By the aid of my friend, Dr. Gouley, who has acquired much facility in the use of the endoscope, I have satisfied myself of the existence of this granular condition of the urethra, and that its presence explains the persistence of a gleety discharge after a fair trial of bougies and sounds, as proved by its cure after the careful application of solution of nitrate of silver to the granular surface.

Desormeaux's instrument has been modified and improved in some respects by Cruise of Dublin, who testifies as to its practical value in a paper upon the eudoscope and its application, in a recent number of the Dublin Quarterly Journal of Medicine.

Of some other forms of chronic urethral discharge, depending upon a morbid condition of the more purely genital organs, as the ejaculatory ducts, seminal vesicles, and prostrate gland, including that described under somewhat fanciful name of "Prostatorrhœa," I shall take occasion to speak hereafter.—*April* 2, 1866.

Art. II.—*On the Removal of the Entire Tongue for Cancerous Disease.*

case i.—removal of the whole tongue by means of the ecraseur for epithelial disease—recovery (a). under the care of mr. paget.

A man, aged fifty, was admitted for cancerous disease of his entire tongue; his difficulty in swallowing and speaking was so ex-

* De l'Endoscope et de ses applications au diagnostic et au traitment des affections de l'Urethre et de la Vessie; Legons faites a l'Hopital Necker, par A. J. Desormeaux, chirurgien de l'Hopital Necker de Paris, 1865, p. 48.

(a) This case is published in *St. Bartholomew's Hospital Reports*, vol 1, p. 55.

treme that he was advised to have the organ removed. This was done under chloroform, and without any great difficulty. The mouth was drawn open, and firmly fixed so, and the tongue was drawn forward. To facilitate this latter step, the mucous membrane and the soft parts on the floor of the month, including the attachment of the genio-hyo-glossi muscles to the inner side of the symphysis were cut through close to the bone. The tongue was thus in great measure released from its anterior and inferior attachments, and could readily be drawn forward, so that the wire of an écraseur was, without difficulty, passed around its root, including the entire organ to its connections with the larynx. The wire was tightened by degrees, and there was some free but not dangerous bleeding when the mass was detached.

The man's recovery was uninterrupted and very rapid; indeed he regained his power of swallowing in so short a time that he soon ceased to require special attention in feeding, and before the end of a week he could make himself intelligible by imperfect speech, so much so that it would have been hard without actual inspection to have believed that the entire tongue had been removed. The patient continues well, with tolerable articulation, and it is now (October, 1865) twelve months since the operation was performed.

CASE 11.—EXTENSIVE EPITHELIAL DISEASE OF THE TONGUE—REMOVAL OF THE ENTIRE ORGAN BY MEANS OF THE ECRASEUR—RECOVERY. UNDER THE CARE OF MR. PAGET.

S. N., aged forty-nine, a fairly nourished woman, of dark complexion, and otherwise apparently healthy, living in the country, came to the hospital on January 4, suffering with pain and enlargement of her tongue. On examination there was found situated on the right side, and towards the centre of the tongue, an ulcer, with a hard excavated base and elevated edges; fissures extended from the margin of the ulcer in various directions; the induration passed across the middle line and backwards to the base of the tongue. The whole organ was impaired in its movements; and the patient was in great inconvenience from the constant dribbling of saliva; the neighboring glands were not involved to any extent.

Her history was, that nine months previously she first noticed a spot on the right side of her tongue. She took little notice of this, but it steadily increased; latterly she had suffered great inconvenience and pain; she was married and had several healthy children. There was no history of cancer or of "tumors" in her family. Mr. Paget pronounced the disease to be epithelioma of the tongue, and advised entire removal of the organ by the écraseur. The operation was performed on January 6, in the following manner: The patient being under chloroform, the mouth was widely opened, and the tongue drawn forwards. Mr. Paget divided the mucous membrane and structures connecting the sides of the tongue with the jaw, and also the attachments of the genio-hyoglossi to the symphysis, close to the bone; the tongue been thus freed was well drawn forwards, and the steel wire of an écraseur passed so far back as to include the whole of it close to its connection with the hyoid bone. The wire was then slowly tightened, and the tongue divided, though not quite

vertically, through its entire thickness. The patient lost but very little blood, the chief bleeding coming from the structures at first divided by the knife. The operation lasted only a few minutes. 3 p.m. (an hour and a-half after the operation)—The patient soon recovered from the chloroform; the mouth was kept open to expose the wound to the air. Ice ordered if necessary. 9 p.m.—No hæmorrhage; the patient was asleep.

January 22.—The woman made a most rapid recovery (b), being able to swallow fluids after the third day, and after the sixth she could make herself intelligible. At the end of three weeks she left the hospital able to swallow either fluids or solids, and with such good speech, that except upon examination of her mouth one could scarcely believe she had lost her entire tongue.

30.—She came to the hospital to-day looking extremely well; she could swallow perfectly; the divided surface of the tongue had completely healed; she was free from pain and from the annoyance arising from the constant dribbling of saliva. The floor of the mouth was considerably raised. There was no hardness in the cicatrix, nor any present indication of a return of the disease.

In remarking upon the operation, Mr. Paget said that he believed that which he had just done was suitable in the very great majority of cases in which it was necessary to remove the tongue for cancerous disease. Two points, however, must be attended to in performing it. (1.) The attachments of the tongue to the jaw, both in front, where there were the genio-hyo-glossi muscles, and at the side, where it was connected by the mucous membrane, must be thoroughly divided, so that the organ could be well drawn forward; and (2) care must be taken that the tongue was divided perpendicularly through its thickness; unless there was a definite provision to prevent it, the section would pass obliquely from behind downwards and forwards, and thus parts that had better been removed might be left. An efficient plan was to transfix the tongue perpendicularly with stout needles at the part at which the division was to be made, and to place the écraseur-wire behind these, so that it was made to cut vertically. There might doubtless occasionally be found cases in which the disease was situated so near the hyoid bone that it would be advisable to perform the larger operation recommended by Mr. Syme. Nevertheless, the écraseur operation allowed of complete removal of the sides and upper part of the tongue, and was, therefore appropriate in the greater number of cases. The operation besides was attended with scarcely any slight risk to life.

The following is an extract from a clinical lecture lately given, on the subject of cancer of the tongue, at the hospital by Mr. Paget:

"The motive to operate here, as in other cases, is either to prolong life, or, without shortening, to comfort what remains. For the first there is, I believe, some advantage—not a great prolongation of life, yet enough to justify an operation which is attended with very little suffering or risk. But the chief motive is in the hope of comfort, and the comfort that may be gained is, in many cases, so great

(b) Mr. Hilton, in his lectures on "Rest and Pain," page 72, says: "I do not know any tissue that repairs itself more rapidly [than the tongue]. It is abundantly supplied with capillaries filled with arterial blood and has enormous distribution of nerves, and these are the two elements that contribute most to rapid reparation."

as to justify a greater risk of life than is incurred in any of the ordinary operations for the removal of cancer of the tongue. The risk is really very small. I have not had a fatal case or witnessed one—there are few of even the minor operations of which I could say so much—and the comfort given is that the patient is delivered for the time from all the misery of one of the most distressing and disabling conditions of disease, and, till the cancerous growth is renewed, may enjoy complete health and do all his work. Doubtless the disease will return after operation, but it is as unreasonable to refuse a painless operation, and one free from risk of life, because the disease will return at some time soon after it, as it would be to refuse a course of medicine because it gives only temporary relief. When a man has only, suppose, two or three years to live, it is no small advantage if at least half the time can be spent in comfort rather than in misery, and in profitable work rather than in painful idleness. Looking back on the many cases of cancer of the tongue that I have had to do with, I should be disposed to say that there is no organ on which operations for cancer are more justly performed, or are more to be urged, even in extreme cases.

For the method of operating, the choice lies between cutting and the écraseur. Caustic is not be thought of, unless in a case of the very smallest extent; and the cases in which the ligature should be used must be extremely rare. I have never employed it, for the only advantage which it offers, that of avoiding hæmorrhage, is just as well, and much less offensively, obtained by the écraseur. The risks and troubles of hæmorrhage are, however, much overrated, and I believe the knife may be preferred to the écraseur in all but the largest operations, such as those for the removal of the whole tongue. —*London Times and Gazette, Feb.* 10, 1866.

ART. III.—*Excision of the Tongue. By* JAMES SYME, F. R. S. E.

ABOUT twelve months ago I communicated a case in which the tongue had been completely removed by excision, on account of extensive disease that threatened to prove fatal by preventing the admission of nourishment. This account was necessarily limited to the operation and its immediate effects, as sufficient time had not elapsed for determining whether or no the relief afforded would prove permanent, or how far the powers of deglution, articulation, and taste would be restored. After his return home to Manchester, the patient sent me favorable reports of his progress, but certainly not such as to convey any adequate idea of the improvement that had taken place since he came under my care. He was then emaciated and bent down by long-continued suffering, unable to articulate, so as to require a slate and pencil for expressing his wishes, and swallowing even fluids with such extreme difficulty as to feel on the point of starvation. My surprise may, therefore, be imagined when on the 10th of September last he unexpectedly made his appearance, erect and vigorous, and, seeing that I did not recognise him, announcing his name in a loud, clear voice. The feeling

thus excited was not lessened by learning that while traveling in the Highlands he had dined at table d'hôtes, and entered into conversation without betraying the deficiency under which he labored. Very much astonished by a result so much better than could have been anticipated, I requested a number of my medical friends to join me in examing the state of matters. Professor Goodsir and Mr. Nasmyth having satisfied themselves that no vestige of the tongue remained, various observations were made with regard to articulation and other functions of the absent organ; and Mr. Annandale afterwards instituted a more particular inquiry, of which he has given me the following report:

"The lips and jaw-bone, where divided, were soundly united without any deformity. The opening between the mouth and pharynx was much diminished in size and irregular in shape from contraction of the fauces and soft palate, which were drawn downwards and forwards more to the right than the left side, from the mucous membrane at that part having participated in the disease and been removed along with the tongue. Mr. W—— says that he can swallow as well as ever, provided that the food is either finely divided or fluid. He is also able to masticate solid substances, although difficulty is sometimes experienced from their getting into awkward parts of the mouth. In ordinary speech his words are wonderfully clear and distinct, and he can sing without any difficulty. All the vowels and words composed of them are articulated perfectly, and also the following consonants: B, C, F, H, K, L, N, P, Q, R, V, W. D is pronounced 'dthe,' J 'the,' G like 'sjee,' 'S' is a lisp. His taste is impaired, but still enables him to distinguish different articles and their respective qualities, as grouse from partridge, bitters from sweets, good beer from bad beer, etc. He has remarked that the seat of sensation lies somewhere in the throat, since there is no recognition of taste previous to the act of swallowing; and, in order to ascertain the truth on this point more precisely, the following experiments were made:

"1. A strong solution of salt was applied by means of a camel-hair brush to the fauces, palate, floor of the mouth, lips, an inner surface of the cheek, with the result of something being felt in the mouth, but no idea formed as to its nature.

"2. About a quarter of a teaspoonful of finely-powdered sugar was placed on the floor of the mouth, and, having been allowed to remain there a few seconds, was then brought thoroughly into contact with every part of the cavity without any recognition of its nature; but when a little water was added and swallowed, the taste was immediately perceived.

"3. The same experiment was repeated with another substance (salt), and with the same result.

It has long been known that large portions of the tongue may be removed without destroying or materially impairing the power of articulation; but I am not aware of any case on record in which it has remained so perfect after complete removal of the organ. Of the facts above mentioned, the one that seems most curious is the connexion between taste and deglutition; from which it appears that the

latter is essential for the full perception of the former. If the pleasure of taste could be perfectly gratified by mastication without deglutition, there would be no limit to the consumption of food; but the instinctive desire to swallow an agreeable morsel affords a check to any such abuse.

As the nature of the disease was not particularly described in relating the operation, a representation of microscopic structure exhibited by the tumor (for which I am indebted to Mr. Annandale) may be given, to show that it possessed the characters of epithelial cancer.—*London Lancet, May* 1866.

ART. IV.—*On the use of the Chloride of Zinc in Surgical Operations and Injuries and Especially in Operations for the Removal of Cancerous Tumors.*

THE chloride of zinc has been given an extensive trial in all surgical operations by Mr. De Morgan, surgeon of the Middlesex Hospital, who regards it as a valuable agent in hastening the process of cure. He applies it in solution of from 30 to 40 grs. of the salt to the ounce of water, saturating the entire surface of the wound with the chloride, the edges of the skin, adipose tissue, intermuscular spaces, medullary cavity or cancellated structure of bone. In twenty-four hours after its application, the superficial slough formed in some instances, is discharged as a creamy exudation, leaving the parts natural in appearance. There is no pain produced (excepting the momentary pain of the application) no vascular action, no inflammation. Its use is effective in warding off the evils which produce the large proportion of deaths after operations, as erysipelas, pyæmia, and osteomyelitis, besides preventing or lessening suppuration. The objection raised that it prevents union by the first intention is not valid, as Mr. De Morgan has seen wounds saturated with the solution heal in twenty-four hours.

Besides the general effect of the chloride of zinc on wounds, Mr. De Morgan is of opinion that it also obviates the recurrence of malignant tumors after their removal with the knife, though in what way he says can only be determined by time and numbers. He regards the recurrence of malignant tumors as due in many instances to the subsequent development of minute cancer elements beyond the limits of the tumor, which escape the knife; and their multiple appearance in different tissues and organs, simultaneously to the circulation of cancer germs (set free by incisions in the tumor with the knife), through the veins or lymphatics and their transplantation to different parts of the body where they develop into tumors. If the views of the diffusion and transplantation of cancer germs be correct the use of the chloride cannot but be beneficial; for to some extent it certainly must alter the character of the exuded matters of the remaining tissues. In support of the efficacy of the chloride in preventing the return of malignant tumors, Mr. De Morgan reports many cases thus treated in which the disease had not recurred up to a year

after the removal of the cancers. This treatment is deserving a fair trial by the profession. The favorable results following its application are too obvious not to deserve the earnest attention of every true lover of humanity. — *Brit. Am. Med. Chirurg. Rev., Jan.*, 1866.

Art. V.—*Foreign Bodies in the Air-passages of Children.*

M. GUERSANT writes as follows on this subject in the *Bulletin Général de Thérapeutique* for September 15, 1865 :

Foreign bodies in the air-passages may come from without or from the interior of the body ; they are met with in the larnyx, the trachea, or the bronchi. It is especially in children that they are observed, and they are of different kinds. The foreign bodies which come from the interior may be worms, which, ascending by the œsophagus, may pass into the larnyx, and sometimes cause sudden death ; or pus may come from an abscess in the neck ; or a tuberculous product, first developed in a ganglion in the lungs, may penetrate into the larnyx.

Foreign bodies may also come from the interior, having been first introduced from without ; thus wounds in the chest sometimes give passage into the pulmonary tissue, to pieces of dressing, such as lint, etc., which then pass into the respiratory tubes ; in the same way, pieces of necrosed bone may penetrate into the pulmonary tissue, to be expelled through the bronchi and trachea. A ball may follow the same path, in consequence of a wound in the chest. All such foreign bodies are often present without producing symptoms which may cause their existence to be presumed ; still, when an abscess in the neck opens into the trachea, when retro-pharyngeal abscesses threaten to empty themselves into the larnyx, or when foreign bodies enter from a penetrating wound in the chest, there are circumstances which put the surgeon in the way of forming a diagnosis.

Foreign bodies which come from without may be either fluid, soluble, soft, or hard. The fluids are water, wine, spirits, and all drinks. The soluble bodies are sugar, pieces of gum, pieces of sweetmeat of different kinds, pills, etc. The soft bodies consist of food more or less masticated. The solid bodies are raw beans, nuts, pearls, teeth, pieces of bone, money, etc.

Symptoms.—The foreign body lies in the larnyx, or rather in the trachea. The signs which it presents are serious in proportion with the youth of the child and the narrowness of the tubes.

If the foreign body be fluid, the phenomena that it causes are a sharp irritation, a convulsive and suffocating cough, a kind of suffocation and rale, which disappear quickly on the expulsion of the fluid.

If the foreign body be soluble or soft, it causes nearly the same symptoms. Immediately after the accident there is suffocation, and the patient may die upon the spot ; but ordinarily there is a violent, harsh, convulsive cough, with threatening of suffocation, appreciable by the patient and by the physician. The voice is hoarse or inaudible ; there are anxiety, a feeling of fear on the part of the patient,

with pain in the respiratory passage, sometimes localized by the patient, at other times of uncertain seat.

If the foreign body be solid, these accidents persist and even augment in intensity; but they vary according to the consistence of the body introduced. Substances which are soluble, such as sugar, gum, barley-sugar, and other *bon-bons*, sometimes only cause symptoms of short duration; they dissolve, diminish in size, and are quickly expelled by the efforts of cough. The same may occur, but more slowly, with pieces of masticated meat and of soft bodies in general. M. Guersant has seen a child eject, for several consecutive days, pieces of masticated meat, and thus relieve itself by fits of coughing. He has also seen the same thing occur in a child who had eaten a sugar-plum with the almond, of which the pieces had entered into the larnyx and trachea.

But it is not the same with hard foreign bodies; the symptoms already described not only persist, but cause other symptoms. A pin or a fish-bone may implant itself in the larnyx and produce very severe inflammation; bodies of this nature may remain fixed at one point. Round, solid bodies have a tendency to change their place: and these bodies pass from the larnyx into the trachea, or remain in the ventricles of the larnyx when they are small, or descend into the bronchi. It is in cases of this nature that foreign bodies change their places, giving rise to intermissions of the symptoms, leading to the belief that no foreign body is present, because the most frightful paroxysms of cough and of suffocation are succeeded by a perfect calm.

When the foreign body is in the larnyx, the symptoms vary less, because the body does not become displaced; but when it is in the trachea, it may ascend or descend. On placing the hand in front of the neck, a sensation is felt of a body which rises and descends in the trachea. Sometimes these bodies descend into the bronchi, and do not move. M. Guersant has had an opportunity of ascertaining the presence of a bean in the left bronchus; in this child, the respiration was heard in the right lung only, while in the left there was an absence of respiratory sound. An attentive observation of the respiration ought to throw light on the nature of the case.

When foreign bodies are left to themselves, either in the larnyx or in the trachea, they may be expelled by natural efforts if fluid or soft; but when they are hard and remain of the same size, or even increase in size (as kidney-beans), the symptoms increase in intensity; the paroxysms of suffocation are renewed; the patient is sometimes convulsed; the face becomes livid; there is lachrymation; the veins of the neck are distended, and the trachea projects more than in the normal state; the child makes very energetic efforts at expulsion. Air accumulates in the lungs, and distends their parenchyma. In consequence of rupture, the air penetrates into the cellular tissue above the clavicles, and into the chest, producing pneumothorax, and death may follow slowly; but, all other things being equal, more quickly in children than in adults, because of the smaller size of the organs.

The *diagnosis*, by aid of the means pointed out, is often easy enough; but too much attention cannot be paid to all the symptoms described. It is necessary, also, to attach the greatest importance

to the information furnished by the persons who were near the child at the moment of the accident, and who have been witnesses of the first symptoms, as these are sometimes followed by the expulsion of the foreign body; in which case the symptoms which persist admit of delay.

It is very important not to confound the introduction of a foreign body into the pharynx with the introduction of one into the larynx. Ordinarily, in the case of a foreign body in the larynx, the pharynx and œsophagus are permeable to drink; but not so in the other. A bulky foreign body, however, such as a portion of a morsel of food may enter into the trachea, compress the œsophagus, and thus obstruct the passage into this tube, so that the patient cannot swallow without regurgitating. In a case of this kind, the trachea being distended by the foreign body, it is necessary to ascertain that the œsophagus is free, which may be done by introducing a gum-elastic sound into the alimentary tube; the substance, if in the œsophagus, may thus be pushed into the stomach, and the difficulty will be overcome, and the diagnosis rendered certain. If, on the contrary, this cannot be done, there will only be found in the œsophagus an obstacle, which cannot be pushed on; and it will be recognized that the trachea is distended, and compresses the alimentary tube.

Prognosis.—The severity in the case of foreign bodies in the air-passages varies with certain circumstances.

1. *Age of the Child.*—Very young children, a year old for instance, may meet with the most serious accidents, because of the narrowness of the larynx and trachea.

2. *State of the Health of the Child.*—A state of disease is unfavorable.

3. *Consistence of the Foreign Bodies.*—Fluids cause temporary symptoms only. Soluble bodies are less dangerous than soft; and hard bodies, which cause permanent symptoms, all present more or less danger. Those which have a smooth surface do not cause the same dangers as those which are pointed or rough.

4. *Size of the Foreign Bodies.*—They may, by their size, intercepting more or less quickly the passage of air, cause more or less rapid asphyxia.

5. *Duration of their Stay.*—When foreign bodies remain a long time, inflammatory or other complications are to be feared; but these may be prevented if they are removed at an early period. It is, however, known that foreign bodies have remained for months, or for years, in the respiratory tubes, and have been expelled by the efforts of nature.

Treatment.—When a child has a foreign body in the larynx, if the patient can be examined with the laryngoscope or Labordette's speculum, the foreign body, if at the entrance of the larynx, or even between the vocal cords, may possibly be seen with the aid of the last instrument, and seized with polypus-forceps. If this means be not at hand, the child should be placed with its head downwards, struck on the back, and caused to cough and cry. After this, emetics and sternutatories may be used, but without great hope of success; and finally, most frequently without delay, recourse must be had to laryngotomy, if it is thought that the substance is in the

larynx, or else to tracheotomy, if it is believed that the foreign body is in the trachea or in the bronchi. In these operations, the rules must be followed which are laid down for the performance of tracheotomy in croup; and the surgeon must not forget to have at hand the small crane-bill forceps, as the foreign body may be impacted in a bronchus. Tracheotomy should be all the sooner decided on, as there is not such danger of failure as in croup, where the patient rarely recovers; indeed, in case of tracheotomy for foreign bodies, death is the exception, and recovery the rule. M. Guersant has had occasion to perform tracheotomy in five cases for the extraction of beans from the trachea; four patients recovered, and one died of pneumonia, who was operated upon sixteen hours after the accident. M. Guersant always applies simple dressing to the wound on the first day, and produces only gradual union. It may be united at once if the foreign body be expelled; and left open, and even kept open by a canula, if the foreign body still remain, and there be hope that it may yet be removed. After this operation, the surgeon ought to be on his guard against bronchitis and pneumonia; he should examine the chest daily, so as to be able to meet the earliest symptoms.—*Brit. Med. Journ., Dec.* 2, 1865, *and Amer. Journ. Med. Scien., April*, 1866.

ART. VI.—*Rare Form of indurated Chancre in the Male.* Case under care of MR. MAUNDER.

A VERY large majority of indurated chancres which are presented to the notice of the Surgeon have the physical characters of the kind termed "Hunterian," the induration giving to the sense of touch the idea of a foreign body—such as a split pea or hemispherical piece of cartilage let or sunk into the tissues. I here allude to this induration only in order to compare it with a corresponding physical sign, which was well marked in a case of indurated chancre (*chancre parcheminée en surface*) of Ricord, recently under my care, among the out-patients of the London Hospital. The subject of it was a young man about 20 years of age, and the ulcer, which was seated on the integument of the penis, behind the level of the corona, and on the left side of the organ, had existed about a month. It was of the shape and size of an ipecacuanha lozenge, and had the appearance of being seated upon the surface of the organ, just as a lozenge or coin would appear if similarly situated. In the left groin some four or five lymphatic glands were enlarged, indurated, but painless (constituting an adenopathy), quite separate, and the adjacent tissues were normal; the surface of the sore was granulated, and secreting pus freely. On taking it between the finger and thumb in the direction of its long axis it yielded (bent up), and the induration was not recognized, but when gently compressed in its short diameter the induration was at once appreciated by all who examined the case.

So rarely had this form of induration come under my observation that I deem it to be worthy of record. I pointed out to my dressers and others that had not the specific induration been observed the sore would probably have passed for one of the soft variety, and urged necessity for physical examination by the finger and thumb in all case of chancre; and specially directed their attention, when a doubt existed concerning the nature of a chancre, to the condition of the lymphatic glands associated with the region in which the chancre is seated. In the case before us, had a doubt existed concerning the variety of sore, whether indurated and infecting or soft and non-infecting, the condition of the glands in the corresponding groin would at once have determined the question in favor of the former variety.

In order to prove the correctness of the diagnosis, and to press upon my class the peculiar characters of this form of indurated chancre, I withheld specific treatment so as to avoid the possibility of checking the natural evolution of symptoms, and in the course of a few weeks a delicate rose rash and sore throat (mucous tubercles on the tonsils) were manifested.

The few examples of *chancre parcheminée* that I have seen have been seated on the integument of the penis.—*Lond. Med. Times & Gaz., April* 28, 1866.

Art. VII.—*Chloride of Sodium in the Treatment of Wounds:* Translated from the *Union Medicale;* July 11, 1865.

THIS is one of the most important discoveries of the present day for inducing the speedy cicatrization of suppurating wounds and for obviating the dangers that sometimes result. A great many agents have been employed for this purpose, as coal-tar, phenic acid, camphorated alcohol, chlorate of potassa, and other compounds of chlorine and latterly the sulphites. Amongst these different agents, none are more useful as disinfectants than the compounds of chlorine; but strange to say, the chloride of sodium, which is the most common and is always at hand, is rarely used by the profession. It is not, however, that experience has failed to testify to its worth; for many very able and interesting articles have been written on its use in the treatment of wounds, and submitted to the profession. Latterly Dr. V. Dervandre has published an article on the value of the chloride of sodium in the treatment of wounds, the more valuable, adds this author, because it can be always procured. The first effect of the chloride of sodium on a wound which is fetid, is to induce the immediate disappearance of the bad odor. Another immediate phenomenon observed is the pinkish hue which it gives the decomposed sanguineous blackish liquid which covers the wound. At the same time, there is experienced a sensation of cold and of pricking in the wound which may even become slightly painful. The suppuration diminishes rapidly in quantity, and if sanious, it becomes healthy in a few days. The wound granulates and cicatrizes rapidly. The

change evidenced in wounds by the chloride of sodium has a happy effect on the system. The appetite improves, and the patients acquire strength. In support of the value of a solution of this salt, Dr. Dervandre reports 400 cases of wounds thus treated. In one case only was there pyæmia. There was neither erysipelas, nor tetanus, nor hospital gangrene present in any of his cases, though the hygienic condition of the hospital under his care was bad. The solutions used by Dr. Dervandre are not of the same strength. At first he uses a solution of about two drams to two pints of water. In a few days afterwards he resorts to a concentrated solution. These solutions are injected in fistulous tracts or on the surface according to the nature of the wounds.

Medical Pathology and Practical Medicine.

ART. VIII.—*Extracts from a Report of a Committee on the Trichinæ at Chicago. Chicago Medical Examiner*, May, 1866.

THE PROPORTION OF DISEASED HOGS.

WE have found trichinæ in the muscles of 28 hogs out of the 1,394 examined. We may therefore conclude that in the hogs brought to Chicago 1 in 50 is affected with trichiniosis in a greater or less degree. We must confess our surprise at arriving at this result, which indicates with little doubt the startling fact that trichiniasis in pork is even more common in this country than in Germany, where it has caused so much suffering and death. For instance, in the city of Brunswick, where a most careful inspection of 19,747 hogs was made in the years 1864–5, only two were found to contain trichinæ in their muscles, the proportion being 1-10,000 against 1–50, as before stated in our country.

DEFENCE AGAINST ITS RAVAGES.

Now that the existence of trichinæ in our pork has been established beyond a doubt, it will be proper for us to point out all known means of defence against its ravages.

First, with regard to the rearing of hogs. These animals undoubtedly become infested through the eating of flesh of some kind, since no trichinæ nor germs of trichinæ have ever been found in any vegetable food. A strict attention to the feeding of hogs and their confinement in pens where no animal food is accessible is an infallible preventive against trichiniasis in them. Such management is all the more necessary, since European authorities agree that it is impossible to diagnose the disease in the animal from external appearances, and no culpability can therefore attach to the farmer for selling hogs which prove to be affected with trichinæ.

In regard to pork, the origin of which is doubtful, the use of the

microscope is primarily indicated. With this instrument only can we ascertain with certainty whether the muscles of the hog are free from the parasite. The general use of this instrument is, however, impracticable, unless a system of microscopic inspection be adopted here as in Europe at the great packing establishments. But we have in our power much more simple means of insuring safety in the consumption of pork. It is simply necessary to cook it thoroughly so that every portion of the meat shall have experienced a temperature of at least 160° Farenheit. We cannot insist too strongly on this point. Again by properly salting and smoking the meat for at least ten days, the trichinæ, should they exist, will certainly be killed. Simple dessication of the meat, if continued for a period of sufficient length, will also kill them. They will never be found alive in old hams, for instance. On the other hand, mere pickling appears to have very little effect upon these worms.

ECONOMICAL ASPECTS.

Having now fully exposed the exact extent of the danger from trichinous pork, to which our people are liable, and stated the means of avoiding it, we will proceed to close our report with a few remarks upon the economical aspects of the subject. A panic has been produced in the mind of our public by the news which has reached us from Germany concerning the disasters which have occasionally followed the consumption of pork in a raw state. The excitement has, with little doubt, been fostered by interested persons, for speculative purposes, until people have come to imagine there is a danger in eating pork of any kind—a danger all the more terrible because hidden, little understood, and undiscoverable by ordinary means. All this excitement has occurred, before a single instance of the occurrence of trichinæ in American hogs has been, as far as we are aware, authentically reported. It has therefore become necessary that the subject should be thoroughly investigated, in order that the people, by familiarity of the danger and confidence in their understanding of its character, may not be the prey of susperstitious fears. The panic which now prevails is unfounded in reason, senseless, and greatly injurous. We do not allude to the commercial aspects of the question, a matter of small moment compared with the great importance of pork as the kind of meat diet upon which nine-tenths of our agricultural population, north and south, mainly depend. In our view it would be folly to discard this kind of meat from our list of articles of food, when all possibility of injury attending its use may be avoided by the most simple means. Let the people but understand that only 1 hog in 48 contains trichinæ at all, that only 1 in 300 contains them in sufficient numbers to cause considerable danger, and that even in these cases the worms are rendered innocuous by proper smoking, drying, or cooking—and we imagine that few sensible persons will refuse pork as food if it suits their convenience to use it.

ART. IX.—*Trichinæ and Trichinosis:* By CH. EYRICH, M. D., of Newark, N. J.

IN consequence of the recent repeated occurrence of a peculiar disease, caused by the introduction into the human body of parasitical animals called *trichinæ*, this subject has again attracted the attention of the profession; and, although I have no observations of my own to offer, a review of some of the leading facts connected with the growth, development, and migration of *trichinæ*, and the disease termed *trichinosis*, will perhaps be of interest. My sources of information are derived chiefly from recent publications in German.

Anatomy and Development of Trichinæ.—At a meeting of the Society of Physicians of Vienna, January 19th, 1866,* Dr. Wedl spoke at length on the anatomy and development of trichinæ. The first discoverer of trichinæ was Hilton, of England, who found them imbedded in the muscles of a cadaver, but believed them to be ecchynococci. In 1835, Richard Owen found in some mucles a worm, rolled up cork-screw fashion, which, from this circumstance, he named *trichina spiralis.*

Regarding the sexual development of these animals observers were for a long time in the dark. Siebold looked upon the muscular trichina as some other worm in an undeveloped state. Later, it was thought to be indentical with trichostoma or filiara. Virchow first recognized and described the true sexual development of this animal; Leuckart added to our knowledge of its anatomical relations, while Zenker, by his well-known case, shed light upon its pathological significance. Fuchs and Pagenstecher have since then contributed accurate anatomical descriptions of the animal.

It possesses an elongated cylindrical body, tapering toward the head, and thicker at the other extremity. This thread-like form has essentially caused it to be confounded with the filiariæ. Its skin is striped and curled. The digestive tube begins at the head, dilating in the center into a sort of stomach, and terminating at the caudal extremity into an anus. At the anterior surface of the body there is an accumulation of cells, which might erroneously be taken for ovaries; more careful investigations have shown them, however, to be secretory organs, probably the sudorific glands of the animal; at the posterior surface, on a level with the stomach, there are also glandular organs, in which probably the secretion of digestive fluid takes place.

The female, about a third larger than the male, possesses near the extremity of the head a tube representing a vagina; this dilates into a uterus, terminating in ovaries. In the uterus the ova are found imbedded, containing the embryones in capsule, and where they are brought to maturity; the trichinæ hence are animals giving birth to live offspring. The male presents at the caudal extremity a common cloaca, which separates into rectum and penis. A further examination of this cloaca leads to traces of a vas deferens, the vesicula seminalis, and the testicle. Coition is accomplished by the male winding itself around the female, and evacuating the semen into the vagina of the female. The development of the embryo takes place in this

* Medic. Neuigkeiten.

manner: That the contents of the ovum, at first containing but one granulated nucleus, after frutition separates into several yolky spheres. The embryo at first has a pear-shaped, subsequently a cylindrical form. After the living embryo has been discharged, the migration commences, and is particularly aided by the form of the animal. With its thin anterior extremity it makes perforating boring efforts, and in this manner it slides easily through the smallest interstices of the tissues. Commonly the direction of travel is along the fibres of the areolar tissue. Exceptionally, it may happen that a trichina gets into the current of the blood, and is carried by it to remoter parts; as a rule, however, the muscles are reached in the manner first noticed.

Here a further metamorphosis takes place by its becoming surrounded with a capsule. Imbedded in this calcareous capsule, within the continuity of the muscular fibres, the animal continues to live and becomes sexually developed. If the incapsulated muscular trichina reaches the stomach, observation teaches that the calcareous capsule becomes dissolved and destroyed. But the animal, freed from its envelope, continues to live, propagates, and gives rise to trichinosis.

Mode of Migration, etc.—Dr. Fürstenberg, Professor of Zoölogy, and author of an excellent work on the acarus scabiei, has experimented since 1863 on the manner in which the embryos of trichinæ travel to their ultimate habitation in the primitive bundles of the voluntary muscles. The following are the main points of his researches :

The intestinal walls are always perforated by the trichinæ embryones, in order to reach their place of destination. But they do not always perforate the three coats of the intestines. A part of them pierce only the mucous and muscular coat, and then move along the connective tissue of the two laminæ of the serous coat, which form the mesentery, upward toward the spinal column, thence continuing their migrations to the muscles. Those embryos which perforate all three coats reach the free surface of the peritoneum, whence they start on their further journey.

As long as the migration of the trichinæ from the guts to the muscles lasted, trichinæ embryos were always found in the free space of the abdominal cavity. They were never found absent during the first thirty days of feeding the animals experimented on with trichinous meat, which confirms Virchow's and Leuckart's theory of trichina migration. Neither in the chambers of the heart, nor in the blood-vessels, have embryos or fully developed trichinæ been found, if the examinations were conducted with proper care. In blood coagula Fuchs has sometimes found trichinæ, but he could never convince himself that they had originally been there and not got there by accident.

The occurrence of trichinæ in the mesenteric glands is easily explained from the circumstance that the embryos, as stated, travel frequently between the layers of the mesentery upward toward the spinal column; hence they need not first enter the lymphatics in order to reach the glands situate between the lamina of the mesentery.

*History, Pathology, etc., of Trichinosis.**—Zenker's case, fully describ-

* Dr. Roll's lecture before the Society of Physicians of Vienna

ed and analyzed in 1859, fixed the diagnosis of the disease, and soon other cases were recognized, and former anomalous cases of disease, which had been looked upon as typhous or blood intoxication, were recognized as cases of trichinosis.

In 1860, at Karbach, three persons sickened from the use of trichinous meat. A case occurred at Detmold, which was thought to be a case of poisoning. The first endemic broke out at Plaven; was observed and described by Bœhler and Kœnigsdœrfer, and here the diagnosis was settled by finding the muscular trichinæ through the means of harpoons. Nineteen or twenty persons sickened, of whom one died. Since then the Kingdom of Saxony, as well as the Province of Saxony, seem to have been the focus of infection. A case of trichinosis was also carefully observed and described by Friedreich, of Heidelberg. In 1863, a slight endemic occurred at Rügen. About this time Langenbeck's case attracted much attention. He extirpated a cancroid tumor from the occipital muscle, and in the tumor, when opened, *trichinæ* were found in large numbers. The origin of this trichinosis was traced back to a dinner party, at which the patient was present, nine years previously, and after which all the participants had sickened. At the time, the landlord had been accused of poisoning the wine. But this subsequent operation brought the whole event to a clear light. During the second half of October, 1863, a trichinæ epidemic broke out at Hettstädt, one of the most extensive and severest, which ever occurred. Of one hundred and fifty-nine cases, twenty died. This endemic has been minutely detailed, and it was remarkable, that while the compositors in the printing establishment at Hettstädt were engaged with Rupprecht's brochüre on the subject, a second epidemic broke out among them. Since then cases of trichinosis were observed at Leipzig, Berlin, Guedlinburgh, mostly traceable to the use of *raw* sausage meat. In Hamburg a sailor, coming from Valparaiso, sickened of the disease and died. From British India a case of trichinosis has been reported. At the close of 1865 the disease broke out at Hadersleben. The mortality here reached a very high figure. Of three hundred and three cases, ninety died; and twenty are yet reported to be down beyond hope of recovery. A remarkable feature in this endemic is, that fatal cases occurred as early as during the first week of sickening, while ordinarily, they do not occur before the third week. This is owing probably to peritonitis, and intense lesion of the intestines, from the large number of trichinæ introduced. At the commencement of this year the endemic broke out at Wecksdorf, on the frontier of Saxony and Bohemia. Trichinosis was here demonstrated by harpooning. Küchenmeister discovered it in the case of a woman, Klob in that of a man

The perforation of the intestines, and final perforation of the peritoneum, cause irritation of the intestines and peritoneum which lead to inflammation. A careful study of Fürstenberg has led to the reason why these inflammations have been so differently estimated by various observers. In some animals on which experiments were made to determine the migration of trichinæ, and which died, the inflammation was found so slight, that it could not be considered as the cause of death; in such cases it is not improbable that

when the intestinal walls were perforated lymphatics may have been opened into, through which morbid substances were conveyed into the current of the blood, causing death. The peritonitis was generally marked by the presence of a certain quantity of reddish, turpid liquid in the peritoneal cavity and trichinæ embryos were found in this extravasation. Upon the free surface of the peritoneum, embryos were always found in greater or less number.

Symtomatology.—Regarding symptomatology, Dr. Röll divides the disease into three stages: 1st, stage of immigration; 2d, stage of digression: 3d, stage of regression. Death may occur in the first stage from peritonitis and enteritis; in the latter stages, death generally ensues from metastatic pneumonia, in consequence of venous thrombosis. The pain in the muscles, and the flexed position of the extremities are characteristic, probably because the trichinæ possess a predilection for the flexors; furthermore, œdema in consequence of disturbances in the circulation.

Treatment.—Regarding *therapeutics*, the picrimic salts, oil of turpentine, benzine, and also various anthelmintics, have been found useless. The best effects were derived from cathartics, at the commencement, especially calomel, in large doses, up to a scruple; later, quinine and iron.

Etiology.—In regard to the *etiology* of trichinosis there is no doubt. It is positively known that the infection takes place by trichinous pork. To Kühn, President of the Veterinary institute at Haile, several questions were submitted, viz :

1st. Are there characteristic signs by which the trichinosis hog may be detected? The results of feeding hogs on trichinæ were, that the first appearances of trichinosis in swine were enteritis, colic, and slight paralytic symptoms of the posterior extremities; these symptoms are, however, by no means characteristic, and occur in other diseases to which the animal is subject. 2d. Kühn has determined by observation, that swine of every age and race, from the common hog to the best improved stock, may become trichinous. 3d. It was shown that trichinosis did not interfere with the process of fattening. Trichinæ were found in an animal which had been sold for seventy dollars. 4th. By harpooning, the diagnosis of trichinosis may best be ascertained. Regarding the relative frequency of trichinæ in the various muscles, Kühn has given a scale. They occur most frequently in the diaphram, in the muscles of the loin, then in the muscles of the shoulder; less frequently in the tongue, the larynx, etc. It is remarkable that they never occur in the involuntary muscles, in the heart, or in adipose tissue.

Preventive Measures.—Regarding prophylaxis, the most careful cleanliness in raising stock cannot be too urgently recommended, although it can be readily seen how difficult this is with an animal which is as omniverous as the hog. Feeding powdered anthracite has not been found to be of prophylactic value.

Dr. Röll discusses the *measures of sanitary police* which government should employ to protect the people against the trichinæ disease. As it is well known that the hog is the only animal from which trichinæ are imparted to man, there are three means to protect against the danger of the disease.

1st. To completely forbid the consumption of pork. 2d. To admit only such pork for consumption as is positively known to be free of trichinæ. 3d. *To give to pork a preparation in cooking, by which the trichinæ which may be present are surely killed, and hence rendered inert.*

Regarding the first means it may readily be seen that such a measure, for many reasons is impracticable, as pork forms the most frequent animal food of the population. Regarding the second, a general microscopical inspection of the meat, under supervision of the government, as advocated by Virchow, is hardly practicable. Thus, for instance, in Vienna, where annually about 90,000 hogs are killed, it would demand an extraordinary force of examiners to carry the measure through; and the difficulty is yet increased, if we consider that of 20,000 hogs hardly one is found trichinous, even in countries where this disease occurs most frequently. An examiner, who for months in vain searches for an object, becomes tired out; and the correctness of such inspections could hardly be relied upon, aside from the fact that we do not yet possess abattoirs for hogs, and the inspectors would have to visit the houses of butchers, hotel keepers, and private dwellings, to carry out the method. An imperative inspection of pork is hence considered impracticable.

But one method remains to ward off the danger of infection—*by proper cooking, or preparation of the meat.* It can be assumed with certainty, that a temperature of 60° R. kills the trichinæ .In cooking large pieces of pork for a short time, and in rapidly roasting chops, or cutlets, the interior of the meat generally does not reach more than 48° R. The great object, hence, in the preparation of pork, is thorough and complete cooking—rather too long than too little, and slowly rather than rapidly.—*Phild. Med. and Surg. Rep.*, June 2, 1866.

ART. X.—*Theory of Elimination as Applied to Epidemic Cholera:* By AUSTIN FLINT, M. D., Prof. Principles and Practice of Medicine, Bellevue Hospital, Medical College, N. Y.

THE probability of an impending visitation of epidemic cholera invests with extraordinary importance, at the present time, all practical questions pertaining to this disease. The minds of many members of the profession are unsettled respecting the principles of treatment, and the pathological views which may be entertained must largely influence therapeutical measures, especially with those physicians who will be called upon for the first time to encounter the epidemic. Hitherto the phenomena of the disease and the fatality have been in great part attributed to the loss of the constituents of the blood which are contained in the choleraic dejections. This pathological view, of course, dictates, as a fundamental principle of treatment, an endeavor to arrest, as speedily as possible, the intestinal effusion. Measures for this object have been generally considered as the foundation of the treatment which promises most in the way of success.

Since the commencement of the present march of the epidemic a very different pathological view has been advocated, especially by Prof. George Johnson, of London. In a series of papers republished from the *British Medical Journal* in the *Philadelphia Medical News*, Prof. Johnson undertakes to establish the theory that the choleraic vomiting and dejections are eliminative; that the special poison of cholera, existing in the blood, is expelled by means of the gastro-intestinal effusion. As a necessary conclusion, if this theory be true, vomiting and purging are to be encouraged rather than restrained; the measures of treatment hitherto deemed of prime and essential importance must be hurtful, and in their place emetics and cathartics are to be substituted. Prof. Johnson does not shrink from this conclusion, but boldly reasons in behalf of the measures just named.

In the belief that the former of these views accords with existing pathological knowledge, with clinical experience, and with common sense; and believing, also, that the practice which the theory of elimination requires is likely to lead to an incalculable loss of life, the attention of the reader is solicited to some remarks suggested by the reading of Prof. Johnson's papers. The brief space which the editor of the *Record* has assigned to me will not allow an extended discussion of the theory of elimination as applied to epidemic cholera; I can only offer a few hints, with the view of giving a direction to the reflections which, at the present time, it behooves physicians to bestow upon the subject.

Prof. Johnson dwells with emphasis on the importance of avoiding erroneous theories respecting the pathology of cholera. No one certainly will differ from him in this. But inasmuch as a theory must be entertained, the important question is—what is the theory which commends itself to reason and experience? The doctrine of elimination is certainly not less theoretical than the doctrine hitherto held. It cannot be claimed that the truth of the former is demonstrated; in fact, reasonable as may be the theory of elimination in other applications, facts going to establish it upon incontrovertible ground are yet to be ascertained. Let the reader reflect upon the absence of the positive proof of elimination in the various diseases to which this doctrine is generally applied, such as rheumatism, gout, the essential fevers, etc. On the other hand, facts do certainly show that important constituents of the blood, in greater or less quantity, are contained in the choleraic effusion. There is, assuredly, more of conjecture in the theory of elimination than in the doctrine that the phenomena of the disease and its fatality are in great part attributable to the loss of blood-constituents.

Prof. Johnson places much stress upon the want of a constant relation between the symptoms of choleraic collapse and the loss of fluid by vomiting and purging. He cites the testimony of different observers, that collapse occurs in cases in which the characteristic dejections are small and even wanting. All who have seen much of cholera must have met with such cases. It is, however, an error to say that, as a rule, the choleraic phenomena and the danger from the disease are not in proportion to the quantity of intestinal effusion. In the larger proportion of cases there is an obvious relation between the loss of fluid by vomiting and purging (especially the latter) and the symptoms of collapse. This is purely a matter of

clinical observation, and I appeal to those who have had large experience for the correctness of the statement just made. Admitting that this relation is not constant, how are the exceptions to the rule to be explained? *First*, the amount of liquid expelled from the stomach and bowels does not always represent the quantity of effusion. A large amount of liquid may be retained within the alimentary canal. This fact has been repeatedly observed; the loss is, of course, the same, whether the liquid be retained within the canal or expelled. *Second*, the amount of liquid effused does not represent fully the loss of important blood-constituents. The amount of liquid depends on the quantity of water. Now, the loss of water alone is, doubtless, highly important, but the organic and mineral substances which the effused liquid carries with it are of greater importance, and these are by no means necessarily in proportion to the quantity of water. *Third*, it is a well known truth of wide application, that the effects of identical causative morbid conditions are widely different in different cases. All persons, for example, do not bear equally well the loss of blood; a hæmorrhage which one person will tolerate well, will destroy the life of another person. It is perfectly consistent with the truth just stated, that a small amount of choleraic effusion will sometimes give rise to collapse and death, and that a large amount of effusion does not always prove serious.

Prof. Johnson argues in behalf of the theory of elimination, by contrasting the effects of hæmorrhage and of profuse suppuration with the phenomena of choleraic collapse. The analogy between the rapid effusion in cholera and the expenditure of blood-constituents in the production of pus, is too strained to require consideration. Between the serous effusion of cholera and hæmorrhage, there is an apparent resemblance; but a little consideration suffices to show that the resemblance is apparent rather than real. After hæmorrhage the blood is simply impoverished; its constitution is not so altered as to interfere materially with its circulation; the red corpuscles which remain are not incapacitated for the exercise of their functions; the conditions for animal heat are not notably affected; and the processes of nutrition, secretion, and excretion, are not arrested. On the other hand, the rapid loss of the elements which compose the effusion in cholera, occasions a widely different condition of the blood; it circulates with difficulty; the red corpuscles fail to perform their functions; the conditions for animal heat are greatly affected, and the processes of nutrition, secretion, and execretion are in a great measure arrested. The difference between the remote effects of hæmorrhage and the phenomena of choleraic collapse is not greater than that between the immediate effects of the loss of blood and of the blood-constituents which are contained in the intestinal effusion in cholera. The argument, therefore, based on the contrast of these remote effects is of no weight.

Another argument is in like manner disposed of, viz., that based on the difference between the effects of remedies in cases of hæmorrhage and cases of cholera. The difference between the condition of the blood in cholera and after hæmorrhage sufficiently accounts for the fact that the remedies which are efficacious in preventing fatal syncope from the loss of blood may not be successful in curing patients in choleraic collapse.

Finally, Prof. Johnson contends that measures which arrest the intestinal effusion are not curative in cholera. Here is an appeal to clinical facts, and let competent observers testify with respect to these facts. That opiates and other remedies which are sometimes successful in arresting vomiting and purging, after the phenomena of collapse have occurred, do not always, or even often, effect a cure, by no means proves that it is not of vast importance to secure the successful operation of these remedies prior to the occurrence of collapse. It is undoubtedly true that the choleraic evacuations sometimes cease spontaneously in the stage of collapse, and the patient dies. I have met with examples. Moreover, it must be admitted that opiates and other remedies given in large doses after collapse has taken place may do harm. The blood-lesions existing in the condition of collapse, unhappily render recovery impossible in a large majority of cases. But measures which succeed in promptly arresting vomiting and purging (especially the latter) after the diagnostic character of cholera is fully manifested, and before collapse has occurred, do effect a cure in a certain proportion of cases. This statement is remarkable if the efficacy of treatment can ever be deduced from clinical facts; that is, if it be ever logical to infer a *propter hoc* from a *post hoc*. As this is a point to be settled by reference to experience, it is to be hoped that the profession may have the testimony of those who have had abundant opportunities of observation.

The importance of the bearings of the theory of elimination on the treatment of cholera, cannot be too much considered. If this theory be accepted, it is never desirable to interfere with the vomiting and purging; but, on the contrary, both are to be encouraged. To think of this practical result of the theory must cause a shudder to one who holds to the doctrine that the great source of danger in cholera is the loss of the blood-constituents contained in the choleraic effusion. It is to be feared that the influence of the able papers by Prof. Johnson on the minds of practitioners will lead to the loss of not a few lives.

Another practical result legitimately follows the acceptance of the theory of elimination, viz., the premonitory diarrhœa is not to be arrested. We need not go beyond the consideration of this result to disprove the theory. Certainly there is no fact in practical medicine better established than that cholera is prevented by arresting the diarrhœa which so often precedes the development of the disease. Let this fact have its due weight in the reflections of physicians on the theory of elimination. The impossibility of reconciling this fact with the theory, renders the latter untenable.—*Med. Record, May 1st*, 1866.

Art. XI.—*Amphoric Respiration in Pleurisy and Pleuro-Pneumonia.* By H. Fearnside, M.B., London.

THE not unfrequent occurrence of amphoric respiration in the course of pleurisy and pleuro-pneumonia has scarcely, I think, received from English Physicians and writers on auscultation the

amount of attention which it deserves ; for, as cases which come under my observation have proved to me, its want of recognition may lead to errors both in diagnosis and practice.

The doctrine formerly held respecting amphoric respiration was that it is heard (most generally) in broncho-pleural fistula, and in some examples of large pulmonary cavern.

Chomel, in his "Traité de Pathologie Générale" (1842), mentioned that gurgling was sometimes heard in chronic pleurisy, and supposed that it was owing to the presence of a pulmonary cavern, separated by a thin layer of tissue from the pleuritic effusion.

MM. Rilliet and Barthez ("Traité des Maladies des Enfans," vol. i, p. 152) stated that when a pleuritic effusion is superadded to pneumonia, most frequently the bronchial souffle augments in intensity, and sometimes assumes a true cavernous timbre ; whilst, if mucus be present in the bronchial tubes, and be disturbed by the passage of air, a sound resembling gurgling is produced, and at the same time the voice is pectoriloquous, and thus the idea of the existence of a cavern naturally arises. These observers subsequently reported instances of pleurisy (*Archiv. Gén. de Médecine*, 1853) from which they concluded that where there was no union of pneumonia with pleurisy, nor any communication of the bronchial tubes with the pleural sac, nor any large pulmonary cavern, these signs may exist, and that for days, weeks, or even months, a bronchial souffle may be heard, which by its intensity and timbre simulates cavernous and even amphoric respiration.

MM. Béhier, Trousseau, and Gallard have also narrated cases of simple pleurisy in which these phenomena have been present.

To M. Landouzy, of Rheims, however, belongs the merit of specially studying this subject, and of deducing useful rules for practice. The cases, of which an abstract follows, afforded good examples of the signs in question, and as such I beg to place them before the readers of the *Medical Times and Gazette*.

Case 1.—Some months ago I was requested to visit a young woman who had been ill for several weeks with symptoms of fever of an intermittent type. The patient (a domestic servant) was descended from healthy parents, and although not robust, had generally possessed good health. Her illness was not, in the first instance, attended by any notable signs of pulmonary disease, but, after the lapse of about three weeks, she began to complain of pain in her left side, and shortness of breath. She also became troubled with a cough, which in the course of ten days was accompanied by a considerable amount of muco-purulent expectoration. She had much evening fever and night perspiration ; her strength rapidly declined, and her weakness was still further increased by occasional attacks of diarrhœa and by her inability to take food. Signs were noticed which were thought to indicate the formation of a large cavity in the lung. In this condition, she was supposed to be the subject of acute phthisis, and at this stage of the complaint she fell under my notice. On examining her chest the following signs were observed :—The movements of the left side were much less free, and the lower intercostal spaces were less marked than those of the right side. On measurement, immediately below the mammæ, the cir-

cumference of the left side was the same as that of the right. On percussion over the left side, the sound was universally more or less dull, except under the clavicle and near the sternum, where it was tympanitic. From this point to the fourth rib it was less dull than below, where the dullness was absolute both before and behind. Vocal fremitus over the lower half of the left side was absent. On auscultation under the left clavicle the respiration was tubular; over the third and fourth ribs most crackling sounds were heard; below this there were no respiratory sounds; behind, over the left upper scapular region, the sound was bronchial, which increased in intensity and acuteness of tone as the ear descended over the lower part of the scapula, until near its inferior angle, where it passed into pure amphoric respiration, which was heard both in inspiration and expiration. Occasionally, over the same part a liquid sound, not distinguishable from that of gurgling was audible, and the voice was not œgophonic, but pectoriloquous; below, as in front, no respiratory sounds were heard. On the right side the stroke sound was clear, and the respiration puerile. The heart was displaced, and its impulse felt behind the sternum; the pulse was weak and quick; the respiration short and frequent. The tongue was unusually red, the stomach irritable, and the bowels relaxed.

Treatment and Subsequent Progress of the Case.—To correct the morbid state of the gastro-intestinal mucous membrane, bismuth and hydrocyanic acid were prescribed, and were speedily found useful. Alteratives and alkalies (iodine of potassium, with bicarbonate of potash) were then given, and the lower half of the affected side of the chest was freely painted from time to time with a strong solution of iodine. A diet, simple, but as nutritious as the stomach would bear, was allowed, and under these means she gradually improved. The respiration over the lower scapular region remained amphoric for about three weeks; it then became tubular, and did not altogether lose this character so long as the patient remained under observation. The vocal resonance subsided, and became bronchophonic; the expectoration diminished, and at the end of three months ceased. At this date the patient considered that her health was reëstablished; there was evidence, however that there remained a considerable amount of condensation in the lower half of the left lung, and the circumference of the left side had contracted by about an inch.

Case 2.—During the last summer my opinion was asked respecting a young lady, fourteen years of age, who had been more or less out of health for some months. She did not inherit any predisposition to tuberculous disease, but had lost several relatives from cancer. Her health, however, had been much impaired some years before by a severe attack of scarlatina. The catamenia had appeared a year previously, but had been suspended for a considerable time. In the summer of the preceding year, Miss A. had been sent to a school in one of the midland counties, where the subjects of study were more numerous and required closer application, and where also the diet was less abundant and supporting than she had been accustomed to when at home. Her health remained as good as usual until about Christmas, when she took cold, and was confined to the

bed for a short period. A slight cough remained; and about the middle of March she expectorated about two tablespoonfuls of blood. At this date she was again confined to bed for a few days, and discontinued her studies for about a fortnight. Her cough recurred from time to time, but did not attract much notice until May, when she began to complain of pain in her left side and shoulder, and her increasing debility and emaciation led to her being sent home. She was then considered to be the subject of consumption, and was advised to take cod liver oil. I visited her in the early part of July, and made the following observations:—She was much emaciated; had a small, quick pulse, a good deal of evening fever, and some night perspiration. The motions of the left side of the chest were much impaired, and there was great dullness on percussion over its whole extent—more complete, however, below than above. Vocal fremitus was feeble, but still perceptible. The respiration was bronchial under the left cavicle; and in the lower and outer portion of this region there was a sound which no auscultator would have hesitated to pronounce cavernous; here also gurgling was heard from time to time. Behind, the breath sound was strongly tubular over the upper scapular region, and amphoric over the lower, where the vocal resonance was that of pectoriloquy. Below, the respiratory sounds were all but inaudible. The heart's sounds, impulse and position were normal. On the right side there was no dullness on percussion, but the breath sounds were masked by sonorous rhonchus. She had a troublesome cough, and expectorated in twenty-four hours from two to three ounces of uniform brownish yellow mucopurulent matter. It is unnecessary to give the details of the treatment, which varied from time to time as circumstances indicated. Suffice it to say that counter-irritation over the affected side was freely practiced by means of iodine. Sedatives were given to allay the cough, and, as soon as possible, alteratives and tonics were prescribed; from the first, also, as liberal and supporting a diet was recommended as her digestive organs would tolerate. Under this plan she soon began to improve in health; her cough and expectoration rapidly subsided, and at the end of seven weeks both had ceased. The respiration over the lower scapular region lost its amphoric character in about a month; but it remained tubular, with a gradually diminishing intensity, for nearly three months. The cavernous sound, anteriorly and superiorly, became weaker and more distant; but at the end of five months it was still recognisable on deep or quickened breathing. At the same date the stroke sound over the lower half of the left side was still duller, and the respiratory murmur feebler than natural. She presented, however, all the external indications of good health, having become ruddy and plump.

Comments.—In each of these patients there was a combination of pleuritic effusion with pulmonary condensation. In the first, the affection of the lung was probably simple inflammation; in the second, it is more reasonable to suppose that some tuberculous deposit had taken place, which had even resulted in the formation of a small cavity in the upper and outer portion of the lung. The chief interest of the cases and that for which they have been narrated, relates to the occurrence in both of the amphoric respiration over the lower scapular region. In considering the causes and mode of

production of this sound, the possibility of the existence of bronchopleural fistula may be dismissed at once, as there were absolutely no other signs of it. The previous history of the cases, the seat of the lesion, the rapid subsidence of the cough, the cessation of the expectoration, and the subsequent progress of the patients are incompatible with the supposition that it could be referred to the existence of a large pulmonary cavern. Hence it can only be ascribed to a peculiar condition of the lung produced by the pressure of the effused fluid—probably aided also by interstitial deposit. Béhier, Rilliet, and Barthez think that in such cases amphoric respiration is only the reverberation of the tracheal murmur transmitted by an indurated lung, and it is so far in harmony with this view that it is especially in those points towards which the lung is pressed back that the sound is heard.—*Medical Times and Gazette*, April 28, 1866.

Art. XII.—*Hæmoptysis Unassociated with Pulmonary Tuberculosis*: By Richard Payne Cotton, M. D., F. R. C. P., London.

HÆMORRHAGE from the lungs, to a greater or less degree, is so frequently found in connection with a tubercular condition of the chest, that its diagnostic value, as a separate symptom, is very apt to be overrated. In the early period of my attendance at the Brompton Hospital for Consumption, I saw so much hæmoptysis amongst the unmistakably phthisical out-patients, that I was sometimes tempted to the general conclusion that hæmoptysis was, practically, but another name for phthisis. Subsequent and more extensive observation has, however, very much changed my views in this particular; and I am now fully convinced that hæmoptysis is met with in a very considerable number of non-tubercular cases. Simple pulmonary congestion, whether the result of inflammatory action, or arising from mechanical obstruction consequent upon heart-disease; pneumonia, whether acute or chronic; bronchitis; general plethora; may at any time give rise to hæmorrhage from the lungs. I have seen, indeed, most active bleeding where some of these conditions have been combined—as in congestive bronchitis in persons of plethoric habit. To this list, congested states of the pharynx, tonsils, and gums might fairly be added; but I wish my present observations to apply to hæmoptysis, not in its literal sense, but as it is now usually employed—as hæmorrhage *from the lungs*. In a future communication I propose to enter upon the various forms which hæmoptysis, under these several conditions, is disposed to assume. In the present instance I am anxious only to draw attention to a not unfreqent, but so far as I know, little recognized form of non-tubercular, hœmoptysis, met with chiefly in the female sex, but sometimes also amongst males, generally in the early period of life.

It may simplify my description of this variety of hæmoptysis if I give a brief account of two or three cases in point.

A young lady, aged eighteen, recently arrived from a residence in

one of the West India islands, was supposed to be phthisical. I was requested to see her, and report upon the nature of her disease, about which several very conflicting opinions had already been given. She was anæmic, nervous, and out of health; had a dry cough, but had not become thinner; her catamenia were regular, but scanty; her appetite was capricious; and she had had frequent hæmoptysis, which there was every reason to believe did not proceed from either the mouth or fauces. The blood, upon examination, was found to be thin and watery, of a dark color, free from coagulum, unassociated with either bronchial or salivary secretion, and in general appearance much resembling a mixture of *red-currant jelly and water*. I was informed that this was its general character. Sometimes it had been considerable—as much as half a pint in twenty-four hours; at others, it would not exceed a teaspoonful or two during the same period; sometimes it would be scarcely enough to tinge a pocket-handkerchief, and often it would disappear for days together. This state of things had existed for nearly two years, causing great anxiety to the patient and her friends, from a belief that it was indicative of pulmonary disease. Careful examination of the chest, however, failed to elicit any evidence that such was the case. Rest, change of air, and the tincture of sesquichloride of iron, entirely restored this patient to health. It is now more than three years since I was consulted, and I heard a short time back that the young lady was in perfect health.

A case very similar to this came under my notice two years ago in consultation with Mr. Humpage, of Upper Seymour street. A young lady, aged twenty-four, had long been delicate, and was supposed by her family to be consumptive. She had become thinner; had had a dry cough for some length of time; and had spat blood. Upon examination, this was found to present an appearance very similar to that described in the preceding case; it looked, in fact, more like watery red-currant jelly than anything else. As in the other patient, there were no decided physical signs of tubercular disease; and we came to the conclusion that the patient was not phthisical. Time has justified our diagnosis, Mr. Humpage having lately informed me that the young lady had, for many months, lost the symptom which had caused so much alarm, and was in good health.

Another case, which I shall even more briefly relate, came under my notice about eighteen months back. It was that of a young lady, twelve years of age, of slender and somewhat delicate appearance, but free from every symptom of tubercular affection. Mr. J. N. Winter, of Montpelier road, Brighton, frequently saw this patient, and quite agreed with me as to the nature of her disease. She first alarmed her parents by spitting up, just after going to bed one night, a considerable quantity of blood. This was found upon examination to be watery and dark-colored—in fact, of the *thin red-currant jelly character* already described. This symptom has recurred at various intervals with more or less intensity, and the child still remains delicate, but without any indications of tubercular disease. At the time of her attacks her tonsils and pharynx are somewhat congested, her gums spongy, and her fingers even have sometimes exuded a little watery blood, just as one sometimes sees in extreme cases of purpura. It is evident that, in this instance, the blood escapes not only from

the mucous membrane of the respiratory passages, but also from that of the throat, tonsils and gums.

Other cases of this form of hæmoptysis have fallen under my observation; but I shall not specially refer to them in consequence of not knowing their sequel. At least twelve or thirteen have happened in my own wards at the Hospital for Consumption. Two only of these were males; the rest were females, generally of delicate and nervous appearance, and under the age of thirty. Several had very suspicious symptoms of phthisis; but the physical signs failed to exhibit any evidence of pulmonary tuberculosis, and most of them improved in health under appropriate treatment. In every case the expectoration was of the same general character; sometimes it was mixed more or less with bronchial mucus, slightly tinged perhaps with blood, and sometimes with salivary secretion; but more frequently it was simply watery blood, resembling, as I have described, a mixture of red currant jelly with water.

The following are the conclusions at which I have arrived from a consideration of the preceding notes.

1st. There is a form of true hæmoptysis in which the expectoration is of a dark color, and of a more less watery consistence, bearing a close resemblance to a mixture of red-currant jelly and water.

2nd. That such hæmoptysis is of non-tubular origin, and may proceed from any part of the gastro-pulmonary mucous membrane.

3d. That it is attributable to a morbid and fluid condition of the blood, allied, at least in appearance to that which is met with in purpura and scurvy.—*London Lancet, Feb.* 1866.

Obstetric Practice.

Art. XIII.—*On Chloroform and Ergot in Obstetric Practice.* By Charles C. Hildreth, M. D., of Zanesville, Ohio.

Very soon after the introduction of chloroform by Dr. Simpson, I commenced its use, and have formed the following opinions in regard to its value :

1st. That it is a very safe agent in obstetric cases. I have not seen the least approach to danger from its use during labor.

2d. When the case is properly selected, it not only saves the patient a vast deal of suffering, but very much shortens the duration of labor.

3d. By tranquilizing the nervous system, diminishing shock, and sustaining the vital energies, chloroform secures the patient a far better recovery after labor.

4th. I have found chloroform very valuable in all instrumental deliveries and operations; in puerperal convulsions, by whatever

cause induced; and in all cases of version. But the chief value of chloroform is in tedious, lingering labor, arising from rigid, undilatable os uteri, and accompanied by too feeble or excessively painful contractions. In such a case, chloroform acts like a charm. Under its influence, the rigid os uteri becomes soft and pliant, the mucous follicles of the uterus and vagina pour out their secretions in abundance, and labor progresses rapidly. Obstetrical authorities advise us, in nearly all cases, to leave the membranes intact until the os uteri is fully dilated. With the patient under chloroform, I am confident this advice may in many cases be disregarded with perfect safety to both mother and child. It has been my practice in cases of lingering labor to administer chloroform, rupture the membranes, and discharge the waters freely. By this practice, we add very much to the energy and efficiency of the uterine contractions. An over-distended bladder is nearly paralyzed, and cannot contract, until part of its contents is removed by the catheter. So often we find the uterine muscular fibre so over-distended that its contractions are almost powerless. As the last pains of labor are usually the strongest, simply because part of the uterine contents are expelled; so the first pains are rendered more efficient, by diminishing the capacity of the organ. The patient under chloroform, and the waters discharged, if the os uteri does not dilate easily, I have found the occiput of the child, and the well lubricated fingers of the accoucheur carefully applied, as safe and much more efficient dilating instruments than the bag of waters.

That the danger to both mother and child, from early rupture of the membranes, is very much exaggerated, I have not a shadow of doubt. It is quite a common occurrence to find the waters break naturally, days, or even weeks, before active pains come on, and yet such labors generally do well. So also, in rupture of the membranes, at the seventh or eighth month, in cases of deformity, or exhaustion, or hemorrhage, we usually find such labors terminate successfully.

Dr. Blundel, in his excellent work on Midwifery, takes frequent occasion to remind his reader that "meddlesome midwifery is bad." So indeed it is, in natural labor, which progresses fairly and satisfactorily. So long as nature is doing well her work, it is no doubt bad practice to interfere; nor will any good accoucheur advise it. But if "meddlesome midwifery is bad" in perfectly natural labor, the "trust to nature" practice is much worse, in cases requiring obstetrical assistance. In looking over the statistics of lying-in hospitals, we are at once struck with the fearful rate of mortality to both mother and child, when the duration of labor exceeds by a certain number of hours the natural period. There is a point of endurance of suffering beyond which nature will succumb unless relieved.

In lingering labor from any cause, I am well convinced, the rate of mortality to both mother and child will be much diminished by the use of chloroform, the early rupture of membranes and discharge of waters, by the artificial dilatation of the os when required, and by the use of ergot or other uterine stimulant when pains are inefficient. Dr. Tyler Smith expresses my sentiments in saying, "I believe in the present day more mischief is caused from a kind of fear of the uterus, and of interfering with its natural action, than from bold and intelligent efforts to guide and control it."

Chloroform and ergot in obstetric practice are antagonistic powers. The one diminishes uterine contraction, the other increases it. Knowing this fact, we often give ergot in lingering labor with inefficient pains, much earlier than we would consider safe without the use of chloroform.

If ergot acts too energetically for the safety of the child, it is very easy to control such action by chloroform. If chloroform suspends uterine contraction almost entirely, it is readily aroused again by ergot. The skilful practitioner, by the judicious application of these two remedies, cannot fail to alleviate much suffering, as well as to diminish very much the duration of labor.

Having said so much in favor of chloroform, allow me to state one very serious objection to its use in obstetric practice. Chloroform most certainly predisposes our patients to post-partem hæmorrhage. Theoretically, we would anticipate such a result; practically, we are assured of the fact. We have in ergot, fortunately, an almost certain preventive of such a catastrophe. When, therefore, chloroform is given in the latter stage of labor, the accoucher has not done his whole duty to his patient, unless he also gives an efficient dose of ergot before the child is born or the placenta delivered.

Ergot, when given in labor without the use of chloroform, requires careful and skilful management. Most authors condemn the use of ergot in first labors. They tell us that it seriously endangers the life of the child, as well as the external soft parts of the mother. No doubt the authorities are right on this subject, and yet there are cases of first labors when ergot can be given with safety and benefit. By a careful regulation of the dose of ergot, we attain two very different results. A small dose repeated at intervals of fifteen to twenty minutes, will soon increase the frequency and energy of the uterine contractions, or bring them up to the natural standard. A large dose given at once, will often induce a continuous rigid spasm of the uterus, which in first labors without chloroform so often destroys the life of the child by interfering with the placental and fœtal circulation. In practice, I have found almost all the preparations of ergot efficient, but for convenience prefer the tincture. Of this preparation, I consider one-half drachm a minimum dose, when we merely wish to stimulate the uterus to increased efforts. As a maximum dose, two drachms never fail in my hands to induce contractions, sometimes so powerful as to require the use of chloroform to restrain them.

Thus, by a skilful regulation of the dose of ergot, and of the interval at which it is given, we may obtain almost any desired form and frequency of uterine action.

Although ergot is our most valuable and efficient remedy for feeble uterine action, yet we obtain decided results of a similar character, from borax and cimicifuga. From my experiments with borax, I have formed the opinion that it has no influence in originating uterine contraction, but if regular pains are present, they will be increased in force and frequency by half-drachm doses of the medicine once or twice repeated. The action of borax is much more mild than that of ergot. It does not induce the rigid continuous uterine spasm produced by a large dose of ergot, and hence can be given in first labors with much less danger to both child and mother.

I have found the cimicifuga also a mild but decided stimulant to the uterine muscles when once in action. Equal parts of tinct. ergot and tinct. cimicifuga make a very valuable and safe combination in practice. So also a solution of borax in decoction of cimicifuga will be found a fair substitute for ergot in certain cases. As a dilating remedy for rigid os uteri, I have found nothing equal to chloroform by inhalation. Belladonna locally applied, no doubt has a decided influence in relaxing rigidity; but is too uncertain, and perhaps too poisonous for general use. The lancet, and various nauseating remedies, have also had their advocates. One of my medical friends informs me that he relaxes rigid os uteri by administering by the stomach a drachm of chloroform in a glass of whiskey and water. From the few cases in which I have tested this practice, I have formed the opinion that the relaxing power of the remedy will be measured by the degree of intoxication produced.

In conclusion, allow me to state that a more general use of ergot in the last stage of labor will tend to prevent many of the diseases of the puerperal state. By the proper dose of ergot, we secure a firm contraction of the uterus. This prevents hæmorrhage and violent after pains from retained clot. The presence of coagula not only induces pain and tenderness, but also predisposes to metritis, peritonitis, phlegmasia dolens, and purulent absorption, or pyemia. These are some of the natural sequelæ of uncontracted uterus and post-partem hæmorrhage, and they will be found to follow much the most frequently labors in which ergot has not been given. Practically, I am convinced of the fact that the mortality of the puerperal state would be much diminished, and the future health and comfort of our patients much improved, if it were the custom of physicians in every case of labor to give a full dose of ergot (if not before the birth of the child), invariably before the delivering of the placenta.—*Amr. Jour. Med. Sciences*, April, 1866.

ART. XIV.—*Facilitation of the First Stage of Labor.*

DR. ANDREW INGLIS maintains (*Ed. Med. Journ.*, July, 1865) that the most efficient means hitherto proposed for facilitating the first stage of labor, is to separate the membranes for some distance round the os. He calls attention to the effect on the character of labor of such a separation. He states: "In the first stage of labor coming on and proceeding without interference, there are two opposite conditions of the passages—one in which there is a copious discharge of viscid mucus, and which is often called a 'wet labor;' and another, in which there is hardly any, and labor is called 'dry.' At the full time, the first seems to occur normally in the cow, mare, bitch, etc., and, I am inclined to believe, is natural also in the human female I consider the following as being the natural process

in women : The ovum having become ripe, the membranes separate from the cervical portion of the uterus, if not from the whole surface. They then by their weight press more heavily against the cervix, even when the patient is lying down ; and as the pressure is soft, equable, and continuous, the cervix gradually yields to it and becomes quite slack, and this takes place without the occurrence of pain. Next, when relaxation has become complete, the mucous discharge commences proceeding from the uterus. Finally, a pain comes on and terminates the first stage. That the discharge comes from the uterus is shown by its protruding from the os previous to its appearance in the vagina. Besides, it is only found when the membranes are already separated, and is very often tinged with blood before pains have been felt. A process resembling this form of the first stage may be seen where the other muscular canals are concerned, and perhaps most prominently in the case of the rectum. If the finger or bougie is gently and cautiously inserted past the sphincter ani, and kept there for some time, complete relaxation gradually ensues, a profuse discharge from within the sphincter comes on, and, if the bougie is allowed to remain long enough, the muscular fibres above begin expulsive action.

"The foregoing explanation seems equally applicable to 'wet' cases of abortion or miscarriage in the human subject, except that in such cases healthy ripening of the ovum cannot be said to be the cause of the separation of the membranes."

Dr. Inglis says that he has seen many examples where the first stage has been sudden and short on account of previous separation of these. Three of these he relates.

The following are his conclusions :

"1st. The easiest form of the first stage of labor is characterized by protrusion of the membranes and a copious discharge.

"2d. These are always direct consequences of separation of the membranes.

"3d. The result of artificial separation seems precisely similar to that of spontaneous.

"The following is the practice I would recommend in regard to separation of the membranes : 1st. That it should always be the initial measure in the induction of premature labor ; and that until complete relaxation of the os has resulted from it, there should be no further interference of any other kind ; 2d. That when labor has begun without previous separation of the membranes, and these are still adherent, they should always be at once separated, as the best means of overcoming the rigidity of the os, and the painful and prolonged first stage, which almost invariably accompany such a state of matters.

"In the latter of these two cases, if the pains are severe and ineffective, I should be inclined to recommend sedatives to be given at the same time, in the hope of gaining time for painless relaxation to take place.

"With regard to the means of separating the membranes, I have in most cases been able to do it with the finger, though in one or two an instrument was required. In one case, which I have not reported, I could not at first get the finger far enough in to effect any extensive separation ; but the small portion round the os, which was

thus denuded, was so relaxed an hour after that I was able to insert the whole finger and separate to the desired extent."

Where he has used an instrument it has been Dr. Hamilton's uterine bolt.

The usual history of primiparous cases seems, Dr. Inglis thinks, to be confirmatory of his views. "The duration of the pregnancy," he says, "being generally shorter, labor commences before the separation of the membranes has occurred, and the first stage is in consequence much slower than in subsequent labors. This is commonly supposed to be the result of the absence of that mucous discharge already referred to, but I think, in reality, chiefly arises from the want of previous separation of the membranes, of which the mucous discharge is only a symptom."—*Amer. Journ. Med. Scien.*, Oct., 1865.

ART. XV.—*Narrowing of the Pelvis, with consecutive Putrescence of the Fundus Uteri.* By Dr. SCHARLAU.

THE following case illustrates the practice in Germany in difficult labors, and gives an instance of acute gangrene, or, as it has been called by Rokitansky and Klob, putrescence of the uterus. A primipara, aged thirty-four, fell in labor on the 3d September, 1865. On the 5th the os uteri was fully dilated, and the forceps was applied. The "strongest tractions" were used in vain. Then a colleague assisted during two hours in a second application of the forceps. This failing, the patient was taken to the lying-in institution at Berlin. She was then very much exhausted; pulse 128. A laceration of the vagina extending to the fundus was felt. The os uteri was rent in several places. The head presented. The child being alive it was not thought justifiable to perforate. She was ordered ten grains of Dover's powder, and left to rest. After an hour and a half, the fœtal heart being no longer heard, perforation was resorted to. The cephalotryptor (and other means of extracting) was rejected on account of the existing lacerations. The exhausted efforts of nature was trusted to for expulsion. Exhaustion increased, and in another six hours the head had made little progress. The cephalotryptor was now applied; after a time it slipped, and delivery was completed with forceps. After labor her condition did not improve. The temperature rose from 38°3' cent., on the first day to 41°2' on the ninth day. It maintained this elevation for three days, then fell to 38°9'. She died on the sixteenth day. The pulse rose with the temperature. On the third day there was vomiting and great abdominal pain. On the sixth day the uterus was felt as high as the navel; a foul, sanious discharge flowed from the vagina. There had already been gangrenescence of the vulva. The post-mortem examination showed adhesions of uterus to intestines and abdominal wall. Near fundus of the uterus was an opening, with thin, discolored edges, and corresponding to it was a small opening in the intestines where this had been bound in contact; so that there was a direct communication between the uterine cavity and the

intestinal canal. In the vagina, corresponding to a necrosed point in the ramus of the pubis, was a long deep rent; the fundus of the vagina was perforated. The inner surface of the uterus was covered with a shreddy, blackish, putrescent mass. Near the fundus a portion of the muscular tissue was destroyed. No thrombi were formed. The right synchondrosis was torn open, and in the articulating surfaces was much purulent fluid. On the right ascending pubic ramus was a spot of necrosis, quite denuded of periosteum; opposite this spot was a rent in the vagina. The pelvis is described as belonging to the generally small class, compact; pubic arch, narrow. The conjugate diameter was a little under four inches, the transverse was four and a half inches. The cavity of the pelvis was also somewhat contracted (The points that attract attention are, 1. The persistent use of the forceps after strong efforts had shown the inefficiency of this instrument to extract. 2. The postponement of perforation *until the child was dead*, notwithstanding progressive exhaustion of the mother· 3. The final resort to the cephalotryptor. 4. The extensive lacerations of the vagina, the denudation of the pubic bone, and the starting of the sacro-iliac synchrondrosis. Timely perforation, the removal of the vault of the cranium, and the use of a properly constructed craniotomy-forceps would have delivered in such a case, with perfect safety to the mother in an hour. It is probable that the putrescence, or gangrene, was simply the result of primary injury, and exhausted reparative power.—*British and Foreign Medical Review.* April, 1866.

Art. XVI.—*Studies on the Change of Tissue in Labor and Childbed, based on Analysis of Urine of Pregnant, Parturient, and Lying-in-Women.* By Dr.F. Winckel.

THE author gives a history of the literature of his subject, and relates the results of his own examinations of urine. He points out how desirable it would be to institute analysis of the milk and sweat. From forty analyses on four persons, during *pregnancy*, it resulted that the secretion of urine is more copious than in the non-pregnant state, whilst the daily excretion of urea, chloride of sodium, sulphuric acid, and probably also of phosphoric acid is scarcely so great. During *normal labor* twenty-one analyses on five persons showed that the urine is increased in quantity, the specific gravity diminished, and so also is the secretion of urea,phosphoric and sulphuric acids; on the other hand the chloride of sodium is notably increased. In the second stage of labor the quantity of urine is greater than in the first, and there is more urea, phosphoric and sulphuric acid, and above all, the chloride of sodium is remarkably raised. Lastly, the separation of urea, common salt, phosphoric and sulphuric acids differs according to the hour of the day, showing the same curves as the temperature. As to *preternatural labors*, twenty-five analyses on five women showed that generally, on the access of fever, the urine fell off whilst the urea increased, the common salt was in

the inverse ratio to the urea. Whilst the chloride of sodium appeared to be increased in protracted labor, and only fell in high fever, the urea fell during labor, but rose with the increase of temperature. The action of phosphoric and sulphuric acids corresponded to the excretion of urea. In *healthy puerperæ* forty-eight analyses on five women showed that during the first days the urine was increased in quantity principally within the first twenty-four hours; that the urine was clear, of low specific gravity, generally bright yellow. The absolute excretion of urea, phosphoric and sulphuric acids was somewhat diminished, that of chloride of sodium hardly at all; a gradual decline in the quantity of urine with the progressive involution of the genital organs, a rise in the specific gravity and a return to the ordinary characters. In puerperal diseases 114 analyses on eleven women showed that in light, quite local febrile illnesses, the urine sinks greatly in quantity, but always remains greater than in the non-pregnant. A very marked falling off in quantity generally foretells a severe and long illness. In severe puerperal diseases, especially with exudations, the usually copious excretion of common salt falls remarkably and rises again on the subsidence of the fever. In severe febrile puerperal diseases the relation of the urea to the sulphuric acid is always remarkably increased.—*Rostock*, 1865—*Brit. Am. and Foreign Med. Rev.*, 1866.

Materia Medica and Pharmacy.

ART. XVII.—*New and Ready Mode of Producing Anæsthesia.*

DR. B. W. RICHARDSON has been for some years engaged in researches for the production of local anæsthesia. Snow maintained that all narcotics produce anæsthesia by the process of arresting oxidation. Dr. R. has come to the conclusion that arrest of oxidation means arrest of motion, and that anæsthesia in truth means the temporary death of a part, *i. e.*, inertia in the molecules of the part. This led him to the conclusion that Dr. Arnott's plan of using extreme cold was the first true step in the progrsss of discovery, and that if it could be made easier of application and at the same time could be combined with the use of a narcotic fluid an important advance in therapeutics would necessarily follow. Dr. R. has been for four years engaged in experimenting with a view of demonstrating this. Finally he has devised an apparatus consisting "simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierces the outer part of the double tube, and communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner

tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the production of a degree of cold six below zero.

"By this simple apparatus, at any temperature of the day and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by directing the spray upon a half-inch test-tube containing water he can produce a column of ice in two minutes at most. Further, by this modification of Siegle's apparatus he can distribute fluids in the form of spray into any of the cavities of the body—into the bladder, for instance, by means of a spray catheter, or into the uterus by an uterine spray catheter.

"When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effects do not end here. So soon as the skin is divided the ether begins to exert on the nervous filaments the double action of cold and of etherization; so that the narcotism can be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound, as I shall show, without any danger. I have applied it direct to the mucous membrane of my own eye, after first chilling the ball with the lid closed.

"I have now employed this mode of producing local anæsthesia in four cases on the human subject. The first case was the extraction of a tooth from a lady, the operation being performed by my friend and neighbor, Dr. Sedgwick, on January 24th of this year. On the 29th of the same month I used it again on the same lady for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

"I have used the apparatus also in connection with my friend, Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotized around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotized the deep-seated parts, and enabled him to cut for another inch and a half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a half inches in that direction. The patient was entirely unconscious of pain, and after narcotizing the whole of the deep surface, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

"Afterwards, in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotized while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' ad-

ministration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

"These results are so interesting that I make no apology for bringing them at once before my medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumors, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

"In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of nerve, and which has a boiling point of 75° or 80°, can be obtained from the hydrocarbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quantities of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

"Reaction from the anæsthesia is in no degree painful, and hemorrhage is almost entirely controlled during the anæsthesia.

"One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether; methylated ether causes irritation, and chloroform, unless largely diluted with ether—say one part in eight—does the same."—*Med. Times and Gaz., Feb.* 3, 1866—*Amer. Journ. Science, April*, 1866.

ART. XVIII.—*On Some New Compounds of Ether—Styptic or Hæmostatic Ether:* By BENJ. W. RICHARDSON, M. A., M. D., F. R. C. P.

MY researches on the production of local anæsthesia by means of ether spray have led me to invent a few new compounds of ether which cannot, I think, but prove useful in practice, and to which I would direct the attention of the readers of the *Medical Times and Gazette.*

Hæmostatic Ethers.—In observing the influence of the cold produced by the dispersion of absolute ether during operations, nothing has struck me more than the effect of the cold in immediately stopping the flow of blood. For a time, cold alone, when carried to

its fullest degree, prevents all venous and capillary hæmorrhage, and even the hæmorrhage from small arterial trunks. After a time, however, as reaction returns, and the vessels relax under the influence of heat derived from the renewed circulation, there is bleeding, which, if a wound be closed too quickly, is a cause of after trouble. The observation of the immediate effects of cold led me to think that if they could be supplemented by a styptic which would spray evenly with ether, and which would take up the constringing action when the vessels commenced to relax, an important desideratum in both Medical and Surgical practice would be supplied.

Xylo-Styptic Ether Spray.—With this object before me, I requested Mr. Robbins to make for me a solution consisting of absolute ether, having a boiling point of 92° Fah., charged to saturation at a low temperature with tannin, and afterwards treated with zyloidine, a little short of saturation. The compound, made with much care, came out well. It ran easily through the spray tube without blocking; it produced good local anæsthesia, and it possessed an agreeable odor.

In order to test to the extreme the effects of this preparation as a styptic, I took sheep's blood, removed all the fibrine previous to coagulation by whipping, and then let the blood remain exposed to the air for two days to ensure partial decomposition. In this way the blood was rendered nearly as fluid as port wine, and in the most unfavorable condition for being transformed into clot. A few drachms of this blood were now placed in a saucer, the saucer having been warmed to the temperature of the body. The spray of the styptic ether was then directed upon the blood from a full-sized spray tube, and in five seconds the whole mass of blood was so thoroughly solidified that the saucer could be turned upside down without any escape of fluid. The blood, which had previously presented the odor of putrefaction, was also deodorised, and remains quite inordorous at this date—ten days after the experiment. The blood sets in a firm leathery consistence, covered on its upper surface with a fine whitish layer, with a bright vermilion color beneath.

These are the effects of the styptic ether on blood, the spontaneous coagulability of which has been lost, and I had the pleasure of showing these effects at the College of Physicians on Friday last, during a lecture on heat and cold in the treatment of disease; but these effects are trifling when compared with what takes place on blood newly drawn, and which contains fibrine. In this case the process of coagulation under the influence of the spray is the work, I had almost said, of a second.

When this spray is directed on an open bleeding living surface, the primary effects are those produced by the cold—namely, the condensation and whitening of the tissues. If blood be flowing, it solidifies, and when the parts relax, new blood that may ooze up enters the solid blood as though it were a sponge, quickly solidifying by coagulation and stopping further flow.

The applicability of this process for the arrest of hæmorrhage will occur to the mind of every Practitioner. The substances used in the compound are innocuous, and the combined influence of the cold and the styptic are immediate, and so decisive that I can scarcely imagine any hæmorrhage they would not control. I

have not had an opportunity of testing the point, but I have no doubt from the influence of the styptic on the decomposing albumen of defibrinated blood that even in those cases of hæmorrhage where the blood is preternaturally fluid, the styptic spray would arrest the hæmorrhage entirely. Where the blood contains fibrine in a natural condition, I cannot imagine a case in which the fluid would not prevent exudation.

The essential elements of this process are three in number :

1. The immediate constringent effects of cold on the blood-vessels.
2. The chemical action of the solution on the fibrine and albumen of the blood.
3. The extreme mechanical fineness of distribution of the fluid on the bleeding surface.

The styptic ether cannot only be applied to open wounds on the skin, but to hæmorrhage after the extraction of teeth,, and by means of a uterine tube, to hæmorrhage arising from cancerous disease of the uterus or other cause. It might also be applied to the rectum in cases of hæmorrhage from piles.

The apparatus required for this styptic ether is mechanically the same as for ordinary ether—that is to say, my spray tube with Dr. Clarke's hand bellows. The tube, however, requires to be made of different metal from that ordinarily in use for local anæsthesia; and I have therefore instructed Messrs. Krohne and Sesemann to construct a special tube for the purpose.

Ferro Styptic Ether.—I have tried other experiments with the persalts of iron, which are more or less soluble in ether, especially the perchloride, and these one and all produced, as a styptic ether, rapid coagulation of blood. Solutions of iron salts in ether are not, however, more effective than the ether I have already described; and as they destroy the tube rapidly, act upon clothing injuriously, and do not so thoroughly deodorise, I do not think they are in the main so practical.

The styptic ether, containing xyloidine and tannin, will keep ready for use any length of time, as there is nothing in it to undergo decomposition; and as very small quantities of it are required, it will become, I trust, of standard service to the medical practitioner. It would be of great use also to surgeons on board ship, and particularly to army surgeons. In case of warfare it would be exceedingly useful on the battle field, as under the instruction of the Surgeon it could be used by an orderly, so as to prevent hæmorrhage instantaneously in the case of flesh wounds. It would also form a useful addition to the Medical cabinet of travelers, who by necessity are removed from the direct succor afforded by Medical art.

I have invented some other ether compounds—namely, a caustic ether, an iodised ethereal oil, and an ozonised ether, to which I will refer in a future number.—*Med. Times & Gaz.*, April 28, 1866.

ART. XIX.—*Case of Poisoning from the Cyanuret of Mercury.*

THERE is a case of poisoning from the cyanuret of mercury reported in a French medical journal of 1865. A compound of this substance usually sold in toy shops under the names of "Pharaoh's ser-

pents," or "serpent's eggs," resembling in appearance sweet meats of guimare paste, was mistaken for such by a young nobleman 19 years of age, and a portion was swallowed before the error was discovered. Very soon after, he experienced a sensation of heat and of constriction of the œsophagus, accompanied with great heat and pain in the stomach. A physician in the vicinity was sent for, who administered an emetic that afforded him some relief. The pain returning, another physician, Dr. Peters, was called in three hours after the accident. The symptoms then were, palor, marked weakness, general uneasiness, pulse 84, skin cool, with occasional slight chills, nausea, a metallic taste in the mouth, a feeling of constriction throughout the whole length of the œsophagus, with difficulty of deglutition, continued pain in pit of stomach partially relieved by pressure. In this case Dr. Peters administered lime water, for the purpose of decomposing the sulpho-cyanuret and of reducing the mercury to an insoluble and harmless oxyde. He soon experienced marked relief, although the pain still continued. Opiative emollients applied over the stomach completed the cure. The dext day, having an evacuation from the bowels, he, at the same, discharged a large tænia. This case brings to mind the dangers of trusting children with such dangerous playthings; also the action of the compound of mercury on tænia.—*Union Medicale*, Sept. 14th, 1865.

Art. XX.—*On the Treatment of Articular Rheumatism and other Affections by the Sub-cutaneous Injection of Sulphate of Quinia.*

THE question which M. Dodenil proposed to himself in making some investigations upon the hypodermic use of quinia, resolved itself into two points—namely, whether it is possible to introduce this substance beneath the skin without inconvenience, in certain cases where the absorption by the digestive canal is insufficient or mischievous, and what relation can be established between the doses usually employed internally and those which ought to be injected, in order to obtain almost identical physiological results? To these propositions he replies, that although an acid solution such as that of quinine cannot be introduced beneath the skin with impunity, yet the inconvenience is trifling, and notwithstanding the employment of large doses, the local disturbance is slight and infrequent; and with regard to the dose, he administers the sulphate in the proportion of half a gramme (about $7\frac{1}{2}$ grains) to two grammes in twenty-four hours. The instrument he employs is a small, graduated glass syringe, adapted to a perforated needle; and the seat of the injections he has varied without any unfavorable effects, the punctures being generally made on the sides of the vertebral column, and sometimes on the thighs and arms. M. Dodenil has observed, that in the cases where the medicine has been administered beneath the skin, the cure has been at least as rapid as when it was given in the usual manner; but it must be remarked in favor of the injections, that almost all the patients subjected to their employment were in the

worst conditions. They all presented disturbance of the digestive system, which would have been increased by the administration of the sulphate by the mouth; several presented phenomena of intolerance, and vomited the drug; and some had had rheumatic complications of the greatest intensity. After describing the particulars of eight cases of rheumatism treated in the above-mentioned manner, M. Dodenil remarks, that rheumatic patients are not the only subjects who derive benefit from this mode of treatment. He has successfully employed the same plan in cases of gastralgia complicated with periodical febrile or nervous symptoms, and also in the symptomatic fever of tubercular consumption.

When the sulphate is given after the commencement of feverish excitement the lowering of the pulse is produced with a certain degree of regularity three quarters of an hour after the injection; and this appears to be the time necessary for the introduction of the medicine in sufficient quantity into the circulation.

In the treatment of rheumatism it is necessary to employ rather large doses; but in intermittent fever the doses may be somewhat less. The injection of a large dose has a double advantage, for in the first place the physiological and therapeutical effects are definite; and, in the second, absorption is more rapid, and the economy is sooner saturated.

From the researches he has instituted on the subject, M. Dodenil draws the following general conclusions: 1. In articular rheumatism, as well as in other diseases in which its efficacy is established, the sulphate of quinia may be administered by the hypodermic method without serious inconvenience, and with some advantages that may be readily appreciated. 2. Those who have hitherto employed this drug in subcutaneous injection, appear to M. Dodenil to have employed insufficient doses, which circumstance explains the absence of physiological phenomena in some of the published details. 3. It is necessary to introduce beneath the skin a dose above the half, and nearly equal to two-thirds of that which is given by the mouth, in order to obtain almost identical effects. 4. Absorption is more rapid, and elimination is more prolonged where a large dose is employed; and 5. The greatest advantages of the hypodermic method so applied are the rapidity and certainty of its action, and the immunity secured for the digestive canal. This last result is important, for the healthy condition of the stomach allows the patients to take food early, and shortens the period of convalescence.—*Bulletin Général de Thérapeutique*, August 15th, 1865.—*Brit. & For. Med. Rev.*, Jan., 1866.

ART. XXI.—*On the Employment of Blisters in Rheumatic Fever.*

DR. HERBERT DAVIES, who last year proposed to treat acute rheumatism by the application of blisters, and brought forward a few illustrative cases in the support of the plan, now adduces the leading features of nearly fifty cases, the great majority of which

have been under his own personal superintendence. He advocates this method of treatment on various grounds, and in the first place he states that, if adopted early and before any physical signs of endo-pericarditis are developed, it undoubtedly, in a large majority of cases, saves the heart from inflammatory mischief. In the fifty cases described, the results of the blister treatment were most remarkable and satisfactory, for as many as twenty-five of them, when discharged, were totally free from any endo or pericardial mischief, and two recent cases of cardiac inflammation were apparently cured by the alteration effected in the blood by the free withdrawal of the serum from the poisoned joints. But to obtain such results it was necessary to treat the cases early, and to blister simultaneously every affected joint, or rather its proximity. Dr. Davies also states that by this treatment relief of the local pains is rendered rapid and permanent, the diminution of pain almost always commencing as soon as the blisters begin to draw; that the temperature of the body falls, the pulse is reduced in rapidity, and the reaction of the urine is altered; that convalescence is soon established; and that the application of the blisters is not remarkably painful. Dr. Davies, while advocating the blister-treatment does not think it incompatible with the treatment by alkalies, and he does not doubt that the latter would be a useful adjunct. As a practical point, he remarks that good acetum lyttæ, *such as can be fully depended upon*, well painted in zones round the joints, and close to the inflamed parts, produces much less pain than is caused by the usual mode of blistering by strips of the emplastrum lyttæ.—*Clinical Lectures and Reports by the Medical and Surgical Staff of the London Hospital*, vol. ii., 1865—*Brit. & For. Med. Rev.*, Jan., 1866.

Art. XXII.—*On the Use of the Bromides of Potassium, Cadmium, and Ammonium in the Treatment of Insanity.*

THE experiments related in this paper were instituted by Dr. Belgrave, of the Lincolnshire County Asylum, chiefly to ascertain the therapeutic value of the bromides in the treatment of general paralysis, and they seem to show the possibility of controlling some of the more serious occasional manifestations of that disease, as also similar symptoms in other forms of mental disorder. Fourteen cases of general paralysis were treated with the bromides of potassium and ammonium with variable results; but the general effect of the bromides appeared to be to tranquilize the system. Eleven cases of epilepsy were also subjected to treatment by the bromides, the patients being selected in consequence of their extreme irritability and proneness to violence. The results did not prove that these drugs have the power to diminish permanently the number or the severity of the fits, but they afforded evidence of their influence in allaying some of the most violent manifestations of the disease. The bromide of cadmium was tried in eleven cases of mania, with a view to relieve severe temporary excitement, and in doses of one grain it was found to exert a

very rapid and powerful effect, causing abundant vomiting and some purging, diminution in the force of the pulse, and temporary mental quietude, bordering on depression. Dr. Belgrave concludes, from his observations, that the bromide of potassium is antiphlogistic, and a sedative to the cerebro-spinal functions; that it subdues the force of the pulse and induces loss of flesh and debility, and that it exercises a powerful temporary effect over the number of fits in epileptic cases. The bromide of ammonium resembles the bromide of potassium in its action, but is less powerful, and does not induce emaciation or general depression. The bromide of cadmium is probably an irritant to the mucous membrane of the alimentary canal, its brief but marked calmative effect being principally the depression following the action of a powerful emetic and purgative. The action of this drug resembles that of tartar-emetic or sulphate of zinc, but it has treble the power of the former and twelve times that of the latter (*sic*). It is said by Dr. Belgrave to be exceedingly useful in severe exacerbations of mania.—*Journal of Mental Science*, October, 1865—*Brit. & For. Med. Rev.*, Jan., 1866.

ART. XXIII.—*On a Case of Hystero-Epilepsy in a little Girl, treated successfully by the Bromide of Potassium.*

A little girl, aged ten, had been subject for three years to attacks of a serious but anomalous character, consisting in sudden starting from sleep during the night, with a violent shriek and inexplicable terror, but without the other usual symptoms of epilepsy. After the attack was over the child remained dull and bewildered, not being able to answer questions, and soon sinking into a deep sleep, but without snoring. These attacks subsequently appeared in the day as well as the night, and were accompanied by strange and wayward conduct, the digestive functions languished, the appetite was lost, and the general strength was very much reduced. The administration of iron and quinine, and of valerian in iffusion, produced some temporary alleviation, but the fits afterwards increased in frequency and intensity, and at last hardly a fortnight elapsed without an attack; and in addition to the other phenomena, a dangerous one was added, consisting in a propensity on the part of the child to precipitate herself from any open outlet, and which nearly cost her her life on one occasion when she was near an open window. She became a patient under the care of M. Blache, and having been kept without treatment for a few days in order to ascertain the reality of the alleged attacks, she was ordered to take a mixture containing 10 grammes (about zijss) of bromide of potassium in 100 grammes of water; two teaspoonfuls the first day, two dessert-spoonfuls the second, and two tablespoonfuls the third, half an hour after food. Under this treatment the attacks entirely ceased, and the child left the hospital; but the treatment which had been discontinued for a week, was to be resumed and continued in order to guard against future attacks.—*Bulletin Général de Thérapeutique*, Dec. 30th, 1864—*Brit. & For. Med. Rev.*, Jan., 1866.

Bibliographical Record.

Medical Diagnosis, with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. Da Costa, M. D., Lecturer on Clinical Medicine, and Physician to the Philadelphia Hospital, etc., etc. Illustrated with engravings on wood. 8vo., pp. 690. J. B. Lippincott & Co., Philadelphia, 1864.

This is probably the most valuable work contributed to the medical literature of this country during the past five years, and at some future day we hope to be able to present our readers with an analysis of its contents. To the numerous graduates of the Philadelphia schools within the past ten or twelve years the name of the author is a sufficient guarantee of the quality of his book, as during that time Dr. Da Costa, although not occupying a professor's chair, has become extensively and most favorably known as an accomplished scholar, a skillful practitioner, and an eminent teacher.

We take this opportunity of stating, however, that the "Medical Diagnosis" is not intended for beginners in medicine, whether graduates or under-graduates, as it is based upon a large, practical acquaintance with the profession which the reader is presumed to possess. To those who have mastered the elements and become familiar with the ordinary characteristics of diseases, and who desire to perfect themselves in the art of medicine—Trousseau denies that it is a science—we know of no better guide. The plan of the work may be gathered from the following statement contained in the preface :

"In executing my undertaking two plans offered themselves—either to describe morbid states, in compliance with the usual pathological classification followed in treatises on the Practice of Medicine, or to group them according to their marked symptoms. The former plan would have been far the easier, but the latter seemed to me the more suitable for a volume of this kind; and although it has involved much labor, and has rendered the task much more difficult of accomplishment, its advantages appeared to me so great that I have adopted it throughout.

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"In connection with this, however, I have endeavored to take cognizance of the prognosis of individual affections, and, where it could be done without interfering with the plan of the book, to give a summary of their treatment."

We may farther add, that so far as we have examined, there is no

mention in the volume of the late "wicked rebellion;" no denunciation of "Southern traitors;" no advice to the Administration at Washington to hang Mr. Davis. Dr. Da Costa is thoroughly imbued with his subject, and does not turn aside to assure the world of his "loyalty," as some men have thought it necessary to do in works professedly as exclusively scientific as the one before us.

The United States Dispensatory. By GEORGE B. WOOD, M. D., President of the American Philosophical Society, Emeritus Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc., etc., and FRANKLIN BACHE, M. D., late Professor of Chemistry in Jefferson Medical College, etc., etc. Twelfth edition. 8 vo., pp. 1704. J. B. Lippincott & Co., Philadelphia, 1865.

IT is only necessary to chronicle the fact that this much and deservedly valued work has been thoroughly revised upon the basis of the new United States and British Pharmacopœias. The work needs no commendation at our hands. It is recognized by every one as unrivalled in any language. The labor bestowed upon the present edition is enormous, and, owing to the death of Professor Bache, has fallen entirely upon Professor Wood, who, at the close of the preface, thus calmly speaks of his approaching end, and courteously takes leave of the profession in which he has so long and successfully labored.

"Finally, it may be permitted to the surviving author to say that, considering his advanced age, it is hardly probable that he will live to see or at least participate in another revision, and, under these circumstances, to express his warm thanks to the members of the medical and pharmaceutical professions, who have in so many ways evinced a kind regard for him personally, and a disposition to judge favorably, if not partially, of his works."

A Comprehensive Medical Dictionary; Containing the Pronounciation, Etymology, and Signification of the Terms Made Use of in Medicine and the Kindred Sciences. By J. THOMAS, M. D., 8 vo., pp. 784. J. B. Lippincott & Co., Philadelphia, 1865.

THE bulky and we may say overgrown size to which Professor Dunglison's widely circulated dictionary has recently attained has created a felt want in the profession for a work of equal merit upon a smaller scale. Dr. Thomas has supplied this want, and we sincerely commend his book to all who desire a dictionary of moderate dimensions. At the close of the volume is an appendix, comprising

a complete list of all the more important articles of the Materia Medica, arranged according their medicinal properties; and also an explanation of the Latin terms and phrases occurring in Anatomy, Pharmacy, etc.; together with the necessary directions for writing Latin prescriptions, all of which will be found of exceeding value to medical students and young graduates. Indeed, we are not sure but what some old graduates would be benefited by a careful study of this section.

Lectures on Venereal Diseases. By William A. Hammond, M. D., 8 vo., pp. 287. J. B. Lippincott, Philadelphia, 1864.

The work of Dr. Hammond consists of a series of twenty well written lectures, five of which were delivered a few years since at the Baltimore Infirmary and published in the *American Medical Times.* The remaining fifteen were written out after the author had been created Surgeon General of the United States Army, from which position he was expelled by a military commission in 1864, upon charges which are generally believed to have been unjust and cruel.

It is only necessary at present to enumerate some of the points of difference between the teachings of the author and most modern writers upon syphilis.

1. Dr. Hammond espouses the doctrine of the duality of the venereal (syphilitic) poison; ascribing soft, simple, or non-infecting chancre to one species and indurated or infecting chancre to another and wholly different species.

2. He utterly denies the possibility of constitutional infection from soft chancre.

3. He does not admit the usual separation of the symptoms of constitutional syphilis into two distinct stages, secondary and tertiary.

4. He contends for the contagiousness of constitutional syphilis.

5. He teaches that gonorrhœa is the result of the contact of syphilitic virus with a mucous surface, and as there are two distinct species of this poison so there are two totally distinct species of gonorrhœa.

6. He is a believer in the communicability of syphilis by vaccination.

All these points are ably discussed, and numerous original observations and experiments are related in their support. The book is well worth a careful perusal, however, much we, and most of our readers

we presume, may be disposed to differ with the writer upon many important questions.

The publishers have our sincere thanks for the handsome manner in which they have done their work. The paper and type are really superb; superior to anything of the kind that has ever before been done for medical literature in this country.

A System of Surgery, Pathological, Diagnostic, Therapeutic and Operative. By SAMUEL D. GROSS, M. D., Professor of Surgery in the Jefferson Medical College, etc., etc., 2 vols., 8 vo., pp. 1049 and 1087. Fourth Edition. Blanchard & Lea, Philadelphia, 1866.

TAKING its size and costliness into consideration this is the most successful work on any branch of medicine that has ever been published in this country. It is now but seven years since the first edition was issued, and such is its popularity, or we should rather say such is the high value placed upon it by the profession, that three large editions have been exhausted and a fourth is now placed in our hands. In all these successive issues the reader will find that the distinguished author has been laboriously employed in adding and improving. As a monument of industry, genius and good judgment the work is unrivalled in English medical literature, and by means of translations is finding its way into all the countries of continental Europe. It needs no commendation at our hands, the universal judgement of the profession having already pronounced upon its superior excellence.

A Treatise on Gun-Shot Wounds. By T. LONGMORE, Deputy Inspector of Hospitals, Professor of Military Surgery at Fort Pitt, Chatham, 12 mo., pp. 132. Republished by J. B. Lippincott & Co., Philadelphia, 1863.

THIS is a most admirable little treatise on the subject of gun-shot wounds, and well worthy of the high reputation which its author possesses in his own country. The publishers, as in many other of their recent publications, have added largely to its intrinsic merits by the handsome manner in which it is printed.

Cholera: Facts and Conclusions as to its Nature, Prevention and Treatment. By HENRY HARTSHORNE, A. M., M.D., Fellow of the College of Physicians of Philadelphia, etc. J. B. Lippincott, 1866, 18 mo., pp. 79.

THIS monograph, on a subject of interest to every one at the present time, is valuable for the clearness with which the writer expresses his

views, which are nowise behind the knowledge already possessed of the origin, nature and treatment of the most terrible malady of the age.

He agrees with the most intelligent writers of the day, that it is a systemic disease, the morbid cause acting through the blood. How this *cause* acts he graphically remarks: "Cholera is, then, I say, a poison-spasm, a ganglionic tetanus." Thus he accounts for the derangements in the functions of organic life, the enormous drain from the blood in its circulation through the abdominal viscera, the spasmodic closure of the gall-duct, the shriveling of the skin, the dyspnœa, and finally the cramps of the voluntary muscles.

As to causation, he rejects entirely the idea of contagiousness, for reasons before well known and generally admitted by medical men, and believes in its portability only to a very limited extent, through fomites. He dissents from the theories of Snow, Pettenkofer and Parkes, who agree that the cholera poison is found in the dejections, but differ as to its mode of propagation—views which he remarks to be the most prevalent in England. After stating his objections to the other modes of accounting for the resistless march of the destroyer, he declares his belief in the organic nature of the morbific agent. While he considers the phenomena of the disease more easily referable to an animalcular than to a vegetative influence, he hints a tendency to the belief in a third organic kingdom, intermediate between animals and plants. This view has been advanced by the late Dr. Wilson and J. Cassin, and for the new kingdom he proposed the name *primalia*, including sponges, many infusoria, volvocineæ, diatoms and desmidiæ. The conditions favorable to the multiplication and migration of the cause he believes to be "*animal matter in a state of rapid and foul decomposition;* putrefaction, along with moderately high (not the highest) temperature, and ordinary moisture."

As a means of prevention, he regards quarantine totally inefficient, useless, and, as often enforced, pernicious. On the other hand he says: "I insist that *sanitary police* includes the sum total of available measures for the prevention of cholera in any place."

His plan of treatment is based upon his belief in the nature of the disease, and he consequently discards blood letting, evacuants, injection of the venous system with saline and other liquids, opium in large doses, and calomel altogether. As being consistent with his theory, and verified by the most successful results in his hands, he recommends: "*Treatment by antispasmodics and mild stimulants, in*

small doses at short intervals ; with ice and external frictions, etc." In the premonitory stage, he considers rest, warmth, and mild, composing, but gently stimulating draughts, as safe and generally efficient remedies.

In the second, or rice-water stage, he uses the following: "R. chloroform, tinct. opii, spt. camphor, spt. ammon. aromat. *aa* f. ʒiss; creasoti gtt. iij; olei cinnamom gtt. viij; spt. vin. gal. f. ʒij.—M. Dissolve a teaspoonful of this in a wineglassfull of ice-water, and and give of that two teaspoonfuls *every five minutes*, followed each time by a lump of ice."

As measures of great importance during cholera epidemics he recommends—"*house to house visitation*, and *houses of refuge*. The latter, especially, is of notable importance; that is, the establishment of houses of refuge in *salubrious places*, into which persons from tainted districts most liable to the disease may be received on the occurrence there of the first cases." "House to house visitation by sanitary inspectors to abate nuisances, small and great, and by medical men to treat premonitory symptoms, might also have great preventive value."

Instructions in the Preparation, Administration and Properties of Nitrous Oxide, Protoxide of Nitrogen, or Laughing Gas. By GEORGE T. BARKER, D. D. S., Professor of Dental Surgery, etc., Philadelphia, pp. 61. Rubencame & Stockton, Philadelphia, 1866.

WE are in receipt, from the publishers, Messrs. Rubencame & Stockton, Philadelphia, for which we here make acknowledgements, of a little work of sixty-one pages, handsomely bound, and at the same time, with an eye to durability, on the subject of Nitrous Oxide. It is also known by the title of Protoxide of Nitrogen and Laughing Gas. The author of the book, GEORGE T. BARKER, D. D. S., Professor of the principles of Dental Surgery and Therapeutics in the Pennsylvania College of Dental Surgery, etc., etc., states in his preface that, "An excellent monograph by Geo. T. Ziegler, M. D., on the medical properties and applications of nitrous oxide, has been published, and from its pages I have derived many valuable suggestions, to which I shall hereafter refer. This is the only work with which I am acquainted that is devoted exclusively to this subject, but as Dr. Zeigler considers its use principally as a medicine, I have therefore deemed that a work containing suggestions as to the preparation, administration, chemical, physiological and anæsthetic properties of nitrous oxide, might not be inappropriately offered to the professional

public. On these subjects much remains to be learned, but it is hoped that by offering my own experience, it may stimulate investigation and research, so that nitrous oxide may eventually stand on its own intrinsic merits." Nitrous oxide consists chemically of "one-third of oxygen to two-thirds of nitrogen." The author says, "the anæsthetic properties of protoxide of nitrogen are due to stimulation; and in this respect it differs from ether and chloroform, which act by producing sedation." It is said not to produce "emesis, unless it is administered immediately after eating."

Now in regard to its use: "If the operation is only one requiring a minute or two for its performance, a bag, holding not less than seven or eight gallons, should be used, but if a longer time is required, the gas-bag will necessarily have to be of greater capacity. The patient should then be instructed to take full inspirations from the bag, previously, however, to the first inhalation, being required to empty as perfectly as possible the lungs of atmospheric air. The nostrils should be tightly closed by the person who is administering the gas, so that no atmospheric air passes in with the nitrous oxide. An assistant should always be present to hold the bag or adjust the rubber tubing so that the flow of gas is not arrested."

"The first evidence of anæsthesia, with the majority of persons, is snoring, not deep stertorous breathing as seen in anæsthesia from chloroform or ether, but more like the snoring of deep, heavy sleepers. Snoring does not usually occur when the patient is in a recumbent position, the only test of insensibility being the relaxed condition of the muscular system."

"Anæsthesia will usually occur in from half a minute to ten minutes, and if it is not induced in three or four minutes, the eight gallon bag should be removed and one much larger substituted."

"In my experience with nitrous oxide as an anæsthetic, I have found that its influence upon the system usually passes off entirely in about three or four minutes after the removal of the inhaler; but there are few who are insensible to pain for this length of time. The period of insensibility is usually not more than a minute or a minute and a half. Patients, after its administration, generally express themselves as feeling quite well, not particularly invigorated, as has been urged by some enthusiasts on the subject, but as well as when they commenced its inhalation."

It is by no means innocent in its operation, for the author records several fatal cases. He considers it contraindicated "in cases of

seriously diseased hearts, either functional or organic, in active congestion or acute inflammation of the brain, lungs or kidneys;" and to be used "with the greatest caution where there was a general plethoric condition, or where there was a tendency to the hæmorrhagic diathesis."

"The danger of nitrous oxide consists in the fact that it increases oxidation of the fluids and solids of the body, and also acts as a stimulant to the brain and nervous system; where there exists any predisposition to congestion or inflammation, the administration of nitrous oxide may develop this latent tendency and a fatal result ensue."

We hope the foregoing may be a fair presentation of the author's style, while it will illuminate, in some degree, the subject of which he treats. In one or two of the Philadelphia hospitals, it has been substituted for ether and chloroform. Hitherto it has been circumscribed in its use to dentists, but at present it is extending to the medical profession, and therefore naturally claims the attention of our readers.

We have no personal experience in the premises. One of the most respectable and scientific dentists in this city, and who has an extensive practice, informed us that he infinitely preferred chloroform. He administered the oxide of nitrogen only when asked to do so. Whenever the patient asked his advice, he always recommended chloroform. He tells us that it turns the persons inhaling it deathly pale, and if any friend be present at the time of its inhalation, this condition of intense paleness at once excites his or her alarm, which is soon propagated to the patient and so puts an end to its employment. To succeed with it at all, no third party, not familiar with its mode of action, must be present. He furthermore stated that its effects were entirely too evanescent for an operation involving more than a few minutes, and did not think it would answer for surgery at all.

It is, however, proper to examine into its deserts, the more so as it is beginning to attract considerable attention. In this view we recommend it to our readers.

Clinical Notes on Uterine Surgery, with special reference to the Sterile Condition. By J. MARION SIMS, A. B., M. D., late Surgeon to the Woman's Hospital, New York, etc., etc. William Wood & Co., New York, 1866.

THIS remarkable book, comprising about 400 pages, is from the pen of our distinguished countryman now residing in London. The first labors of Dr. Sims that attracted attention to his skill as a surgeon

in this special department, were made at Montgomery, Alabama, and his early observations were often contributed to this journal. Seeking a wider field for his genius, he repaired to New York, where his talents, energy and knowledge speedily acquired for him a world-wide reputation.

Dr. Sims left the land of his birth, not from choice, but from causes beyond his control. He thus remarks :

"In 1862, I voluntarily left my own country on account of its political troubles. Our unfortunate civil war continued much longer than any of us, North or South, anticipated. In consequence of this, my residence abroad was prolonged far beyond my original intention. I therefore had time to look over my note books, and to cull such facts as illustrate the method of treating Uterine Disease at the Woman's Hospital."

This treatise is therefore rendered more valuable from the fact that it is based on observations purely clinical. The author states that "this collection of clinical notes lays no claim whatever to the character of a systematic work. It is simply a voice from the Woman's Hospital, which, in all probability, would never have been heard if I had remained at home."

Dr. Sims succinctly states in the following words, the various subjects treated in this work : "What are the conditions essential to conception ? 1. It occurs only during menstrual life. 2. Menstruation should be such as to show a healthy state of the uterine cavity. 3. The os and cervix uteri should be sufficiently open to permit the free exit of the menstrual flow, and also to admit the ingress of the spermatozoa. 4. The cervix should be of proper form, shape, size and density. 5. The uterus should be in a normal position, i. e., neither ante-verted nor retro-verted to any great degree. 6. The vagina should be capable of receiving and of retaining the spermatic fluid. 7. Semen with living spermatozoa, should be deposited in the vagina at the proper time. 8. The secretions of the cervix and vagina should not poison or kill the spermatozoa.

"I lay these down as postulates, embracing the general principles or laws most favorable—indeed, essential to fecundation ; and I propose to take them up seriatim, and to show, from clinical experience, wherein the sterile condition differs from the fecund, and to point out, so far as we know, the surest methods of relief."

The distinguished writer treats the topics above mentioned with the familiarity of the master. He is original in conception, persevering under difficulties, logical in his deductions, and has, above all, opened

the way to the development of a subject that has been a stumbling block to the medical profession. We commend this work to our readers, and trust to be able, on a future occasion, to contrast the views of this author with those of other writers upon the same important subject.

Syllabus of a Course of Lectures Delivered in the Alabama Medical College, Mobile. By J. C. NOTT, M. D., Professor of Surgery. Pp. 188. J. B. Lippincott & Co., Philadelphia, 1861.

THIS is a systematically arranged and well digested synopsis of the course of lectures delivered by Dr. Nott, in the Mobile College. Although intended for those students who might avail themselves of Dr. Nott's instructions, yet we can safely recommend it to the attention of all students who are listening to the usual courses of lectures on surgery, delivered at any of the medical colleges of the United States. Students have not time during the brief curriculum of lectures to consult and master the huge works usually contributed to this department of medical literature; and Dr. Nott evidently has had practical illustration of the difficulties encountered by students when he remarks: "There being no text-book well adapted to the short course of instruction in the schools of the United States (like those of Dorsey and Gibson, in their day), I felt the want of a more regular plan, for my own convenience, and some printed guide to direct their reading."

It is a valuable guide for the beginner.

Contributions to Bone and Nerve Surgery. By J. C. NOTT, M. D., Professor of Surgery in Mobile Medical College. Philadelphia, J. B. Lippincott & Co., 1866. Pp. 96.

THIS little volume, of scarcely one hundred pages, has a simple, unpretending name, but withal it is a valuable contribution to that department of surgery in which every practitioner skilled in this science has been compelled to labor, not only during our civil war, but since its termination. Dr. Nott states that his object is to illustrate "a department of surgery which has been strangely neglected and in which there is a remarkable want of medical literature, viz: the *sequelæ* of gunshot and other injuries of bone."

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"Guthrie, McLeod, Ballingall, Hennen, Baudens, Dupuytren, and other writers on military surgery, have well covered the ground of what might be called *primary* and *secondary* surgery; but here they stop, and we are left to grope our way in the dark in *tertiary* surgery.

None of them follow up the shattered and diseased bones for months and years, and give us well defined rules by which we are enabled to treat this large class of tedious, painful, and dangerous sequelæ."

Although Dr. Nott is "writing more particularly for the instruction of the younger members of the profession," we are of the opinion that many who have had diploma in hand for a considerable period of time, would be benefited by a careful perusal of this booklet. Previous to the war the injury of bones from gunshot were comparatively rare, and only a few surgeons had their attention directed to the treatment of this important and troublesome class of cases.

The book is divided into two parts; the one giving the nature of the different grades of inflammation attacking bone and its exterior and interior investing tissues; the other being a highly interesting exposition of Dr. Nott's mode of treating the consequences of gunshot injuries of bone. The first part is so admirably digested as to give within a few pages the essence of the knowledge possessed by the profession concerning the principles and practice of bone pathology; and Dr. Nott then, in a logical manner, applies the information he has acquired, and deduces from his vast field of observation conclusions of great practical value to the profession.

Dr. Nott opposes the practice advocated by some surgeons, of interfering at an early period with the projecting and denuded end of a bone after amputation. He says: "Where a bone projects from an open, suppurating stump, under any circumstances, it will require at least a month, and probably six or eight weeks, before the stump can be healed, whether the bone is on or off. Experience teaches that nature will amputate the bone, and generally at a very good point, by the time the rest of the wound closes up to the margin, and thus do away with the necessity of amputation by the surgeon; the absorbents set to work, at the line between the dead and living bone, and in from four to eight weeks, the work is complete, and the skin closes over it." The objection urged by the author against untimely operations, "is the danger of extending the necrosis, by exposing a fresh surface of bone to unhealthy pus of the stump. This must necessarily be the most common result; the projecting bone to be removed dies because it is exposed to air and pus, and the surface exposed by the second operation is likely to be followed by similar result, from the same causes. We have already laid down the general rule, that no attempt should be made to remove a sequestrum before it is completely detached, and the same rule applies to these stump cases.

"There is, however, sometimes a sequel to some of these cases, that requires surgical interference. It happens where nature has performed the amputation of the projecting bone, and the soft parts have completely covered it over, that a *conical stump* results, and the end of the bone being covered merely by a thin cicatrix of new skin, it is tender, easily chafed, or hurt by slight injuries, inflames, sometimes ulcerates, is troublesome in various ways, and particularly if an artificial limb be worn. In such cases the conical form of the stump is increased by the retraction of the muscles, and it thus becomes quite pointed. Under such circumstances, it is often good surgery to cut down upon the projecting bone, detach freely its coverings, and saw it off an inch or two within the soft parts, when a rapid cure usually follows. Here we are operating on tissues, all of which are sound, and union by first intention ensues."

These views are certainly founded in clinical experience. Although the periosteum is held to be the chief tissue concerned in the formation of bone, yet, says the author, "there is every reason to believe that the surrounding tissues play a decided and important part in this osseous deposit, for I have seen, in the humerus, particularly where the weight of the forearm drags down the lower fragment in fractures after considerable loss of bone, or rather perhaps holds the lower fragment about the position it held before the injury, the muscles not contracting with force enough to draw it up—I say I have seen in such cases a gap of full two inches hedged over and around by cortical formation, inclosing an internal cavity filled with fragments. The proof of this bony formation filling up the interspace was given in the facts, that bone, periosteum, and all were removed for at least two inches, and yet perfect bony union took place *without any shortening of the limb.*"

Before closing this interesting little volume, the distinguished author contributes the details of two cases of neuralgia possessed of singular interest. Speaking of the first case in which the sciatic nerve was finally divided at its point of exit from the pelvis, Dr. Nott adds: "This case is certainly one of the most remarkable on record in several points of view. The limb was first crushed by a railroad car, he was afterward subjected to three amputations of the leg, one of the thigh, and three resections of the nerve. It is interesting too in a pathological and physiological point of view. It is unusual to see inflammation follow up the trunk of a nerve as it did in this case, and it is difficult to say why the pain should invariably be referred to the extremity of four stumps in succession."

The author describes the second case as having "a tumor, which had been growing fifteen years on the front of his forearm; it had never interfered with the functions of the hand or arm, and had never given the slightest pain or inconvenience until two or three months before consulting me, when it commenced giving him a good deal of pain in the fingers, and produced partial contraction of the little and ring fingers.

"The tumor was about the size of a cocoanut, oblong or egg-shaped, and extended from an inch below the bend of the arm to within an inch of the wrist; it was elastic, and presented the characteristics of an encysted tumor."

"* * * I made an incision its whole length along a line drawn from the tendon of the biceps muscle to the center of the wrist. On dissecting down carefully, I discovered, to my surprise, that it was a neuromatous encysted tumor. At its upper part the trunk of the median nerve was seen to enter it, and immediately to expand its fibers widely over the whole anterior surface of the sac; at the lower border of the tumor they were again collected into a common trunk. The expanded fibers were so completely incorporated with the sac that it was impossible to liberate them from it by dissection. I therefore divided the nerve above and below the tumor and dissected out the entire mass. The adhesions were slight, and there was no difficulty in turning out the sac, which had been punctured and partially evacuated. It is remarkable that the contents of the sac presented the appearance simply of grumous blood, though of fifteen years standing. Vidal de Cassis, in his *Pathologie Externe*, reports a case very similar in every respect, the only one I know on record.

"Though interesting pathologically, I have reported this case mainly on account of its physiological bearing.

"Although at least five inches of the median nerve were removed, its functions were not interferred with in the slightest degree. The operation was followed by neither paralysis nor loss of motion, and the neuralgic pains, which had occurred two or three months previously to the operation, disappeared entirely. I have been in the habit of meeting this gentleman frequently during the twelve months which have followed the operation, and he assures me all the functions of the fingers are perfect.

"The tumor had been growing slowly for fifteen years, and as the function of the median nerve was probably gradually destroyed, nature made provision to supply its place; but *how* it was done, I must leave to wiser heads than mine to explain."

In conclusion, we express the hope that Dr. Nott may find time amid his arduous duties to contribute his observations concerning other cases of bone and nerve surgery; and we would inform our young surgeons that profit can be derived from a perusal of this instructive volume.

Editorial.

The New Orleans Medical and Surgical Journal.

THE present issue of this Journal constitutes No. 1, Volume XIX. With the completion of the XVIIIth volume in May, 1861, the Journal was reluctantly withdrawn from publication; because the political dissensions of that period prevented the transmission of the various numbers to its long list of friends and subscribers, as well as prohibited an exchange with similar periodicals, whether domestic or foreign.

After a suspension of the Journal during five eventful years in our country's history, we are now permitted to hope for a renewal of those agreeable relations which were maintained for a long series of years between editors and subscribers. We trust, moreover, that no other course of events may ever again interrupt, in our section, the steady progress of the Arts and Sciences; and that this journal may meet with no hindrance in the laudable undertaking of directing a few thoughts towards the cultivation of medical literature.

As a narration of the facts connected with the origin and subsequent history of this journal may not prove totally devoid of interest to our various readers, we append the following brief record.

In May, 1844, Drs. E. D. Fenner and A. Hester, published the first number of the NEW ORLEANS MEDICAL JOURNAL. At that period there was no other medical journal south of Louisville, Kentucky.

During the following year, 1845, a new journal being projected by Drs. W. M. Carpenter and J. Harrison, under the title of the LOUISIANA MEDICAL AND SURGICAL JOURNAL, a union of medical journals was made by the parties interested. But this efficient combination promising a brilliant career for the Journal, was destined to sudden and unexpected changes; for as early as March, 1848, the fourth year of the Journal's existence, Dr. E. D. Fenner withdrew from the editorial corps, and in July of the same year, Dr. W. M. Carpenter followed

his example. In July, 1849, Dr. J. Harrison resigned his association with the management, thus leaving Dr. Hester sole editor and proprietor until his death, on the first day of December, 1853. In 1855, Mr. H. McCulloch purchased the assets of the Journal from the succession of Dr. Hester, and he, in turn, transferred his claims to D. C. Jenkins & Co., of the Daily Delta, in July, 1856. In September, 1857, the Journal became the property of Drs. Warren Stone, James Jones and Stanford E. Chaillé, and in January, 1859, the present managers, Drs. Stanford E. Chaillé and William C. Nichols, assumed proprietary control.

Thus this oldest periodical of the Southwest, originating twenty-two years ago, has come down through many vicissitudes to the present period, with no interruption in the succession of its volumes, save that which was accidental, unavoidable, and wholly dependent upon the great revolutionary crisis from which we have just emerged.

Thus set forth under the guidance of its able and energetic projectors, it became the pioneer that stimulated other similar enterprises, and, in this manner, has drawn forth the hitherto almost dormant talent of physicians of the southwest; because by this means has been afforded to them a suitable medium of recording and exchanging views of vast import to the profession as well as to the laity. No other previous adventure into the difficulties of medical journalism guided our predecessors; yet an inconquerable determination to present to their professional brethren a worthy channel for the dissemination of opinions upon topics of vital moment to both the agricultural and commercial interests of the country traversed by the Mississippi and its tributaries, led them with faith towards the accomplishment of the commendable task that had engaged their sympathies and talents. Actuated by the same high purposes that inspired the orginators of the Journal, it is the firm resolve of the present editors not only to attempt the maintenance of that fair fame which was acquired previous to its unavoidable suspension, but at the same time to infuse into it that spirit of enterprise which the calamities of the past have developed throughout our whole community. Indeed, an invisible power, a constant longing for action, seem to impel our people to expand their aims and give increasing momentum to every industrial pursuit. This eagerness of our people for perpetual progress, this manly struggle to recall former prosperity which was retarded or wholly lost by the destructive elements of war, "has the solemnity of a providential event; it is like a deluge of men rising unabatedly and daily driven onward by the

hand of God." This impulse already given cannot be easily arrested. Hostile fanaticism may obliterate law, or may abolish important institutions, thus retarding for a season the impetus that has been given; yet no power can close up the fertile wilderness which offers resources to industry and a solace from every want, nor change our balmy breezes into simoons that will dry up our majestic rivers at the fountains, and convert the luxurious growth of our soil into impoverished and distasteful herbs.

Whilst agriculture, commerce, and the mechanic arts advance, shall scientific pursuits receive no favor, but stand despised and neglected? Physicians of the Southwest cannot be blind to the events that are constantly transpiring around them. A new era in our social existence is displacing old landmarks, and while former levels are being heaved up by revolutionary change, it certainly becomes every member of our community to assist in molding, as it were, this transition state to the benefit of all classes, whether their hopes rely on the adaptation of science, literature, manufacture, or the arts to their various wants. Occupying important positions in every community, it behooves physicians to direct their powers in the bestowal of benefits upon society. Educated for the most part beyond the capacity of those who form the mass of mankind, they should estimate the high relation they bear to the state as well as to individual man. Especially should this thought impress the minds of those occupying fields of usefulness and importance in our Southern land. Government and society are being formed anew upon the wreck of the old systems, and the present occasion demands the care, the wisdom and the energy of every educated man in our midst. The time seems to be rapidly approaching when our people, crushed by the fatal termination of a desolating war, may be permitted to stand erect, and freed from fetters, assert their claims to a voice in the councils of the nation. Should the promise of that prosperity which seems to cherish every heart be realized, the hitherto unknown wealth and resources of our country will be developed by the willing efforts of our people; and every vocation, from that of the humblest laborer and mechanic to the learned professions, will be taxed to their utmost limits in order to comply with the necessities of a land teeming with every species of wealth and inexhaustible revenue. Whoever fails to comprehend the wonderful events of this era, and to translate their precise issue and import, whoever adheres to the old and obselete customs of the past, must be content to mourn over his incredulity and deficiencies, and to behold himself surpassed by every

tyro engaged in the race of life. As education is intended to confer benefits both upon the possessor as well as upon those with whom he is brought in contact, it becomes the duty of the medical profession, standing as it were, upon the threshold of organic changes in law and customs, and identified with the interest of various communities, to regard it a high privilege to contribute their fund of knowledge to the common good. Sympathizing with those who surround them, physicians are impelled to impart knowledge and relieve suffering with due courtesy and freedom from disdain and imperious dictation. The people are the very foundation of society; and if their ignorance is contemned, indiscriminate ruin must implicate each component part of our governmental and social system. It is even now the opprobium of medicine, that many varieties of nostrums have found their way into every community, and the well educated physician is robbed of the fees that enrich the purses of dissembling quacks. Is not the cause of this imposture rather the error of the medical profession than wholly that of the people? Some by act, others by a culpable reticence assist in the propagation of empiricism—standing aloof from the issue, concealing knowledge under the guise of inflated terms, and failing in their conceit to declare the right. It is scarcely wrong to call him a traitor to his race who possesses knowledge and withholds it as hidden treasure. If the people are required to honor the profession of medicine, and accord to every man of scientific attainment the high rank his talent and labor should command, their minds should be fashioned by unveiling before them, in intelligible phrase, such medical truths as will enable them to detect the arts of the empiric, who would, by the magic and specific influence of his compound, wreck manly vigor, or destroy the healthful hue of beauty.

The editors, therefore, are gratified to be able to unfold anew the pages of this journal to their friends and former contributors, who may find therein a proper means for recording their knowledge and experience. Those who followed the camp and hospital through the eventful years just past, can, doubtless, contribute a valuable fund of information to our medical literature. He who assists his fellows by suggesting skillful treatment that cures disease or modifies suffering, or who dictates hygienic regulations that ward off epidemics and purify the atmosphere of our cities, robs our climate of its greatest terror, leaves to his race the richest legacy, and deserves to have his name recorded with that of Jenner and the long list of humanitarians whom mankind claim as the common inheritance of our race.

Nitroglycerine.

PUBLIC attention has recently been drawn to this substance by the disastrous results of its explosion on more than one occasion, and many inquiries have been made as to its manufacture and properties. Little is to be found upon the subject in the elementary works on Chemistry in general use.

Nitroglycerine or Glonoine was discovered by Sobrero some twenty years ago, has since been examined by Railton, De Vrij and other chemists, but has remained a mere chemical curiosity until recently, when a Mr. Nabel has endeavored to bring it into use upon the large scale as a substitute for gunpowder in blasting.

It may be prepared by cautiously dropping pure glycerine—the now well-known sweet principle of oils and fats—into a mixture of equal parts, by measure, of strong nitric and sulphuric acids. The acids should be kept cool by ice or a freezing mixture, the glycerine added drop by drop, and the mixture well shaken after each addition. It is important to prevent any considerable rise of temperature, as thereby other products would be obtained and even explosion of the portion of nitroglycerine already formed might be produced. After a while the new substance separates as a pale yellow, oily looking liquid, which may be purified by pouring into distilled water, washing repeatedly by decantation, and removing adherent water by means of blotting-paper. It has also been proposed to dissolve the crude liquid in alcohol, and reprecipitate it by water. Nitroglycerine is heavier than water, possesses no distinct smell, but has a sweetish aromatic taste. It appears to act energetically upon the nervous system, as a single drop placed upon the tongue produces severe headache, principally in the back of the head, lasting for several hours. It is violently explosive, detonating either when struck or heated—one drop is sufficient to produce a very loud report. It is said to explode at about 360° Fahrenheit. It is very slightly soluble in water, more readily dissolved by alcohol and ether. When heated with a solution of caustic potash it is decomposed, producing glycerine and nitrate of potash.

The results of different analyses have led to formulæ for nitro-glycerine which represent it as glycerine in which either two or three of the eight atoms of hydrogen have been replaced by per-oxide of nitrogen. It unquestionably belongs to the same class of substances with pyroxylin or gun-cotton, nitro-mannite. When cotton wool is immersed in strong nitric acid, or a mixture of this with sulphuric

acid, and after a short time thoroughly washed with water, it is found on drying to have become explosive, and has exchanged a portion of its hydrogen for per-oxide of nitrogen. The same change may be produced with the sugar of manna and some other substances. In the case of gun-cotton it is well ascertained that the amount of hydrogen thus displaced is variable, depending upon the strength of the acids, the proportion in which they are mixed, the time during which the cotton is immersed, and at the same time the degree of explosiveness of the product is much affected. This may very possibly explain the discrepancy of the analytical result with reference to nitro-glycerine, and such uncertainty of composition may be one of the sources of danger connected with its use.

The explosive power of this substance appears to be, as in the case of gun-cotton, much greater than that of an equal weight of gunpowder. If the new material shall be found of decided practical value for blasting purposes it is much to be desired that such investigation shall be made as may establish the precautions as to preparation, transportation, and use necessary to prevent the recurrence of such terrible accidents as those recently reported. The last explosion—that of an English steamer at Panama—is said to have involved the loss of fifty or sixty lives, and the destruction of more than a million dollars' worth of property.

Necrological Notices.

DR. WILLIAM RUSHTON, M. D., died in New Orleans, after a brief illness, on the 21st day of November, 1862, at the age of 54 years.

He was born near Bolton, Lancashire, England, in 1808. He studied the profession of medicine in Edinburg, Scotland, and graduated at the famous school of that city in August, 1827. In order, however, to observe disease under the treatment of other leading lights of medical science, he repaired to London, and continued two years longer in the prosecution of his studies.

The first professional duties to which Dr. Rushton devoted his services was the position as surgeon to one of East India Company's ships to Calcutta. At the conclusion of this voyage, which occupied his attention for one year, he returned to England, and immediately sailed for New Orleans, and arriving in this city in 1832, he determined to make his home in the great emporium of the Southwest. After a residence of two years he married Miss Elizabeth West, a

daughter of an estimable family, and connected with many of the most highly refined and influential of our Creole population.

From the moment of the arrival of this young and enterprising stranger in this city, he began a career of usefulness, and attained a degree of eminence as a practitioner rarely enjoyed by medical men; for he was affable in manner, intelligent in conversation, well versed in the practical details of a learned profession, possessed of energy and decision of character, and armed with these elements of success, he so speedily entwined himself around the hearts of our people, as to render his untimely loss a serious public calamity. Generous and warm-hearted, he assisted the needy with his bounty, entirely free from pride or ostentation. Taught by the pure waves and free winds that bore him to these shores to love freedom of speech and action, he became intimately identified with the manners, customs, and institutions of our people; and when political strife arose, he mingled his sorrows with his friends, and grieved with profound sympathy for the cause of those with whom he had passed a well-spent life, and who had saluted him, a stranger in a strange land, with kindness. His heart was a fountain of goodness and benevolence, and, going to his grave without an enemy, he "rests from his labors, and his works follow him."

Though buried far away from the graves of his fathers, his bier was moistened by the tears of affection, and his memory will be long held dear by friends who saw within him the soul of honor and generosity. May God comfort the bereaved hearts of those within that home which knows him no more!

DR. ERASMUS DARWIN FENNER, M. D., died in New Orleans on the fourth day of May, 1866. He did not long suffer the pangs of disease, for a short illness quickly severed the slender cords of life. Indeed, but few of our citizens were aware that this man of energy was feble in strength, and that an abrupt period was about to terminate his career of public service.

Dr. Fenner was a native of Franklin, North Carolina. His father, who was a physician, educated him to the practice of the medical profession, and he first entered upon the arduous duties of his calling at Clinton, Mississippi. Seeking a wider field for the exercise of his talents, he made his residence in this city in 1840. His first undertaking that directed public attention to his labors, was the organization, in conjunction with Dr. A. Hester, of the *New Orleans Medical*

Journal, which was begun in 1844, and from this effort originated the present New Orleans Medical and Surgical Journal. His next effort for good was the establishment of the "New Orleans School of Medicine," and since the termination of our disastrous political strife, he interested himself in establishing the *Southern Journal of Medical Sciences.*

At all times ambitious of success, Dr. Fenner struggled to attain an enviable distinction among his fellows. In order to confer benefit upon his beloved section, he often attempted to penetrate the mysteries surrounding the origin and cause of the malignant febrile diseases of the Southwest. His efforts were constantly directed to the improvement of the sanitary condition of our city, and in the last paper given by him to the medical profession "the lamented author sums up his observations in regard to a question which is of present and paramount interest to the people of New Orleans. He is discussing epidemic diseases and quarantine, and says :

"'All efforts hitherto made to prevent their extension by means of quarantine and sanitary cordons have failed, and we have but little reason to hope they will ever succeed. For twenty years we and some others have labored to convince the people of New Orleans that the only way to make the city healthy is *to make and keep it clean.* But we have labored in vain. In the mysterious course of events, the hand of the tyrant has been brought to our aid, and the results are marvelous. Will our citizens profit by this experience, and continue to enforce their health ordinances, as the Federal authorities enforced them? If they do not, the consequences will surely be deplorable.'

"This is our lamented friend's last professional will and testament to the people whom he loved so well, and of which, when reading them over, on his bed of sickness, he said to his associate : 'The future will prove these words to be true.'"

Business Notice to our Subscribers, *New and Old.*

THE undersigned proprietors are gratified to have it in their power to announce to their patrons, that the encouragement, to resume this publication, is sufficient to ensure its ultimate success. The unorganized, defective condition of the postal service throughout the Southern States is our only source of serious anxiety. To overcome this difficulty, we must rely, in great degree, on the information

and advice furnished by our subscribers, and on our mutual efforts and patient forbearance.

Returning from the recent war with ruined hopes, and impaired fortunes, we have, by resuming this enterprise, incurred heavy pecuniary obligations, which we are in no condition to acquit, except by the prompt fulfilment of your pledges. Enclosed, therefore, in each copy, every subscriber will find his account, to which his immediate attention is expected. The subscription price, though large, will still be inadequate to more than satisfy the expense of publication, unless multiplied by many more hundreds of subscribers than experience justifies us in anticipating. The proprietors look therefore to the future, not the present for their reward, and well know that their severe daily labors will go unrecompensed for many weary months.

Many of our subscribers, who are also our old debtors call in question the correctness of our bills against them; some even implying that these accounts are evidences against us of gross mismanagement or worse. To them, a few words are due for our good names' sake. In January, 1861, you were notified, that unless your indebtedness was promptly discharged, you would force the suspension of our publication. In July, 1861, you were informed that having failed to meet your obligations, we were no longer able to contribute every two months hundreds of dollars from our private purses to sustain a Journal, whose just debts you neglected to pay; and that therefore it would be suspended, until the existing revolution should be terminated, and your credit reëstablished. You cannot have forgotten the financial as well as political embarrassment of that period, when all the peaceful arts and their obligations were waived or thrust aside to yield their places to those of "grim visaged" war, and should you inspect our cash-book of that date, you would surely recognize the fact, either, that the proprietors cheated *themselves*, or that you failed to pay them your debts. Notwithstanding these indisputable facts, the mail daily brings us so many claims that you have paid your accounts, that, trusting your memory, rather than the testimony of our books and emptied pockets, we must have received a larger amount the disastrous year of this Journal's suspension, than during any preceding year of its greatest prosperity. That you *ought* to have paid is certain, that you *intended* to pay is not doubted, but that ninety-nine in a hundred of you recall that *duty* and *intention* to the forgetfulness and exclusion of the fact, that you *did not pay*, is well known to your unfortunate creditors, ourselves. That a careless

clerk may at times erroneously copy a bill, that some collections may have been made by agents who have failed to report them, we have reason to believe; but that money sent to this office, received and receipted for by the proprietors, has been neglected to be properly credited on our books, is true in so very few instances, that we would cheerfully agree to forfeit in cash double the amount of every incorrect bill found in any five sent out after inspection by the proprietors, provided the other four would agree to pay us in cash, even one half they owe us. In fine, whilst we cannot claim infallibility in our accounts, we do know that in every hundred of those claiming to have paid, ninety-nine are mistaken; though we may not be able to take oath which *one* it is out of the hundred, who *may* be right.

These old ante-bellum debts, small in detail, large in aggregate, are, although of serious importance, a vexatious incubus on the proprietors, which we desire so earnestly to be freed from, that we will accept any terms of settlement a conscientious man can offer by which our books may be promptly cleansed of such accounts. We therefore propose that those of you, who acknowledge the correctness of your bills, pay them in "greenbacks" and without the five years interest due; which interest amounts at eight per cent. on the total debt to more than $4000; that those of you pay, *one-half* our debt against you, who "think" or "believe" or are "quite sure" you have paid, and "will find the receipt" somewhere at sometime, provided, "the Yankees did not burn' or "destroy it"; or whose copies of the Journal, we are now, for the first time, informed, never came to hand for the time charged, for we are not responsible for the faults of the mail. That, those of you who *know* you have paid, *notify us*, not our agents, that you *never intend* to pay, for we are soliciting tardy justice, not your charity. In such case, your debt will be erased and you relieved in future from dunning letters, and importunate collectors nuisances, vexations to both parties. Should you have paid agents, they may have failed to report such collections, therefore your notification should furnish, if possible, the signature and date of your receipt, to assist us to recover our losses. The only *authorized general* agents of this journal prior to 1866, were for the States east of Texas, Jas. Deering, and assistants employed by him, Mr. Wiley and R. W Morrison; and for Texas, D. Richardson, succeeded by Richard Leake; and we have no reason to question their honesty.

Debts to professional brothers, who have no means of enforcing their collection, should properly be deemed debts of honor. Surely

our terms of settlement are not unreasonable, viz. to pay all, that you acknowledge due ; half of that in regard to which there is reasonable doubt ; nothing of that you *know* is not due, except a notificaton, that you never intend to pay it. By acting promptly on this proposal, you will confer a favor, and relieve us of much annoying correspondence. Neither side, certainly not ours, has anything to gain by disputes over these individually insignificant debts. We are candidates for your professional patronage, and any debtor, though he has sinned against us a whole decenniad, (and alas! for our credulity, we have had even some of these) can secure for the current year our new journal, an offspring of science, therefore a messenger of peace and good will, by enclosing the price thereof, leaving past accounts to be regulated by the terms above proposed.

DRS. CHAILLE & NICHOLS
Editors and Proprietors N. O. Med. and Surg. Journal.

List of Journals Received.

We take pleasure in acknowledging the receipt of the following periodicals:

Atlanta Medical and Surgical Journal—Edited by Drs. J. G. and W. F. Westmoreland. 1866.

The American Journal of Science and Arts—Conducted by Professors Silliman & Dana, New Haven.

The Cincinnati Journal of Medicine—Edited by Drs. Geo. C. Blackman, T. Parvin, and R. Bartholow.

The Cincinnati Lancet and Observer—Edited by Drs. E. B. Stevens and John A. Morphy.

The Chemist and Druggist—London.

Gazette des Hospitaux Civils et Militaires—Paris.

The London Lancet—*N.* C. Herald, Agent, New York.

The Medical Reporter of Medicine and Surgery, St. Louis—Edited by Drs. J. B. Alleyne and C. F. Potter.

The Boston Medical and Surgical Journal—Edited by Drs. Samuel L. Abbott and James C. White.

The Medical and Surgical Reporter—Edited by Dr. S. W. Butler, Philadelphia.

The Medical Record—Edited by Dr. Geo. F. Shady, New York.

The Chicago Medical Examiner—Edited by Dr. N. S. Davis.

The Pacific Medical and Surgical Journal—Edited by Dr. Henry Gibbons, San Francisco.

Southern Journal of the Medical Sciences—Edited by Drs. E. D. Fenner, D. W. Brickell and C. Beard, New Orleans. Drs. W. S. Mitchell, A. W. Perry and J. Holt, Assistants.

The Medical News and Library—Philadelphia.

The Medical and Surgical Monthly—Edited by Drs. Frank A. Ramsey, D. D. Saunders, E. M. Willett and Wm. H. White.

The New York Medical Journal—Miller & Mathews, New York.

The Richmond Medical and Surgical Journal—Edited by Drs. E. S. Gaillard and W. S. McChesney.

The New Orleans Medical Record—Drs. B. Dowler and S. R. Chambers, Editors.

Books and Pamphlets Received.

Clinical Notes on Uterine Surgery, with special reference to the Management of Sterile Condition—By J. Marion Sims, A. B., M. D., late Surgeon of the Woman's Hospital, New York. Pp. 401. William Wood & Co. New York. 1866.

Cholera; Facts and Conclusions as to its Nature, Prevention and Treatment—By Henry Hartshorne, A. M. M. D., etc. Pp. 79. J. B. Lippincott & Co., Philadelphia. 1866.

Descriptive Catalogue of Fluid and Solid Extracts in Vacuo, also Concentrated and Officinal Pills—Henry Thayer & Co., Cambridgeport, Massachusetts. 1866.

A Manuel of the Principles of Surgery, based on Pathology for Students—By Wm. Canniff, Licentiate of Medical Board of Upper Canada, etc., etc. Pp. 402. Lindsay & Blackiuston, Philadelphia. 1866.

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits—By Wm. Roberts, M. D., Fellow of Royal College of Physicians, London, etc. Pp. 512. Henry C. Lea, Philadelphia. 1866.

A Treatise on the Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine—By Austin Flint, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, etc. . etc. Pp. 858. Henry C. Lea, Philadelphia. 1866.

Instructions in the Preparation, Administration and Properties of Nitrous Oxide, Protoxide of Nitrogen or Laughing Gas—By Geo. T. Barker, D. D. S., Professor of Dental Surgery, etc. Philadelphia. Rubencame & Stockton. 1866. Pp. 61.

Reflex Paralysis; Its Pathological Anatomy and relation to sympathetic Nervous System—By M. Gonzales Echaverra, M. D. (of Paris) etc. Balliere & Brothers, New York. Pp. 60. 1866.

The Palmer Arm and Leg, etc.

Boston Wheat and Bread Co.—Dr. Danglish's System, etc.

Cholera; Its Characteristics, History, etc., etc—Pamphlet. Pp. 57. By William B. Fletcher, M. D Cincinnati. Robt. Clarke & Co. 1866.

Clinical Lectures—By Professor A. Von Græfe, Amblyopia and Amaurosis and the Extraction of Cataract. Translated from the German by Haskit Derby, M. D. Pamphlet. Pp. 86. Boston. David Clapp & Son. 1866.

THE NEW ORLEANS
Medical and Surgical Journal,

TO ITS

CORRESPONDENTS, SUBSCRIBERS, CONTRIBUTORS, ADVERTISERS, AND AGENTS.

GENERAL INFORMATION.

1.—Office at the Medical College, Common St., near Baronne St Office Hours—10, A. M. to 12, M. The publication of this, the oldest medical journal in the South-west (suspended with the May No., 1861), was resumed in July, 1866, with No. 1 of Volume XIX. It is published every two months. Each volume contains about 1000 pages; and beginning with the July, ends with every May No. of the succeeding year.

Editorial Corps—Professors Warren Stone and James Jones; Drs. S. E. Chaille and W. C. Nichols. They are aided by Profs. T. G. Richardson and J. W. Mallet, of New Orleans, Prof. J. C. Nott, of Mobile, Prof. S. M. Bemiss, of Louisville, and other distinguished physicians

TO CORRESPONDENTS.

2.—All Communications should be addressed to "Drs. Chaille & Nichols, N. O. Med. & Surg. Jour., New Orleans, La.," and should be legibly signed with the name in full, followed by the Post Office, County and State. If on their business, and not the Journal's, a postage stamp should be inclosed, to secure a reply. A favor will be conferred by adding to letters a list of the physicians, with their Post Offices, in the county of the correspondent; also, any recent deaths and removals of physicians.

TO SUBSCRIBERS.

3.—Terms.—$8 per annum, in advance; $10 per annum, if not in advance; $1 50 for single copies. For 100 Extra Copies of articles, 8 pages in length, $10; every additional 100 copies, $6

4.—Subscribers must either inclose with each order $8, in advance, or a written promise to pay $10 at a specified date.

5.—Money sent in letters registered "Valuable," is at the proprietors' risk, provided, that if such letter be lost, the Postmaster's receipt or certificate of the amount sent, and the date when mailed, be subject to the order of the proprietors for inspection. All payments are promptly acknowledged, by returning the receipt therefor. Payments should be made to no person representing himself as our agent, unless he is advertised in this journal as an agent, or possesses the Proprietors' written authority to collect, etc. Payments made to agents should be at once reported to the Proprietors

6.—A subscriber, ordering the Journal, without specifying any limit to his subscription, will be considered a subscriber, until his written order to discontinue is received. If the number is not specified with which his subscription is to begin, it will be begun with the first number of the volume of the current year.

7.—The Proprietors are responsible to subscribers for their numbers of the Journal, only so far as to insure their proper delivery at the post office. When, however, prompt notice is given, that the number due has not been received, a second copy of such number will be forwarded.

8.—Mr Thomas Adams, one of the agents of this Journal, in this city, will for a small commission, attend to any orders sent to the Proprietors, for Medical Books, Instruments, Drugs, Vaccine, etc., provided the price of such article be forwarded with the order. The Proprietors will give to articles so purchased such supervision as will prevent imposition.

TO CONTRIBUTORS.

9.—Original Articles forwarded for publication should be written on one side only of each page, should be forwarded two months in advance of the number it is intended for, and must not be previously published in any other columns. Extra copies desired should be ordered with the contribution. Articles accepted will be liberally paid for, if so understood when accepted. Articles rejected are subject to the author's order. No anonymous articles will be accepted, nor any matter exclusively personal admitted, except as an advertisement.

TO ADVERTISERS.

10.—Terms.....One page, per annum, $75; for one insertion, $15
One-half page, do. 40; do. do. 10
One-quarter page, do. 25; do. do. 5

No advertisement received for less than one quarter page; nor one, on any terms, which encourages charlatanism or tends to detogate from the honor and interest of the profession.

TO AGENTS.

11.—Booksellers, Druggists, Postmasters, and other responsible persons, will be allowed to deduct a liberal per centage for all money collected, whether from the sale of copies of this Journal, from subscription fees, or from advertisements. On application, with satisfactory references, written authority will be given the applicant, to act as agent for this Journal. All agents must report promptly all payments, giving the name and address in full, the date and amount of the payment, and the date *to which* receipt was given; and should furnish lists of the physicians in their own and adjacent counties.

Agents are notified, that, though the accounts *to*, and prior to July, 1861, are in all but a *very few* exceptional cases, correct, yet that in very many cases, they are disputed by the debtor. They are authorized to compromise them for any sum which they deem it to the interest of the proprietors to accept As these debts amount to more than $10,000, they cannot be totally sacrificed.

TO BOOK PUBLISHERS, INSTRUMENT MAKERS, DRUGGISTS, Etc.

12.—Specimens of recent medical publications, instruments, drugs, etc., will receive such notice as they may merit.

THE

New Orleans Medical & Surgical Journal.

SEPTEMBER, 1866.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

Art. I.—INSTINCTS OF RACES:

By J. C. Nott, M. D., *Professor of Surgery, Medical College, Mobile, Ala.* (Concluded.)

In the July number of this journal was published the first part of an article on the *Instincts of Races*, which I now purpose to conclude.

The object has been to show from the physical and civil history of mankind, that the unadulterated Races, such as the Whites, the Negroes, the Mongols, and American Indians are "*Permanent Varieties*," possessing moral and physical traits which are unchangeable from any known causes, so long as the race is kept pure, to say the least, during the lifetime of a nation—that each type has its peculiar instincts and adaptations, which cannot be obliterated by climate or Freedmen's Bureaux—and that governments can never legislate wisely, without giving due consideration to these important facts.

That the White men, Indians and Negroes, now on the continent of America, will preserve their respective types, like Bulldogs, Greyhounds and Foxhounds, if the blood is not mixed, no sane man can doubt. The instincts always have, and always will, follow

the types, and when a superior race is adulterated by an inferior, it never fails to produce a worthless mongrel.

The leading object of this essay was to prove that the negro is instinctively opposed to agricultural labor, and the remainder of it will be taken up almost exclusively with extracts from the pamphlet alluded to at the beginning, on "*Free Negroism.*"

It may be objected that "such kind of stuff" does not properly find a place in a scientific journal; but, on the other hand, it must be remembered that man's civil history is a part of his *natural history*, and that a faithful picture of a race cannot be drawn without including with the physical the moral and intellectual history, habits, actions, etc. This subject is not one for mere idle speculation and curious scientific research—it is one of immense practical interest to the people of the United States at this time, and it is our duty calmly to enquire what is to be the future of the white and black races of this continent.

The teachings of Ethnology have been fully vindicated in the history of the American Indians, and it requires no prophetic vision to see that our country is destined soon to complete the sad story of negro slavery and negro emancipation, so well elucidated by the experience of the West India Islands.

Dr. Franklin was the leader, backed by a number of the best and wisest men of Pennsylvania, of a benevolent association in Philadelphia, whose object was to "*form a plan for the promotion of industry*, intelligence and morality among the free blacks."

Its utter failure is shown in the report of another benevolent association, viz., the "Boston Prison-discipline Society," forty-seven years after, in its first annual report, in 1826, which shows by statistics, that from one-third to one-half of the convicts in the prisons at the North were free blacks and mulattoes, though the colored population formed but a small portion of the whole. This report says, "The first cause existing in society, of the frequency and increase of crime, is the *degraded character of the colored population.* The facts which are gathered from the Penitentiaries, show how great a proportion of the convicts are colored, even in those States where the colored population is small, and prove most strikingly the connection between ignorance and vice." The report might have added, that all efforts at educating the negroes to any useful extent, in Africa and America, had failed, and there has been no improvement in their prison or almshouse statistics from the time of the first emancipation act in Pennsylvania to the present day.

The Colonization Society, which was put in operation by some of our ablest and most patriotic men, is but an outgrowth of this emancipation failure.

It became evident that the idle and vicious negro population were becoming an incubus on our society, and that the attempt to improve their morals and habits of industry was hopeless. It was moreover evident that there was an antagonism of races unfriendly to the progress of the blacks while among us; and it was therefore thought best to send them back to Africa, where their native clime, "liberty, equality and fraternity," together with the fostering care of philanthropic societies, missionaries, etc., would all combine to give them such advantages as no infant colony ever had before. But what has been the result? Let the utter failure of Liberia tell the tale. So signal had been the failure of abolitionism in benefiting either the blacks or the whites, that the progress of its party was stayed for a time, until, as Mr. Seward tells us, they at last had reared "a generation educated to hate slavery." They cried, but no one listened. They expostulated, but the public heeded them not. The freed negroes of the North were a standing monument to the folly of abolitionism. They had not progressed, or shown themselves active, enterprising members of society. They would black boots, whitewash and do other menial offices, and they would hold conventions and pass ridiculous resolutions, but as *for clearing up land and settling themselves in independent circumstances, they would not.* In 1852 Gerrit Smith, who has done more for freed blacks than ony other man, for he gave all who would accept them, free homes on his lands, complained in a letter to Governor Hunt that "the most of them preferred *to rot, both physically and morally,* in cities, rather than become farmers or mechanics in the country." His own experiment with them resulted in signal failure. Even Horace Greely, in a moment of apparent forgetfulness, declared in the *Tribune,* September 22d, 1855, that "nine-tenths of the free blacks have no idea of setting themselves to work except as the hirelings or servitors of white men; no idea of building a church or other serious enterprise, except through beggary of the whites. *As a class, the blacks are indolent, improvident, servile and licentious.*"

The free colored population before the war were — in New England, 23,021; in New York, 50,000; in the little State of Maryland, 84,000!; in Pennsylvania. 46,000. Altogether the free colored population of the United States was about half a million; and

how, let us ask, were they employed? No where regularly in agricultural labor!

We quote from the pamphlet under review: "When emancipation took place in Jamaica, in 1834, it was loudly heralded that free labor in the West Indies would soon render "slavery" entirely unprofitable in the United States. Mr. Birney encouraged his followers with this hope, and William Lloyd Garrison even made the confident prediction that the "American slave system must inevitably perish from starvation." George Thompson, the English abolitionist, who came over to this country about that time to fan the flame of anti-Southern agitation, declared that "soon all slave-labor cotton would be repudiated by the English manufacturers." The labor of free negroes was to accomplish all this, for it was presumed that freedom would give an impetus to production, and that the enterprise and industry of the freed black men would soon far outstrip the resources of those countries where "the unprofitable and expensive system of slave labor" was still adhered to. The millennium was thus, in 1833, but just a step ahead of the abolitionists. They had almost clutched the El Dorado of negro perfection. But alas! for their confident anticipations and positive predictions. In six years the answer came, and it was as follows: In 1800 the West Indies exported 17,000,000 lb. of cotton, and the United States 17,789,803 lb. They were thus at this time about equally productive. In 1840 the West Indies exported only 866,157 lb. of cotton, while the United States exported 743,941,061 lb.! Instead, therefore, of the "American system dying of starvation," as Garrison predicted, or of the British spinners refusing to use 'slave-grown' cotton, England went right on manufacturing 'slave-grown' cotton, while her "philanthropists," to keep up the delusion, began to talk about raising cotton in Africa, by free negro labor there, and they have kept on *talking* about it, and all the while *using* the productions of "slave labor."

The history of Hayti is but a repetition of the same tale. This island, one of the most fertile spots on the globe, contains 27,000 square miles. It is difficult to arrive at the exact population, as *negroes nowhere keep statistics*, but it was known in 1790, under the French government, to contain about half a million; and, according to the best estimates, there has been little or no increase in the last seventy-five years. About 38,000 of the population under the French régime were whites.

Hayti was in high tide of prosperity at the time of the revolution, which terminated in the act of emancipation, in 1793. Every one is familiar with her relapse, under black rule, into African barbarism; and the following statistics will speak for themselves, as to the *instinctive horror of the negro for agricultural labor.*

In 1790 the value of the exports from Hayti was $27,828,000, the principal productions being as follows:

Sugar	163,405,220	lb.
Coffee	68,151,180	"
Cotton	6,286,126	"
Indigo	930,016	"

In 1849, the latest date of which we have any reliable statistics, and sixty years after emancipation, the exports of the above named articles were as follows:

Sugar	None.	
Coffee	30,608,343	lb.
Cotton	544,516	"
Indigo	None.	

As negroes keep no statistics, it is impossible to ascertain with accuracy the present value of the exports, but, from the best information attainable, it can reach little beyond $1,000,000; though Mr. Sumner places it, in one of his speeches, at about $2,500,000.

Mr. Underhill, on the spot, could get no statistics.

"In order to show the present condition of Hayti more fully, we quote from a work just published in London, entitled *The West Indies — their Moral and Social Condition.* The author, Mr. E. B. Underhill, was sent out by the Baptist Missionary Society of London, and is an abolitionist of the deepest dye. While finding all the excuses he can for the decay of the island, he is forced to own the truth. He describes his journey to Port au Prince as follows:

'We passed by many or through *many abandoned plantations, the buildings in ruin,* the sugar-mills decayed, *and the iron pans strewing the roadside, cracked and broken.* But for the law that forbids, on pain of confiscation, the export of all metals, they would long ago have been sold to foreign merchants.

'Only once in this long ride did we come upon a mill in use; it was grinding canes, in order to manufacture the syrup from which *tafia* is made, a kind of inferior rum, the intoxicating drink of the country. The mill was worked by a large over-shot or water-wheel, the water being brought by an aqueduct from a very considerable distance. With the exception of a few banana-gardens, or small patches of maize round the cottages, nowhere did this magnificent and fertile plain show signs of cultivation.

'In the time of the French occupation before the revolution of 1793, thousands of hogsheads of sugar were produced; *now, not one. All is decay and desolation.* The pastures are deserted, and the prickly pear covers the land once laughing with the bright hues of the sugar-cane.

'The hydraulic works, erected at vast expense for irrigation, *have crumbled to dust. The plow is an unknown implement of culture*, although so eminently adapted to the great plains and deep soil of Hayti.

'A country so capable of producing for export, and therefore for the enrichment of its people — besides sugar, coffee, cotton, tobacco, the cacao-bean, spices, every tropical fruit, and many of the fruits of Europe — *lies uncultivated, unoccupied, and desolate.* Its rich mines are neither explored nor worked; and its beautiful woods rot in the soil where they grow. A little logwood is exported, but ebony, mahogany, and the finest building timber rarely fall before the woodman's axe, and then only for local use. The present inhabitants despise *all servile labor*, and are, for the most part, content with *the spontaneous productions of the soil and forest.*'"

JAMAICA affords but a repetition of the same story. It contains 4,000,000 acres, and is the largest and most valuable of the British West India Islands. The census of 1861 gives the following figures: whites, 13,816; mulattoes, 81,065; negroes, 346.374. The whole number of persons who can read, is set down at 80,724, and 50,726 as able to read and write. It will be seen from this that over 300,000 can neither read nor write. Education is evidently confined to the whites and mulattoes. In the holy name of Sumner, what has the evangelical "Freedmen's Bureau" been doing! Why have not these darkies been whitewashed?

Agriculture, the useful arts and education always go hand in hand. No people that refuses to labor in agriculture, commerce and the mechanic arts, can be driven to education.

In 1805 the products of Jamaica were as follows:

Sugar	150,352	hhds.
Rum	46,837	punch.
Pimento	1,041,540	lb.
Coffee	17,961,923	"

The very year after the act of gradual emancipation, which was in 1833, the products of the island began to diminish. The decrease went on steadily, until the following are the returns for the year 1856:

Sugar	25,920 hhds.
Rum	14,470 punch.
Pimento	6,848,622 lb.
Coffee	3,328,147 lb.

The only crop that had increased was that of pimento, or allspice. As the plantations were abandoned, they became overrun with this tree, and the negro women and children picked the berries, as our Indians do blackberries, without the trouble of cultivation.

The coffee tree, to a certain extent, is like the pimento, and grows

wild in many places. Hence the production of coffee has not fallen off in the same proportion as that of sugar, which can be produced only by careful and laborious cultivation. The coffee crop, however, in 1813, before the overthrow of slave labor, was 34,045,585 lb., but the average crop of the past ten years has not been over 5,000,000 lb.; while the sugar crop had fallen in 1853 as low as 20,000 hhds.; and were it not for the small white population in Jamaica, as in Hayti there would not be a single hogshead of sugar produced!

"The rapidity with which estates have been abandoned in Jamaica, and the decrease in the taxable property of the island, is also astounding. The movable and immovable property of Jamaica was once estimated at £50,000,000, or nearly $250,000,000. In 1850 the assessed valuation had fallen to £11,500,000. In 1851 it was reduced to £9,500,000, and Mr. Westmoreland, in a speech in the Jamaica House of Assembly, stated it was believed, that the falling off would be £2,000,000 more in 1852. From a report made to the House of Assembly of the number and extent of the plantations abandoned during the years 1848, '49, '50, '51 and '52, we gather the following facts:

Sugar-estates abandoned,	128
" " partially abandoned,	71
Coffee-plantations abandoned,	96
" " partially abandoned,	66

"The total number of acres thus thrown out of cultivation in five years was, 391,187! This is only a sample, for the same process has been going on ever since emancipation. In the five years immediately succeeding emancipation, the abandoned estates stood as follows:

Sugar-estates, 140,	168,032 acres.
Coffee-plantations, 465,	188,400 "

"These plantations employed 49,383 laborers, whose industry was, therefore, at once lost to the world, and the articles they had raised were just so much subtracted from consumption. The price of these articles, sugar and coffee, was increased on account of the diminished production, and that increased cost represented the tax which the world paid for the privilege of allowing Sambo to loll in idleness. The *Cyclopædia of Commerce* says, 'that *the negro is rapidly receding into a savage state*, and that unless there is a large and immediate supply of immigrants, *all society will come to a speedy end*, and the island become a second Hayti.'

"Such, then, is the condition of Jamaica, as stated in an impartial work. Let us hear now what the London *Times* candidly owns up to. It says:

'There is *no blinking the truth*. Years of bitter experience, years of hope deferred, of self-devotion unrequited, of prayers unanswered, of sufferings derided, of insults unresented, of contumely patiently endured, have convinced us of the truth. It must be spoken out loudly and energetically, despite the wild mockings of 'howling cant.' *The freed West India slave will not till the soil for wages*: the

free son of the ex-slave is as obstinate as his sire. He will not cultivate lands which he has not bought for his own. Yams, mangoes and plantains — these satisfy his wants; he cares not for yours. Cotton, sugar, coffee and tobacco he cares but little for. And what matters it to him that the Englishman has sunk his thousands and tens of thousands on mills, machinery and plants, which now totter on the languishing estate that for years has only returned him beggary and debt? He eats his yams and sniggers at 'Buckra.' We know not why this should be, but so it is. The negro has been bought with a price — the price of English *taxation* and English *toil*. He has been redeemed from bondage *by the sweat and travail of some millions of hard-working Englishmen*. Twenty millions of pounds sterling — one hundred millions of dollars — have been *distilled from the brains and muscles of the free English laborer*, of every degree, to fashion the West India negro into a 'free, independent laborer.' 'Free and independent' enough he has become, God knows, but laborer he *is not;* and, so far as we can see, *never will be*. He will sing hymns and quote texts, but honest, steady industry he not only detests but *despises*.'

"Such is the testimony of the London *Times* — such the universal evidence of every candid individual. How different is this picture from that predicted by the abolitionists. The Rev. Dr. Channing, the Dr. Cheever of that day, made the following prophecy in 1833, as the result of emancipation:

'The planters, in general, would suffer little, if at all, from emancipation. This change would make them *richer*, rather than poorer. One would think, indeed, from the common language on the subject, that the negroes were to be annihilated by being set free; that the whole labor of the South was to be destroyed by a single blow. But the colored man, when freed, will not vanish from the soil. He will stand there with the same muscles as before, only strung anew by liberty; with the same limbs to toil, and with *stronger motives* to toil than before. He will work from *hope*, not fear; will work for himself, not for others; and unless all the principles of human nature are reversed under a black skin, he will work *better than before*. We believe that agriculture will revive, our worn-out soils will be renewed, and the whole country assume a brighter aspect under *free labor*.'

"Ex-Governor Wood, of Ohio, who paid a visit to Jamaica in 1853, and who is no friend to "slavery," says:

'Since the blacks have been liberated, they have become indolent, insolent, degraded and dishonest. They are a rude, beastly set of vagabonds, lying naked about the streets, as filthy as the Hottentots, and I believe worse. On getting to the wharf of Kingston, the first thing, the blacks of *both sexes, perfectly naked*, come swarming about the boat, and would dive for small pieces of coin that were thrown by the passengers. On entering the city, the stranger is annoyed to death by black beggars at every step, and you must often show him your pistol or an uplifted cane, to rid yourself of their importunities.'

"Sewell, in his work on the *Ordeal of Free Labor*, in which he defends emancipation, and pleads for still more extended privileges to the blacks, says of Kingston:

'There is not a house in decent repair; not a wharf in good order; no pavement, no sidewalk, no drainages, and scanty water; no light. There is nothing like work done. Wreck and ruin, destitution and neglect. The inhabitants, taken *en masse*, are steeped to the eyelids in immorality. The population shows unnatural decrease. Illegitimacy exceeds legitimacy. Nothing is replaced that time destroys. If a brick tumbles from a house to the street, it remains there. If a spout is loosened by the wind, it hangs by a thread till it falls; if furniture is accidently broken, the idea of having it mended is not entertained. A God-forsaken place, without life or energy, old, dilapidated, sickly, filthy, cast away from the anchorage of sound morality, of reason and of common sense. Yet this wretched hulk is the capital of an island the most fertile in the world. It is blessed with a climate the most glorious; it lies rotting in the shadow of mountains that can be cultivated from summit to base with every product of tropic and temperate region. It is the mistress of a harbor wherein a thousand line of battle ships can ride safely at anchor.'

"We might fill a volume with such quotations, showing the steady decline of the Island. But it is well to note the moral condition of the negro. The *American Missionary Association* is the strongest kind of abolition testimony in regard to the moral condition of the negroes. The *American Missionary*, a monthly paper, and organ of the Association, for July, 1855, has the following quotation from the letters of one of the missionaries:

'*A man here may be a drunkard, a liar, a Sabbath-breaker, a profane man, a fornicator, an adulterer, and such like — and be known to be such — and go to chapel and hold up his head there, and feel no disgrace from these things*, because they are *so common* as to create a public sentiment in his favor. He may go to the communion-table, and cherish a hope of heaven, and not have his hope disturbed. I might tell of persons, guilty of some, if not all of these things, ministering in holy things.'

"The report of the American and Foreign Anti-Slavery Society, for 1853, p. 170, says of the negroes:

"Their moral condition is very far from being what it ought to be. It is exceedingly dark and distressing. *Licentiousness prevails to a most alarming extent among the people.* * * * * * * * * * The almost universal prevalence of intemperance is another prolific source of the moral darkness and degredation of the people. The great mass among all classes of the inhabitants, from the governor in his palace to the peasant in his hut — from the bishop in his gown to the beggar in his rags — are *all slaves to their cups.*"

"So much for "freedom" elevating the blacks. It is complained that the marriage relation is not always regarded where "slavery" exists, but it would seem from this statement, that "slavery" had done more for the moral improvement of the negro, in this respect, than he was at all disposed to do for himself."

Such is the melancholy history of Hayti and Jamaica, the two grandest islands of the Antilles, and such is the history of all the rest where emancipation has been imposed. Here might we close

the picture, had not Trinidad and Barbadoes been held up by desperate abolitionists, as evidence of the success of emancipation. Again we take their own evidence, as we have in all we have said about the West Indies, to disprove their one-sided assertions.

Mr. Underhill says: "Three years after emancipation in 1841, the condition of the island was deplorable; the laborers had, for the most part, abandoned the estates and taken possession of plots of vacant lands, especially in the vicinity of the towns, without purchase or lawful right. Vagrancy had become an alarming habit of great numbers." In short, he tells us that every thing went on here as in Hayti and Jamaica.

"With the help of Vagrant Acts and other legislative enactments, somewhat like order was established; and the introduction of Coolie labor has enabled Trinidad to recover from the state of poverty into which it has been plunged. The island, however, has been compelled to burden itself with a debt of $725,000, on account of the expenses of the Coolie slave-trade, which is disguised under the name of apprenticeship.

"According to Lord Harris, one-fourth of the entire negro population of Trinidad, in 1850, were living in idleness. Estates were wholly abandoned, and poverty stalked abroad. The Coolie labor arrested this downward tendency. Between 1847 and 1856, 47,739 Coolies were introduced into the West India possessions of Great Britain, the greater portion going to Trinidad and Guiana. These 47,739 protests against the idleness of the negro, have about doubled the production of sugar in Trinidad — raising it from 20,000 to 40,000 hogsheads. But no thanks to the negro for this. It is none of his doings. Mr. Underhill declares that NOT ONE-FOURTH of the persons employed on the estates are negroes. Hence this increase in the sugar production of Trinidad is no evidence of the benefit of emancipation, but just the reverse.

"The case of Barbadoes is still more emphatic, though the abolitionists are never tired of referring to that island as the proof positive of the success of 'free negro labor.' Now, what is Barbadoes? Well, it is a small island, about large enough for a good-sized watermelon patch. It is about 21 miles long by 14 wide, and contains 100,000 acres of land, all told. It has 150,000 inhabitants, and is more thickly settled than China. There is not an acre of wild or unimproved land; not room, as Trollope says, 'for a pic-nic.' This land is monopolized by the whites; and, under a rigid system of vagrant laws, the black is compelled to work. If an idle negro is seen, he is set to work, at wages, or else compelled to DRAG A BALL AND CHAIN on the highways. Mr. Trollope says: 'When emancipation came, there was no squatting ground for the poor Barbadian. He had still to work and make sugar — work quite as hard as he had done while yet a slave. He had to do that or to starve. Consequently, labor has been abundant in this island only.' Now, how this 'capsizes' all the stuff the anti-slaveryites tell us about Barbadoes! Not long since there appeared in the *Independent*, of this

city, an article glorifying emancipation as it had affected Barbadoes. Gov. Hinks, of that island, published a letter in proof of it, and in it occurs this remarkable admission:

'In Barbadoes, I have explained already that wages have ranged from 10*d.* to 1s. per task, and that rate prevails generally. In addition to these wages, a small allotment of land is usually given, but on a most uncertain tenure. The laborer may be EJECTED AT ANY TIME ON A FEW DAYS' NOTICE, and he is subjected to PENALTIES FOR NOT WORKING ON THE ESTATE.'"

The author very properly remarks: "The negroes have simply changed masters, and are now in a worse condition than under the old system."

Now, by way of contrast, let us see what Mr. Underhill says about Havana, the port of a slave-labor island:

"It is the BUSIEST AND MOST PROSPEROUS OF ALL THE CITIES of the Antilles. Its harbor is one of the finest in the world, and IS CROWDED WITH SHIPPING. Its wharves and warehouses are piled with merchandise, and the general aspect is one of GREAT COMMERCIAL ACTIVITY. Its exports nearly reach the annual value of NINE MILLIONS STERLING ($45,000,000), and the customs furnish an annual tribute to the mother country over and above the cost of government and military occupation. EIGHT THOUSAND ships annually resort to the harbor of Cuba."

"Evidently Mr. Underhill had got into a new world. He saw it, and was struck with the contrast it presented to the dilapidated region he had just left. In order to show the contrast between the PROGRESS of Cuba, and the DECLINE of Jamaica, it is only necessary to give a few statistics. The value of the exports of Jamaica, in 1809, were greater than those of Cuba in 1826, and a comparison of the two islands gives the following:

Jamaica, in 1809,	$15,166,000
Cuba, in 1826,	13,809,388
Jamaica, in 1854,	4,480,661
Cuba, in 1854,	31,683,731

"What a picture is this of free negroism! What can the abolitionist, who prates of free negroes laboring, say to these facts and figures? Cuba has been just as steadily advancing as Jamaica has been retrograding.

"The productiveness of Cuba is most astonishing. Her exports are *more per head than those of any other country on the face of the globe.* Her export and import trade for 1859 was as follows:*

Exports for 1859	$57,455,185
Imports for 1859	43,465,185
Showing an excess of exports over imports of	$13,989,506

"Now, the population of Cuba is only about one million and a half, all told, black and white. Upon analyzing the above figures, then, it will be seen that the exports of Cuba amount to about $40

* Balanza general del Commercio de la Isla de Cuba en 1859. Habana: 1861.

per head for each man, woman and child on the island! At the same time it should be noted that this great production is not all exchanged for articles imported, but there is a net income or surplus of exports over imports of $13,989,506.

"This net surplus of wealth amounts to $9.32 cents for each man, woman and child in Cuba. No other country in the world can present such a picture of prosperity, and yet Cuba is by no means as productive as she might be. Through a mistaken policy, or supposed kindness to the negro, manumissions are easily procured, and freed negroes are multiplying so rapidly that her welfare will, ere long, be very seriously impaired, unless the evil be checked."

I might thus go on and fill a volume with such evidence from *anti-slavery authorities*, but it could add nothing to the strength of the argument, and I fear that I have already wearied the patience of the Medical reader, who does not look, in a Journal of Medical Science, for material of this description; but I could not otherwise illustrate the leading point in view, viz., *the instinctive disinclination of the negro to agricultural labor.*

In a preceding part of this article, I have given the faithful portraits of negroes from the ancient monuments of Egypt, dating back 1500 years B. C., and it would be an easy matter to add many more, with facts in abundance, to carry the existence of negro races one or two thousand years further back. The negro then has remained for at least 3500 years what God made him, and Exeter Halls and Freedmen's Bureaux cannot change his type. His black skin, woolly head, anatomical structure, small brain, inferior intellect, and *instinctive dislike to agricultural labor*, have characterized the race through this long lapse of time, and will continue to do so, until the Creator, in his wisdom, shall order otherwise.

I have none but the kindest feeling towards the Freedmen, and have perhaps done them as many real kindnesses as any member of the Freedmen's Bureau; but I shall continue to oppose all utopian ideas and schemes, which must end in anything but benefit to them.

ART. II.—CHOLERA:

By J. THEUS TAYLOR, M. D., *New Orleans, La.*

THE exciting cause of Cholera (algidity and asphyxia are mere phases of its collapse, and now having the whole earth for its residence it should cease to bear the name of Asia, where it first

chanced to appear), whether of animal or vegetable nature, whether existing in the air we breathe, the water we drink, or the food we eat, like the poisons which produce intermittents, remittents, continued, typhus, typhoid, rubeola, scarlatina, variola, or plague, is unknown. Many a cunning microscopist has wearied his eye and racked his brain to fathom the mystery; and with them our late distinguished and lamented Riddell, (almost unequalled in science, and who so delighted to explore the grand secrets of nature,) was often prepared to exclaim — "Eureka! Eureka! Rem acu tetigi!"

But these devoted labors, like the search after the philosopher's stone, have been fruitless "vanity and vexation of spirit." One theory has succeeded another, as wave follows wave, each obliterating its predecessor; and though this interesting malady has now for nearly fifty years occupied the professional mind, we are still far from elucidating the great and important problem. It is again, for the third time, about to invade our city; yet we are not only undecided as to its cause, and the best means of meeting the indications to be fulfilled by treatment; but some of the greatest authorities in medicine regard *all methods* as equally unavailing to rescue the sufferer from its fatal clutches. The fact of its communicability from man to man, so well substantiated both in Europe and in this country, in the last epidemics, yet so strongly opposed by the non-contagionists, seems now to be the *admitted* doctrine; and so satisfied are all that its subtile essence is not susceptible of arrest by *cordons sanitaires*, or any quarantine regulations which science can devise, that enlightened France, the centre of art and philosophy, has exhibited almost an equally supreme apathy at its approach with the impassable Moslem, whose many-peopled capital was so greatly ravaged a few months ago. It is true that hospitals were made ready and nuisances removed, but no restrictions were placed upon commerce, and the world has wagged on, indifferent whether some thousands more or less should cease "to grunt and sweat under a weary life." They must then believe that this death-dealing ferment (soi-disant) comes from Heaven, sent perhaps by the *All-Wise* to prevent a too redundant population from overtaking the productive capacity of the earth; and as those who succumb are mostly loose of life, or stricken by poverty, society recks not of their loss; for this lean and hungry material is often dangerous to its welfare, and constantly threatens revolution. But though the recondite essence of Cholera still continues to baffle our research, its lamentable record is not un-

familiar; and recent publications give long bulletins of its advance, with choice tables of mortality reaching to fifty per cent. of those attacked; and among the victims many physicians of merit have fallen, offered up, all in vain, on the alters of science. However, "to-morrow may grant what to-day has denied;" and a more hopeful philosophy, and the determination to persist in our labors until the object is accomplished, must sooner or later crown our efforts with success. It is with this hope and faith, that I, a gleaner in the field, write this article to narrate what I have seen and felt.

The vast majority of those affected have *premonitory* symptoms, more or less grave, which, however, if promptly met by judicious medication, and dietetic restrictions, rapidly give way; whole communities thus suffer from debility, indigestion, wandering pains in the bowels, excessive flatus, and too frequent disposition to go to stool, the discharges being muddy and foamy, and almost invariably showing a decided deficiency of healthy bile-coloring. The system thus loses its tone, the skin assumes a moist, clammy feeling, an excessive perspiration bursts forth on the least exertion, and the sufferer, even in warm weather, feels it necessary to dress in woolen, in order to prevent a too rapid evaporation from chilling the surface. These symptoms are doubtless attributable to certain unknown atmospheric and telluric conditions, by which the portions of oxygen (ozone) and electricity, indispensable to the healthful performance of important vital functions, are lost. This state of affairs having lasted for a longer or shorter period, and communities warned of impending danger, Cholera suddenly bursts forth, selecting for its victims the poor, the intemperate, those laboring under chronic diarrhœa, or predisposed habitually to attacks of cholera-morbus; and these *first cases*, whether owing to the intensity of the invading poison, or the incapacity of these debilitated subjects to resist the encroachments of disease, *invariably* give a large ratio of mortality, in spite of all remedial agents. They are the meat it feeds upon —its chosen victims. Nursing women too, mothers of a few months, scarcely ever recover; nor those who are thoroughly overcome by fear.

The symptoms of an acute attack are so well known as scarcely to require description. The vomiting and purging of rice-water-like fluid devoid of fæcal odor, the peculiar manner of vomiting, and the force with which the fluid is ejected, the enormous quantities discharged, the incessant cramps in the abdomen and extremities,

taxing the endurance of the attendants to rub! rub!! the unquenchable thirst, the agitated, tumultuously quick, small pulse, the jactatation, the constant wakefulness that "*murders sleep*," the peculiar expression of countenance ("Facies Cholerica"), the dim, cloudy, sunken eye; the cold, blue, shrivelled, clammy skin reeking with moisture; the icy tongue and breath that give a thrill of horror; the rapid wasting away by which glorious manhood is transformed, as by enchantment, to wrinkled old age; the whispering, sighing voice, sometimes extinct; the perfect indifference as to the result "whether he sleep or die;" the integrity of the mental faculties; the suspension of biliary and urinary secretions; and the faint, nauseous and abominable smells which make his atmosphere so horrible, present a picture so strikingly peculiar that it is quite impossible to mistake the disease for any other; and once seen it can never be forgotten. There is a variety, however, fortunately of rare occurrence, "Cholera Sicca," in which the vital affinities are almost as suddenly destroyed as though a thunder-bolt had fallen upon the doomed sufferer; there is no vomiting or purging, but the most agonizing cramps, followed by imminent and deadly collapse. Never shall I forget the purest case of this description that ever came under my notice. A negro of mine, October 14th, 1850, put up and fed my horse at $2\frac{1}{2}$, p. m.; made no complaint until 5, and died at 6 o'clock of the same afternoon, without any discharges from the stomach or alimentary canal. The attack hurried to a fatal conclusion in spite of prompt sinapisms, frictions, bottles of hot water, ammonia, ether, brandy, etc., etc. A fruitless attempt was made to abstract blood, but it was coagulated, and gave almost a perfect cast of the median vein from which it was pressed.

There is yet another disease, whose stage of collapse assimilates so strikingly that of which I write, that it is quite impossible for one at all familiar with both not to have observed the resemblance; I refer to the congestive fever (pernicious intermittent), which so extensively ravaged certain sections of the Southern States many years ago, and especially prevailed in Alabama, where I saw much of it in '39-40, and was one of the first to institute treatment by large doses of quinine, so successful when all other methods failed. It sometimes terminated fatally in the first paroxysm, especially in debilitated subjects who had been suffering from obstinate intermittents; many died in the second, and few, if any, recovered from the third. It was of the tertian type, and the fatal conclusions took

place at the chill hour; which in these cases came on earlier at each access. Copious fluid evacuations nearly always closed the scene in such cases. When more protracted in its course, cerebral congestion or effusion for the most part occured from the ninth to the fourteenth day, producing death by coma after days of insensibility. The dumb chill had no resemblance to shaking ague; but the sufferer would rapidly become cold and blue, and the pulse almost imperceptible. The system was so oppressed by internal congestion, that reaction rarely occured to a sufficient extent to relieve the great viscera without the interference of art. There was often so much gastric disturbance as to prevent proper medication except by enemata. The great danger was the supervention of a sudden flux, almost invariably a fatal sign. The only safe plan of treatment was to cut short the disease at the commencement. I can vouch that it was sound philosophy to expect that this salt, of such inestimable value in the one, might be beneficial in the treatment of the other. Both diseases present well marked algidity and asphyxia; in both, the balance between the arterial and venous systems requisite to the performance of healthy functions, nay to life itself, is lost; in both prompt yet cautious blood-letting often produces wonderful effects, giving instant relief to the painfully difficult and incomplete respiration, and, almost like magic, restoring the wonted color to the blue lips and faded cheek. In both, I have found it necessary sometimes to squeeze out the first portions of black, tar-like, half congealed blood, and to continue gentle friction from the wrist to the elbow for some minutes before the current could be established; the jet would then become stronger and stronger, the color more and more normal in appearance, and the pulse more and more perceptible, until after several ounces had run, (one or two often suffice) the stasis would disappear; and the central organs, freed from congestion, be enabled again to carry on the machinery of life. But these remarks should rather have come under the head of treatment to which I will hurry; for it were idle to pursue the long wanderings over land and sea, mountain and valley, from the equator to the poles, of this scourge of the earth, which has held its carnival of death in almost every land, and in all seasons.

Its pathology, like that of yellow fever and typhus, has been traced by able hands; and the histologist has attempted to find the impress of its march upon the tissues. All have equally failed to discover, thus far, any lesions in the solids sufficient to explain its

deadly effects; and scientific inquirers, in these days of progress when all demand, with the doubting Thomas, to thrust their fingers into the very wound before they believe, cannot be satisfied with the chiaro oscuro of its published pathological hystology. As well admit the justice with which Valliex applied the term "Typhus Caché" to cerebro-spinal meningitis.

We have, however, arrived at a most excellent stand-point for a beginning; as *knowing nothing*, we have to work the problem proceeding from the unknown to the known. Having, therefore, been foiled in our researches thus far, where else can we hope to find good and sufficient causation for the effects we wish to explain, but in the fluids—the blood—"the fluid flesh"? The progress of the disease, which we have so often watched with an absorbing interest, must convince every one that the blood plays no mean part in the drama. We know that the blood is in an abnormal condition; that its fluidity is so diminished by the loss of its serum as scarcely to admit of the possibility of circulation; "that the veins are full and arteries empty;" that no adequate supply of oxygen can be brought in contact with its redundant carbon, to maintain animal heat, or give nervous energy by the indisputable stimulus of red blood to the great nerve centres. We know that digestion being indefinitely suspended, no rich chyle will go at each moment to mingle with, and refresh its sluggish current. We know that not reäcted upon and purified by the glandular system, it abounds in materials fatal to its life, as bile, urea, etc., etc. It can no longer stimulate or nourish the heart, which ceases to beat; faint capillary oscillations scarcely maintain the desperate struggle; a mirror only can detect respiration; the voice disappears; vital heat in the extremities falls from 98 to 75° F.

The centrifugal vital forces having thus disappeared with circulation, digestion, nutrition, secretion, and nervous irritability, the fluids go to the centre, their current reversed, the life-blood colorless to be sure, but yet very blood, its red corpuscles rushes through the patulous mouths of the whilom fountains of absorption and assimilation into the alimentary canal and stomach, or is poured out through the skin. The sufferer wastes away under your eye, suddenly dissolved, as it were, to the extent of half his weight. Is it then surprising that he should die? Nay, it is a miracle that he should live! Yet he sometimes, even under these deplorable circumstances, has been restored to "pristine health." Here is cau-

sation in abundance to account for the death of any biped, even the invulnerable son of Thetis. In the blood, then, we may hope to find what we are seeking. Could we but have the art of removing by some subtle chemical agent this almost complete embolism; supply oxygen for its decarbonization; and arouse once more vital electricity! This achievement would be second only to the discovery of the long sought "Aqua Mirabilis," the dream of the Rosicrucians, (the old pursuers of the forbidden art,) a few drops of which would give eternal youth.

We should likewise examine over and again the water we drink, the food we eat, and the excretions we void. Boiling and filtering are but small labors when life is on the cast of the die. One badly cooked meal has often been known to be fatal in a choleraic atmosphere. The following instance is well worth relating in this connection. A gentleman, the owner of large estates in Mississippi and Louisiana, paid, during an epidemic of Cholera, the greatest attention to securing an abundant supply of pure cistern water and the proper preparation of the food for his negroes. The result of this wise effort was most satisfactory; for though the disease prevailed extensively and fatally in the immediate vicinity of his estates, during the years 1850 and 1851, no person of the many hundreds owned by him died from any cause; and, what is more surprising, not a case of Cholera occurred among his people. Many such instances are given in our standard works; and Dr. Watson mentions that the use of artesian water in two institutions, accommodating many hundred persons, had caused them to be exempt from the disease, which prevailed fatally in the vicinity where the ordinary London water was used; and this fact was developed by Dr. Snow in defence of his theory of Cholera. The water of our Mississippi seemed to be peculiarly productive of the disease in 1850 and 1851, abounding beyond all doubt in the animalcules so invariably discovered in the dejections of cholera patients at that time (vide Dr. Riddell's paper, "*N. O. Med. & Surg. Journal*"). Dr. Riddell told me, a short time prior to his death, that he had at that time found many such animalculæ in every drop of the water examined; and it was his intention to have renewed and enlarged his observations and experiments in case of an epidemic. The monad and navicula are now, however, regarded as harmless, and having no particular connection with the disease, nor belonging to the intestinal canal, but swallowed with the water we drink.

The premonitory diarrhœa (cholerine as it has been called), the almost invariable precursor of the disease, can be readily relieved by a well regulated diet, the avoidance of imprudences and excesses, and the use of alteratives, anodynes, astringents or tonics, as required by the symptoms. I have given with good results the following:

℞—Mas-Pil-Hydg.
Piperine.....ää. gr. xii.
Pulvis Camphoræ.....xxiv.
Pulv. Opii..... iv.—in Pills No. 12,

One to be given every 2, 4 or 6 hours, according to the urgency of the case, until the alvine discharges assume a healthy bile tinge. Too frequent movements will be meanwhile restrained by the administration of enemata of starch and laudanum, or a few grains of camphor, which may even be carried about the person; or a few drops of Hoffman's anodyne or paregoric, or kino or catechu with brandy; or a small portion of tincture of capsicum and camphor combined; the patient to keep perfectly quiet; to be warmly clad; to wear a flannel roller sprinkled with turpentine to the abdomen; to use a plain well selected diet, and be careful in every respect to guard against relapses; for each one is apt to be more violent and difficult of control, and may speedily terminate in fatal collapse. I have often seen such cases; and many valuable lives are thus lost by the violation of the laws of hygiene. I recollect an instance that occurred in 1850, when I was much exhausted by exposure and loss of rest in the treatment of the disease, and had for sometime been suffering from borborigmi, pain in the bowels and diarrhœa, which compelled me to be very cautious in diet with an occasional glass of brandy and water. On returning home one day after a fatiguing round, I found a party of gentlemen assembled. A good dinner was improvised with the assistance of lobsters, salmon, etc.; which, with champagne and other wines, were much relished by the company, who all rallied me on my anchoretic simplicity of diet. By this free indulgence in diet, one of the party, a most estimable gentleman, thereby lost his life in thirty hours—and another one of the company came near succumbing. The most absolute temperance and prudence in meat and drink should then be persisted in; a little virtuous abstinence will do no harm, and it surely is not so difficult to "forswear sack and live cleanly" for a few weeks. I think it was Abernethy to whom a valetudinarian, who had bothered all the celebrities of Europe for advice, on one occasion applied for relief

The man stated his case with all its ailments, and the multitudinous drugs he had swallowed without benefit; when the Doctor, looking at his linen which was rather soiled, quaintly asked, "but, my dear sir, have you ever tried a clean shirt?"

It is a very good plan to take quinine occasionally during the epidemic condition of the atmosphere, and by all means to avoid purgative medicines, however mild they be, for *anything* may at such times produce hypercatharsis. Many people injure themselves by going with confined bowels for days, so fearful are they of having a stool. Others constantly are taking some medicament for the relief of fancied ailments, and many plunge into fatal excesses in order to drown care. The wisest policy is to eat and drink nothing which we do not know to be well cooked and pure; to avoid fatigue, excesses, exposure, night-watching, late suppers, and to have no fear. "*In rebus arduis servare mentem*" should be our motto.

Treatment. — The indications to be fulfilled are to control the vomiting, purging and cramps; to prevent loss of balance in circulation; to arouse the vital energies, and restore the vital functions. That plan of treatment will prove best which shall accomplish these objects *most* promptly, and with the *least* medication. It is, though, almost impossible to keep from doing too much; for the incessant complaints of the patient, and the rapid progress of the disease, seem constantly to demand our interference. We are thus induced by the natural sympathies of man for his fellow, "to ply the batteries of art" too excessively, until experience have taught us its futility, and given that sang froid so indispensable at the cholera bed-side; and, with it, the great art of waiting the effects of one medicine before another is thrust down. If the patient have recently eaten, the contents of the stomach should be brought away by a tablespoon of mustard and salt in a half-pint of warm water, and repeated with copious draughts of the same, until that important object is accomplished: for otherwise the foreign substances in the shape of undigested food might greatly aggravate the symptoms, and bring about a fatal result. So much good have I seen produced by this simple and bold plan of opening the campaign, that I confess to the strong temptation to adopt it in *all* cases of any urgency. The act of vomiting thus induced is not choleraic; but shakes up and presses, by the action of the diaphragm and abdominal muscles, nearly all the great organs, and viscerae; and if perchance a little bile be poured into the duodenum by this violent succussion, it

will do more good than all medication, and the patient will almost to a certainty recover. I have never seen an exception to this rule; and such was the experience of Johnson, whose book on the diseases of Southern latitudes has so long delighted the professional reader. He says, if I recollect aright, that "the appearance of bile in the dejections had always been observed by him to be the sure harbinger of recovery;" and the profession concurs in this well-grounded observation.

It is necessary in all cases to act with promptness. Sinapisms should be applied from the xyphoid cartilage to the pubis, and secured by a well arranged band, so as to exercise considerable and equal pressure on the alimentary canal in almost its entire length. The same must likewise be applied to the interior of the arm and calf of the leg. The applications to the abdomen must be replaced in thirty minutes by turpentine stupes of flannel, held in situ by a wide roller of the same material, as tight as can be borne, and those on the extremities replaced by blisters in situ, *carefully confined;* otherwise they will soon be rubbed off by the movements of the patient. As promptly as possible an enema of

℞—Quiniæ Sulph.
Aluminæ Sulph. ..... āā ʒi.
Tinct. Opii ..... mxl.
Tepid Starch water ..... ʒiv.
Acid Sulph ..... q. s. ut. ft-sol.

thoroughly blended by careful trituration, should be gently administered, and compulsorily retained by a twisted towel, held with considerable pressure to the anus by a careful nurse, for an hour or more; and if the desire to evacuate the bowels be so urgent as to compel its discontinuance, another enema must immediately thereafter be given, and similarly retained. This should be repeated from time to time, until the peculiar effects of quinine are produced upon the tympanum, which I have known to appear in twenty minutes after administering the first enema. If these precautions be well observed, the purging will in most instances be controlled by the first, and nearly always by the second enema. The stomach then being emptied, a half grain of sulphate of morphia should be given in a tablespoonful of brandy, with powdered ice; the brandy and ice repeated every fifteen minutes, with crushed ice freely given in the intervals to relieve the otherwise quenchless thirst. Nothing else ought to pass his lips; and if the horizontal position be rigorously maintained, the vomiting for the most part will soon cease; other-

wise, it will be necessary to give a second or third dose of morphine.

The cramps will be much relieved by frictions with the following:

℞—Chloroform,
Tinct. Arnicæ,
Tinct. Camphor,
Ol. Cajeput. ää ʒi.
Ol. Turpentine,

To be well mixed by shaking before using. Should the patient continue to be racked by pain, chloroform may be advantageously given by enema:

℞—Chloroform ..... m. xx.
Glycerine,
Camphor Water ..... ää ʒij. m.

and shake briskly before administering. This enema should be retained as before described. I have not found chloroform to be well borne when administered by the stomach; and I much prefer to use the rectum and colon for medication as far as possible; whose powers of absorption, so wonderful in health, are, even under these circumstances, sufficient for our purposes.

The vomiting having for some time ceased, and the patient much relieved, perhaps, by the various applications which have been made, (for the enemata of quinine, as before described, if recurred to immediately after the evacuations, will hold the disease at bay until the vis medicatrix naturæ shall come to our aid,) we may now go on with more positive treatment directed to the restoration of the biliary secretion, on which the ultimate safety of the patient depends. We have, however, first controlled the wasting discharges, quieted pain, saturated the system with quinine, which has produced its peculiar roaring in the ears; have applied ice to interior, with brandy, to create expansion of the circulation. The sinapisms and frictions have warmed up the surface, and our turpentine stupes to the abdomen and blisters to the extremities, and dry frictions, will continue to develope the centrifugal forces. Our patient, too, is watchfully restrained from raising the head, and forced to keep quiet, by which the loss of balance in the circulation so often instantly fatal, is guarded against. Under these circumstances, I have successfully administered:

℞—Hydg—Chlor. Mit.
Pulv. Camphoræ ..... ää gr. x.—M.

Mix neatly in ʒss. of gum arabic mucilage, flavor with peppermint, and give so as not to agitate or disquiet the patient; repeating every

two hours, until three doses are retained. As soon as the stomach can bear nourishment, toast water, rice gruel, or delicately made mutton broth, should be allowed, spoonfuls only at a time, and repeated as desired by the patient; who will under these circumstances request that the brandy and ice be suspended. He asks, for the first time, for something warm, and relishes a cup of ginger tea, which I have often found more grateful than anything else. The desire for something warm is one of the most favorable symptoms; it shows that the internal congestion is passing off, and reäction about to occur; and, if proper precautions be observed, is almost the sure precursor of recovery. The system is entering that stage in which the suspended secretions are about to reïppear. The blisters so long inactive upon the sodden skin will soon redden, the bile again tinge the evacuations, and the kidneys once more perform their all-important office. The patient, who for so many hours has been tormented with pain, and tossed about incapable of a moment's repose, now falls into a calm slumber. The cold colliquative sweat is replaced by a warm gentle perspiration; the eye, so sunken in its socket, grows brighter and fuller; the wrinkled wasted features begin to resume their wonted expression; the vital heat once more approaches the standard of health, and the heart, whose pulsations were but now quick, wavy, flickering, intermitting, and scarcely appreciable by hand or ear, again makes healthful music. The patient is now safe from collapse, unless too excessively nourished, or permitted to sit up; which apparently innocent gratification might, in a few moments, place him *in extremis*. The only dangers that stand between him and convalescence are a too violent reäction with a tendency to cerebral congestion, for which I have sometimes been compelled to bleed freely; or a low condition, resembling adynamic or typhoid fever, which is mostly tedious, and very often fatal in its effects on the already exhausted system. It appears to be admitted by the profession generally, that the excessive use of opium is very apt to result in this low condition, with a tendency to the brain, and protracted convalescence; and when we consider the vast quantities of calomel, red pepper, etc., and acrid tinctures, poured, at short intervals, into the weak and irritable stomach, it is really surprising that any cholera patient should escape, not only the acute stage of which we have been treating, but that of collapse, into which he is so apt to be hurried before reäction can take place; to be followed perhaps by the irritative fever now under consideration. I will not

waste time, however, by enlarging upon its treatment, which for the most part should be on general principles, and expectant; mucilaginous drinks and well selected nourishment, and good nursing, with fresh air, will do all that can be accomplished for him.

We are often foiled in our efforts, however well sustained and judicious, in arresting Cholera either in the formative period, or during the stage of progress marked by vomiting, purging and cramps; and the patient, no reäction having taken place, falls into the stage of collapse. Pulseless at the wrist and elbow, livid, marbled, and voiceless, his wasted form colder than death, he lies supine; the beatings of the heart scarcely appreciable, and a faint respiration giving the only assurance of life. The disease has done its work —after the storm there is a great calm, and not energy enough left to vomit, or purge, or cramp; and to the looker-on, it appears "mere midsummer madness" and cruelty, to attempt by the worrying processes of art to resuscitate this almost inanimate body, whose molecular death seems already to have so far progressed. But "as long as there is life there is hope," and cases however desperate in appearance ought never to be abandoned, more especially in this disease without a lesion. Bodily heat appears unequally diffused before death, and often seems to be the beginning of that process; and this phenomenon has deceived the most experienced observers. "The cold arm and hot calf," I have always found to be fatal signs; and, as has been well remarked by a recent writer, "it is not easy to say just when people do die in cholera asphyxia, for they are often colder and more insensible than any *dead man*, some hours before they give up the ghost, and sometimes warmer than any living man some hours after." These dead men sometimes, Lazarus-like, come forth at our bidding, and live to enjoy God's green fields for many years.

The distinguished and candid Watson remarks, "that in the stage of collapse he knew no drug upon which any reliance can reasonably be placed." I am well satisfied, though, that under the quinine treatment, as herein before set forth, the stage of collapse, like the recurring chill of congestive fever, may be avoided; and the recoveries will not only be more numerous, but more rapid, and with very rarely any irritative fever. But I have not space to recur to this interesting point, which I hope, however, will be fairly tested by the profession on the first suitable occasion.

Transfusion, or the injection of salines or warm water directly into the venous system, is more dangerous and not so philosophic

as the use of the natural process of absorption. I have used beneficially, in extreme cases of collapse, many buckets of cold water, dashed with force over the naked patient; afterwards causing dry friction of mustard and salt to be universally and thoroughly applied. Frictions with ice are said to have been largely and successfully used by some physicians in this city, as elsewhere. I have likewise used, with surprising results, large quantities of cold water pumped up the rectum; and am disposed thus to try our favorite carbonate of ammonia, largely diluted, for it would soon find its way by absorption through the veins and lacteals to the whole organism, and thus as a decarbonizer fluidify the blood; and it appears to me that the hyposulphites might, in the same manner, give brilliant results, by supplying a large quantity of free sulphurous acid. Nitric and sulphuric acids might also be similarly administered; and spongings over the hepatic region with nitro-muriatic acid. Hot air or spirit vapor-baths applied without disturbing the position of the patient, and faradisation and electricity are well worth renewed trial. With these adjuvants, sinapisms, blisters, brandy and ice, quinine enemata as aforesaid, careful nutrition by the rectum if necessary, and a little calomel, camphor, sugar of lead, and opium, I would be content. I once tried the ethereal solution of phosphorus in a remarkable case which had been collapsed for days. She was improving, when she accidentally fell out of bed one night, and was found dead upon the floor in the morning. The nurse, it appeared, had grown weary of watching.

I will now proceed to give a case or two, taken from an old note book made in 1850. Case 38. (This case occured on the steamboat "Montgomery.") A young negro man, about 22 years of age, had been sick for twelve hours, when he came under my notice at 10, a. m.; aphonic, cutis anserina, eyes sunken, tongue cold, pulse nearly imperceptible at the wrist; occasional cramps; constant nausea; throws up rice-water-like fluid; evacuations of same character; huge drops of icy sweat stand on his brow and run into the orbit. Ordered sinapisms to the abdomen and extremities, to be followed in thirty minutes by blisters in situ, and prescribed ℞. morphiæ sulph. gr. ss., by the mouth, in a tablespoonful of brandy and powdered ice, the latter to be repeated every twenty minutes, with ice freely given in the intervals. No water allowed, and the horizontal position rigorously maintained. Directed the quinine enema, and caused the same to be retained for two hours by pressure with

a twisted towel held by an assistant to the anus; and immediately after the evacuation another was given. The purging being arrested and the nausea having ceased, I gave at 3, p. m.:

℞.—Calomel.....gr. vi.
Opii.....gr. i.

made into two small pills, quite soft, which were swallowed by the patient without his knowledge in brandy and ice; and the same dose was repeated at 6 and 9 o'clock, p. m. By this time the thirst had disappeared with the clamminess of the skin, nausea, cramps, and prostration; the eyes became fuller, the face less haggard, the hands less wrinkled, and the tongue regained almost its natural temperature. The patient was to all intents and purposes well; he did not purge again for forty-eight hours; had next day a good appetite for broth, etc., and recovered without a bad symptom, except a very slight mercurial impression; he had only taken gr. xviii. of calomel in all.

Case 39. Was called, at 10, p. m., to see a stout negro man, in the prime of life. Pulse nearly gone; hands, feet, and face shrivelled; eyes deeply sunken, and voice greatly changed. Three hours before had had a copious rice-water discharge; cramped violently; had some nausea, and fell down apparently dead. As he had taken calomel the night previous, and counter-irritants, blisters and frictions had been freely applied, the usual sinapisms were not used, but the quinine enema was resorted to, and compulsorily retained; a half grain of morphine given by the mouth in brandy, and ℥iss. cognac brandy ordered to be repeated every twenty minutes until reäction took place. The symptoms of collapse not diminishing, a few drops of tinct. of capsicum were added to the brandy, and continued during the night. Next morning I found the pulse reëstablished, and the tongue and skin much warmer; some delicate nourishment with grog was allowed during the day, and he slowly recovered. Urine was not secreted until forty-eight hours afterwards.

This patient had taken broken doses of tartar emetic, not exceeding 3 grains in all, for an attack of pneumonia, when, without premonition, the above described dangerous symptoms ensued. I am satisfied that, if the stomach had in this case been tortured with cholera powders, as is too often done, death would surely have resulted.

Case 40. July 15—Saw a negro man, aged 43, who had been purging and cramping from midnight to 7½, a. m., when he came under

my notice; he had taken, at daylight, calomel, gr. v. and opium, gr. ij. and the dose was repeated at 7 o'clock. I found him vomiting large quantities of clear fluid slightly tinged with green; pulse 140, soft, feeble, and rapidly tending to collapse; skin cold and clammy; eyes sunken, glassy and staring; cramps and jactitation incessant; voice nearly gone; forehead warm, and neck, nose, cheeks and extremeties cold and dewy. At 8, a. m., gave the quinine enema, as herein before described; and by the mouth morphine, gr. ss., in 3ss. of the following mixture:

℞.—Tinct. Capsici.
Tinct. Camphoræ,
Sulph. Ether..... ää. ʒi.
Tr. Ol. Menth. Pip .....3i. m.

with a little water. The tincture to be repeated in small doses every twenty or thirty minutes, until the symptoms improved. Sinapisms to the abdomen and extremities were quickly applied, followed by blisters *in situ*. The whole spine was likewise sinapised, hot bricks placed to the feet, and a blanket being thrown over the patient, he was directed to keep quiet, and not yield to his sufferings. The half grain of morphine was repeated at 10, a. m., by which time the stomach had become calm, cramps disappeared, a perspiration not altogether cold became apparent, and the extremities warmed up. The enema of quinine was again administered. The treatment was ordered to be continued; the enema repeated after each evacuation, and the following to be given every two hours, until four doses had been retained, beginning at 12, m.:

℞.—Calomel.....gr. v.
Plumb. Acet.....gr. iii.
Morph. Acet.....gr. ¼. m.

At 4, p. m., he had an ashy colored movement devoid of bile, not coloring white paper, and presenting the usual appearance of specks swimming in fluid—the quantity about two pints. The enema was given immediately, and grog allowed freely with the mixture. At 8, p. m., the bowels were again moved; color darker and less fluid, character muddy, and having a disgusting smell. The enema was again repeated, the quinine being increased to ʒiv. and the laudanum to 3i. He had been up at stool, cramps had returned whilst in the act, and the whole person became at once covered with cold, colliquative

sweat, face more wrinkled, hands and tongue nearly quite cold, and pulse at 160. At 10½, p. m., ordered

℞.—Calomel ..... gr. x.
Camphor ..... gr. vi.
Plumb. Acet. ..... gr. iv.
Opii ..... gr. ii. m.

and the mixture to be freely given with whisky during the night. July 16th, 5, a. m., pulse 110, skin warm and pleasant, voice and countenance more natural; had slept well, and no more movements from the bowels. Directed ginger tea and rice gruel, with grog as desired. At 7, a. m., voided a half pint of yellow urine: feels much better, and is in fact convalescent.

When the stomach is not too irritable, quinine may be given by the mouth, as in the following case, (No. 11.) George, a young negro man, had suffered from diarrhœa for several days; when, on the 19th May, at 4, p. m., after several profuse rice-water discharges, he came under my notice. Pulse good; skin cold; hands shrivelled; tongue cool, and covered with white fur; urine entirely suppressed for twelve hours; occasional cramps in the extremities, with the desire to extend the fingers by interlacing them. *No vomiting* had as yet occured; but the countenance looked shrunken, and the eyes hollow and pale. Sinapisms, etc., were freely applied, and

℞.—Hydrarg. Chlorid. Mitis,
Quiniæ Sulph.,
Pulv. Camphoræ ..... ää. gr. x. m.,

ordered every two hours, until three doses should be retained; and to resume the quinine enema after each movement. Mucilaginous drinks and brandy, as desired. May 20th, 9, a. m.; reäction fully established; skin warm and moist, but no urine. The discharges unchanged, save that they were less frequent (three in twenty-four hours), and not so copious. Ordered quinine, gr. x., three times a day, with the tincture, and paragoric after each stool. Brandy and mucilages to be continued. May 21st; has voided urine; discharges more natural, and colored with bile. Ordered quinine, gr. v., three times a day, and brandy as desired. The diet to be improved by the addition of chicken broth. May 22d; convalescent and slightly ptyalised.

I had intended to enter more largely into many points of interest, to which it was quite impossible to do justice in my limited space; as for instance, the propriety or impropriety of bleeding; the cases in which it may be expected to do good, and those in which it is

contraïndicated; and likewise the period in which it may be judiciously practiced. There are, besides, many interesting signs of "weal or woe" which might advantageously have been noticed. I now close this article with the hope that our city authorities will, in case of an epidemic, make provision for the conveyance of cholera patients, (who are to be sent to hospital,) on stretchers carried by hand, so that they may keep the horizontal position, and not be shaken to death in cabs and wagons *in transitu*.

ART. III.—SULPHITES AND HYPOSULPHITES:

Translated from the French of CHARLES TURPIN, D. M. P., *of New Orleans.* (Continued from July number.)

FERMENTS.

BEFORE describing the principal characteristics of ferments and fermentations, I have thought it necessary to recall certain details which will serve to determine better the ideas that must be formed about them, and make them better known in their action and their chemical properties. But, in order to follow them in their course, in order to understand better the varying conditions from which they arise, it is perhaps necessary to couple them with a general and well established fact—the constant change of matter—so as to dissipate the somewhat mysterious obscurity which surrounds them.*

When you are well conversant with the phenomena, or, to be more correct, with the "effects" observed in physico-chemical science, you will hold as a certainty that *matter is indestructible*, and that, if at times it escapes our senses, it will be to undergo new forms—changes of state—and to acquire new properties.

It is of *normal* and *continuous motion*, of the *persistance* of forces, of their *correlations*, but chiefly of *motion*—that *modificator* "par ex-

* My object in this work, is merely and simply to state the proof of certain results, without inquiring into the final "why," without expressing any opinion on the nature of the molecules of matter, and to discover the truth and acknowledge, with Grove, that "causation is will, and creation is the act of God."

cellence"—that we must ask the explanation of those incessant changes in the three kingdoms.

FORCES.

If now we examine the agents which produce *effects* on matter, we shall see that they too undergo continual changes.

It may be said that the different forces of matter, heat, light, electricity, magnetism, *chemical affinity*, "are in correlation, or are in "mutual and reciprocal dependence on each other; that none of "them, in an absolute sense, can be said to be the essential cause of "the others; but that each one of them may produce all the others, "and be converted into them" (Grove). In a word, that each one in turn is antecedent and consequent.

By carrying analysis further, we shall have before us their origin and their changes. For instance, motion may produce immediately heat and electricity, and the latter generates magnetism at once. Is not light the consequence of heat, produced by motion or electricity? Is not chemical affinity a direct product of electricity, "of which motion was the primary source"? Finally motion "may in its turn be produced by the forces emanating from friction."

We must not forget, however, in view of those varied effects, that electricity alone, according to the *form* given to the apparatus producing its different modes, gives rise not only to the preceding forces, but that it takes the most important part in the continual phenomena of composition and decomposition, which characterize organic life. To all these forces let us add atmospheric pressure, air and water, which form a connecting link between living organisms and the mineral world, and we have then constituted that whole which Comte first designated by the term "centre" (*milieu*). It is from this universal or exterior centre which surrounds them all without distinction, that the living organisms borrow the elements, organic and mineral, appropriated to their life and growth.

We may well observe here, too, how much the chemical laws are confounded with the physical and vital laws, and recognise that no absolute independence exists between these bodies and these laws, but that it is altogether relative; that they are obliged to submit to their reciprocal influence, and that each determined organism has a corresponding centre adapted to its particular life. To this first centre Mr. De Blainville has added a second, which he calls "*interior centre*," and which would be represented by the blood as charged with maintaining an even temperature in the tissues, and furnish-

ing them materials dissolved in water, which serves as a vehicle, and the air confined by the globules.

This same idea has been taken up again lately by Professor Claude Bernard, and he, at once, stamped it with the seal of the high philosophy which distinguishes all his works. As his new ideas complete the universal *centre*, I have thought proper to reproduce them in a brief analysis.

He admits two well defined orders of *centre* for living beings: 1st, The universal or *exterior centre*, surrounding the whole of the individual. 2d. The *organic* or *interior centre*, in immediate contact with the anatomical elements composing the living being. These latter ones must be considered as intermediate between the universal centre and the organic elements of the living being.

The adoption of this idea renders much plainer the analysis of the elementary phenomena of life. With inferior animals there is no distinct organic centre: for instance, the instincts are immediately submitted to the influences of the exterior centre, and they might almost be considered as deprived of interior centre, although their organization is rather a complicated one. "For all the plants in general, the consideration of the exterior centre will be sufficient." But as the organization becomes more complicated, "the histologic elements become more delicate, and cannot live longer in the exterior centre:" they are obliged to have proper organic centres. In the superior orders of existence, the blood becomes an *interior centre*, "which puts the organs in continual relation with one another, as also with the exterior, and in which its anatomical elements live like fish in the water; that is, without its absorption, in the least, into their substance." The more the interior centre rises, the more isolated from the exterior centres it becomes, so that the anatomical elements are more and more protected against external influences. "The blood then retains a special temperature, gives special nutritive matters, etc." The interior centres are therefore products of the organism; all the component parts of the blood, whether azotized or not, albumen, fibrine, fatty matter, etc., are in the same case, with the exception of the globules of the blood, which are organic elements.

After having briefly recalled the different properties of matter, the forces which govern it, and the universal and interior centres necessary to the manifestations of life, we have yet to examine what becomes of them in the living organisms, and the changes they undergo. If, in the course of this review, I have voluntarily separated

from animal life the intellectual and moral phenomena which are its necessary complement, it is because they belong to a certain order of facts, and not properly to the present subject.

Having made this declaration, I now transcribe a remarkable article taken from Buffon:

"When God created the first individuals of each species of ani-
"mals and vegetables, He not only gave form to the dust of the
"earth, but He made it living and animated by infusing into each
"individual a certain quantity more or less of active principles, of
"living organic molecules, indestructible and common to all organ-
"ized bodies. The molecules pass from one body to another, and
"are useful equally for the maintenance of actual life and its con-
"tinuation, and for the nutrition and growth of each individual;
"and after the dissolution of the body, after its destruction, its re-
"duction to ashes, these organic molecules, over which death is
"powerless, survive, circulate in the universe, and pass into other
"bodies, carrying with them nutrition and life. All production, all
"renewal, all increase by generation, by nutrition, by growth, imply
"a previous destruction, a conversion of substance, a transfer of
"those organic molecules which do not increase in number, but
"which exist always in equal number, render nature always equally
"living, the earth equally peopled, and always equally resplendent
"of the first glory of the One who created it."

There is no doubt that the tendencies of this bold synthesis may be criticised; but it does not belong to me to do it, because it would be necessary to attack fundamental doctrines and metaphysical and religious questions, which I do not wish to entertain now. Let it suffice to take the material side of them, and to inquire at a later period whether they agree with the chemical experiments of the present time.

Buffon's idea is certainly very old in science. We know that Plato declared, "that the individual does not always consist of the same "matter: that he is born, is continually renewed, and continually "dies in his primitive form—in the hair, in the flesh, in the bones, "in the blood—in a word, in the whole body." We also know that Leibnitz and G. Cuvier have accepted this material fact of the *continual mutation of matter*, and of the persistance of forces in all its generality. But to Buffon belongs the honor of having better developed and demonstrated that great common foundation of life, the preserver of form and force.

[To be continued.]

Clinical and Hospital Record.

Art. IV.—STONE'S INFIRMARY:

Selected Cases from the Practice of Professors Warren Stone M. D., *and* T. G. Richardson, M. D. *Reported by* S. R. Hurd, M. D., *Resident Physician.*

SIX CASES OF STONE IN THE BLADDER.

THE comparative infrequency of calculous affections in the extreme South-Western States, renders the appearance of six cases within a period of a few months rather a remarkable circumstance. It will be observed that they are all either natives or residents for many years in this section of the country. Special attention is called to Case IV, which possesses a number of features of unusual interest. The patients came to the city especially to consult Prof. Stone, by whose request and assistance, Prof. Richardson performed the operations.

Case I.—Chas. G., æt. 4 years, was born in Copiah county, Miss., whence he was brought to the city by his mother, in October, 1865, for treatment. The patient's general health was miserable in the extreme. Emaciated to the last degree, the subject of a chronic intermittent fever, complicated with slight dysentery, so feeble that he could scarcely sit up long enough to have his bed arranged, and his wrinkled countenance marked by that haggard and oldish expression so characteristic of protracted suffering in children, he commanded the sympathy of every one who saw him. Symptoms of stone in the bladder had existed for about two years, but only during the past twelve months had his general health become seriously impaired. The diagnosis was verified by the introduction of the sound by Prof. Stone, who advised nourishing diet, tonics, anodynes at night, etc., to improve, if possible, the broken and debilitated health. This course was continued for ten days or two weeks, at the end of which time, no amelioration having taken place, it was determined by Profs. Stone and Richardson, in consultation, that the only hope left was to remove the stone, and thereby relieve the system of the source of irritation which was evidently wearing out the little patient's life. Accordingly, on the 15th of October, the lateral operation was performed by Prof. Richardson, in the amphitheatre of the Charity Hospital, in the presence of the medical class, and the stone

extracted without any difficulty, and with very trifling hæmorrhage. The patient began to improve immediately, the wound granulated slowly but kindly, and in three weeks he was sent home with every prospect of a speedy recovery.

CASE II.—J. H. B., æt. 30, was born near Raleigh, N. C., but left there when he was quite young, and has resided since then in Rankin county, Miss. He is corpulent, of a sanguine temperament, married, and the father of several children. Has experienced more or less difficulty in urinating since 1855, but was not sounded until 1862, when a calculus was detected.

He applied, November 4th, to Prof. Stone, who confirmed the previous diagnosis, and advised an operation, which was performed by the lateral method, three days subsequently. Owing to the great depth of the perineum there was more difficulty than usual in inserting the forceps, as the finger could scarcely be pressed up to the neck of the bladder in order to dilate it. A copious and troublesome hæmorrhage followed, which could be arrested only by introducing a canula into the bladder and packing the wound with lint moistened with ferric alum. The canula and lint were allowed to remain thirty-six hours, after which time the parts rapidly contracted, and in twenty-eight days the patient returned home entirely well. The stone weighed $10\frac{1}{2}$ drms.

CASE III.—J. R. S., æt. 26, was born in North Carolina, whence he removed to Selma, Ala., in 1858. Patient's general health very feeble, having suffered much from chronic intermittent fever, and a predisposition to tubercular phthisis. Vesical symptoms were first observed in 1859, and in 1863 there was great difficulty in voiding urine, and frequently a free discharge of blood. Was frequently examined for stone, but none detected until July, 1865, when he first consulted Prof. Stone. Prof. S. discovered the stone upon the first introduction of the sound, but, owing to the patient's unfavorable condition, sent him home to recuperate his general health. He returned in the Fall, somewhat improved, but still suffering from occasional attacks of intermittent fever of an obstinate character. He was placed upon generous diet and the use of the nitric acid, quinine and iron mixture for a week or ten days, at the end of which time the lateral operation was performed by Prof. Richardson. The febrile symptoms returned a few days afterwards, and the wound granulated very slowly, but at the end of forty-three days he was permitted to return home, the urine all passing by the urethra. The

wound subsequently entirely closed, but the patient suffered for some time subsequently from irritation at the neck of the bladder. The stone weighed 8 drms., 10 grains.

Case IV.—*Calculus of the Bladder, the result of gun-shot wound; complicated with Recto-vesical and Anal Fistulæ.* D. J. B., æt. 27, was admitted November 24th, 1865. General aspect very distressing; body much emaciated, and countenance expressive of great and protracted suffering. States that he was wounded at the battle of Sharpsburg, September 17th, 1862, by a minnie ball which entered the pelvis in front, about an inch to the left of the pubic symphis, fracturing the pubic bone, perforated the bladder and rectum, and emerged at the right sacro-sciatic notch, on a line with and about an inch from the junction of the sacrum and coccyx. Urine escaped through the wound in front and through the rectum for three or four months, by which time the wounds had entirely closed. But, notwithstanding the urine resumed its natural channel, the bladder continued irritable, so that the patient was unable to move about with any comfort whatever. Shortly afterwards, say about September, 1863, some small fragments of bone passed the urethra, accompanied with great suffering, but not followed by any relief to the vesical symptoms. Indeed the suffering in the bladder increased from month to month, and sometime during the following year the urine began again to flow through the rectum, and continued to do so to the time of his admission into the Infirmary. During all this time the sufferings of the patient were intense, except when under the influence of opiates.

Upon attempting to introduce a sound into the bladder, the urethra was found to be blocked up, in the prostatic portion, by fragments of bone or calculous deposit, it was impossible to say which; and upon introducing the finger into the rectum, the rough convex surface of a stone could be felt projecting into the gut, through a fistulous opening about half an inch in diameter, situated about one inch above the base of the prostrate gland.

Notwithstanding the broken-down condition of the patient's system, it was determined to operate upon him as early as practicable, as there seemed to be no prospect of any material improvement in his health, until he should be relieved of the source of all his suffering and consequent prostration. Accordingly, on the third day after his admission, he was placed upon the table, and Prof. Stone having succeeded in passing the director into the bladder, despite the ob-

stacle before mentioned, the lateral operation was performed by Prof. Richardson. The incision having been made down to the urethra, the farther progress of the knife was arrested by the foreign substances in the prostatic portion of the canal. These, upon being extracted, proved to be two calculi, a little larger than, and somewhat the shape of, the semi-lunar bone of the wrist. The incision was then extended throughout the greater part of the prostrate gland, and two calculi, about the size of pullets' eggs, were removed from the bladder by means of the scoop, it having been found difficult to grasp them with the forceps. As it was desirable to prevent the loss of even a small quantity of blood, a canula was immediately introduced, and the wound packed with lint. The patient soon rallied from the effects of the chloroform, and in less than six hours expressed himself relieved from all his suffering. The succeeding night proved to be more quiet and comfortable than any he had passed for more than three years. His general health improved rapidly from the day of the operation.

As it was necessary, in the subsequent treatment of the case, to have regard to the recto-vesical fistula, it was thought best to keep the wound in the perineum open for some time, in order to favor the closure of the former by natural means. For this purpose the canula was retained in place after the removal of the lint, and only withdrawn, from time to time, to clear its interior of mucus, and to rub off the incrustation of calculous substance which was being constantly deposited upon its vesical extremity. At the end of four weeks, the fistula having entirely closed, the canula was permanently withdrawn, and the wound, which had in the meantime contracted closely around the instrument, closed up in a few days; and the patient was able to retain his water for several hours, while in the recumbent posture.

An anal fistula, terminating externally upon one side of the perineum, and originally caused in all probability by the passage of the urine through the bowel, was divided about three weeks after the first operation, and healed without any difficulty.

The patient's health having been entirely restored, he returned home on the fortieth day after his admission.

The two larger stones weighed $1\frac{3}{4}$ oz. each, and the two smaller 4 drms. each, making in all $4\frac{1}{2}$ oz., troy. Upon making a section of the two former, it was found, contrary to expectation, that they had not formed upon fragments of bone as nuclei, but, what was strange,

the centre of each was of a semi-fluid consistence, resembling freshly mixed mortar in appearance.

After his return home, the patient suffered a good deal from inability to retain his water longer than an hour or two while exercising, for which he was advised to have a moderate sized catheter, or bougie, introduced occasionally, to subdue the irritation at the neck of the bladder; and as nothing has been heard from him since, it is presumed that this means had the desired effect.

Case V.—R. W., æt. 17, a native and resident of Kosiusco, Miss., has suffered more or less with vesical trouble for eight or ten years. He came to New Orleans, November 13, 1865, to consult Prof. Stone, who detected the presence of stone upon a first sounding. His general condition being good, an early operation was determined upon, for which purpose he was sent to the Charity Hospital, where he was cut by the lateral method, November 18, by Prof. Richardson, in the presence of the medical class. Hæmorrhage proving troublesome, the canula was introduced, and the wound packed with lint wet with a solution of ferric alum. The canula and lint were removed at the end of forty-eight hours, and no further difficulty occured. The patient returned home in thirty-three days from the time of operation, the wound being nearly cicatrized, and the urine passing entirely by the urethra. The stoned weighed 1 drm.

Case VI.—J. B. B., æt. 64, born in Massachusetts, but having resided since 1820 in Washington county, Miss., was admitted into Infirmary December 15, 1865. General health fair; person corpulent; temperament leuco-phlegmatic; vital powers rather feeble. Symptoms of calculus made their appearance about three years ago, but caused only slight difficulty until twelve months ago, since which time his sufferings have been very great. At the time of his admission he was laboring under diarrhœa, induced, it was supposed, from great nervous prostration, the result of his extreme dread of the operation. The diarrhœa having been arrested, and his nervous trepidation in a great measure subdued, the lateral operation was performed by Prof. Richardson on the 20th of December. The perineum was so deep, that the index finger could be made to reach the neck of the bladder only by pressing the knuckle far into the wound, so that some little difficulty was experienced in introducing the forceps. Three small calculi were extracted. There was but slight hæmorrhage, and the case progressed favorably for a few days, when

diarrhœa supervened and continued, despite the most energetic means to arrest it, until January 10th, when he expired. The three stones weighed in all 4 drms.

ART. V.—INGUINAL ANEURISM:

Successful ligation of External Iliac Artery by means of silver wire, by C. H. MASTIN, M. D., *Mobile.*

(Read before Mobile Med. Society, July 16, 1866)

ON the 25th of May, 1866, I was requested by my friend, Dr. W. T. Webb, of this city, to take charge of a case of Inguinal Aneurism, in the person of an old and trusted servant of his family, Venter Woods, col'd, 53 years of age. His general health was at this time good. For thirty-two years past he had led an active life upon a plantation, and with the exception of slight rheumatic attacks, had never been sick. These pains have always been located in the limb which is now the seat of diseased artery.

About the close of December, 1865, he noticed, for the first time, a small pulsating tumor in his left groin, which gradually increased in size, becoming more and more painful, until two months later (the 1st of March, 1866) he was forced to abandon his work. Believing he was suffering from his old rheumatism, which was proving more ungovernable than former attacks, he sought the advice of a physician residing near, and was advised by him to come to Mobile for an operation, as his disease "was not rheumatism." Several weeks later, when he was placed in my hands, I found a large fusiform aneurism of the left groin, pulsating violently, with great œdema of the thigh, leg and foot. This tumor, passing from under Poupart's ligament, had extended downward, until it protruded into the saphenous opening, lifting up the falciform process of the fascia lata, the crescentic edge of which process, stretched across the tumor, marked it with a distinct sulcus. The artery, from above the epigastric and circumflex ilii arteries, to considerably below the point from which the profunda leaves the femoral, was the seat of an aneurismal tumor.

A consultation with Drs. Nott, Brodie, and other medical friends, decided that ligation of the iliac artery offered the only possible chance for his recovery, as the very great œdema of the limb rendered it unsafe to attempt compression of the vessel. Having fully apprised him of the dangers of the operation and the probable failure of the same, he determined to take the chance offered. Just previous to the operation, by measurement we found a difference of six inches in circumference between the two thighs, and an increase in temperature of 3° in the region of the tumor, above that of the sound side; the former being 96°, the latter 93°.

June 9th. This morning, having cleared his bowels by an enema, and placed him fully under the influence of chloroform, assisted by my friends, Drs. Brodie, Ross and Iglehart, and in the presence of some fifteen medical gentlemen of the city, I proceeded to ligate the iliac artery, through a line of incision beginning at a point a little outside of the upper and outer edge of the external ring, and extending to a point in a line drawn from the anterior superior spine of the ilium to the umbilicus, and two and a half inches from that process. The incision passed in a plane parallel to the fibres of the tendon of the external oblique muscle, and was just five inches in length. After having cut through the integuments, together with the three muscles, the fascia transversalis was uncovered. I did not cut through this fascia at the point where it was first exposed, but with my hand gently passed between it and the muscle of the same name, I reached a point near the brim of the true pelvis, where the peritoneum leaves this fascia, to be reflected backward over the pelvic viscera. Here a small space is found, filled with cellular tissue, and at this point the fascia was opened, without injury to the peritoneum. Having reached this subfascial space, so to speak, by gently introducing the hand the peritoneum may be lifted upward from the psoas muscle, and the vessel exposed.

The greatest difficulty in the operation is the opening of the sheath of the vessel, which consists more truly of a mass of dense fibro-cellular tissue, binding the artery and vein close together, than a true arterial sheath. This renders the passage of the aneurismal needle around the artery both difficult and dangerous. I however succeeded in opening this, and, separating the vessels, passed from within outward a silver wire (No. 32, of the silversmith's gauge) around the external iliac, at a point half an inch below the bifurcation of the iliac proper. This wire was secured by a double knot; the ends, cut

close to the knot, were bent down and returned into the cellular sheath. All pulsation ceased in the tumor immediately upon the knot being drawn, previous to which time it had been intensely violent. The wound was now closed by three sutures of gilded annealed iron wire, which were passed deeply through the integuments and the three muscles, while the space intermediary between these sutures was closely united by pin sutures passed through the skin alone. The wound was now dressed with cold water, and, after the effects of the chloroform had passed off, 50 drops Tr. Opii were ordered, and the patient was returned to his bed.

To my friend, Dr. R. L. Brodie, I am indebted for the following notes of the progress of the case until it was discharged cured. It is an interesting fact that, with the great œdema and the age of the patient, there should have been so little fall of temperature in the leg, after having had the full supply of blood cut off. On one day only, the second after the operation, was there to be observed a difference of more than two degrees between the two limbs.

"5½, p. m., five hours since the operation, complains of some nausea, the effects of chloroform. No pulsation whatever in the tumor, which has measurably subsided, presenting a soft, doughy sensation upon pressure. Pulse; 66 beats at wrist. Thermometer in diseased groin shows a temperature of 98°; in groin of sound side, 100°. Bottles of hot water had been used around the leg since the operation, but were removed for 15 minutes before the thermometric observation was made.

June 10th, 9, a. m. Slept well during the night. No pain whatever, with only slight sensation of numbness in the leg and foot. Oedema much diminished. Temperature of room, 86°; sound groin, 104°; diseased groin, 100°. Passed a quantity of pale limpid urine.

June 11th, 11½, a. m. Rested quietly last night. No pain either in leg or bowels. Incision appears to be glued firmly together; tumor rather more firm and much lessened in size. Oedema continues to subside. Pulse, 98. Temperature of room, 86°; diseased groin, 96°; sound groin, 98°.

June 12th, 10½, a. m. General condition favorable; although he was somewhat restless in the early part of the night, toward morning he slept quietly. His appetite is capricious. The wound has, toward its upper and outer angle, a slight erysipelatous blush, with some tenderness upon pressure. Oedema of limb much reduced. Pulse, 84. Temperature of room, 86°; groin of operation, 96°; sound side, 98°.

June 13th, 11, a. m. Slept well last night. No pain. Pulse, 86. Tongue slightly furred; bowels unmoved since operation. A solution of citrate of magnesia was ordered, with instructions to repeat the same if necessary. The wound looks better, the blush having faded. No change in the thermometric condition.

June 14th, 9, a. m. His condition appears improved. Magnesia operated well, but left him with some slight nausea, which an effervescing draught quieted. Tongue cleaning; pulse reduced to 80. No appreciable difference in thermometric state since the 12th."

June 15th, 9½, a. m. This morning I noticed a point of ulceration around the *gilded* sutures, and concluded to remove them. I was not a little astonished to see, upon their removal, a tablespoonful of thick pus pour out from the space closed by these sutures. The pin sutures showed no appearance of ulceration, and the edges of the wound, at the points through which the pins had passed, seemed to be thoroughly healed.

Was it probable that the iron wire, which was gilded, could have proved more irritating than the ordinary "Carlsbad suture-pin;" or may it have been possible that a sort of galvanic action had been set up by this wire, composed as it is of two different metals, producing a galvanic issue? There was no more strain upon the wire than upon the pins, as both were passed and confined simply to close the wound without pressure. Whatever may have been the cause, one thing is certain — there has been no more suppuration or ulceration, save around the points through which have passed these gilded sutures. The discharge of pus comes from a little pouch entirely subcutaneous, and just where these sutures have passed. The muscular wound is entirely closed, also the portions of integument united by the pins.

A mixture of chlorate of potash, with a few drops of the muriated tr. of iron, was ordered every three hours; also compress over abscess, with roller around abdomen.

"June 16th, 11, a. m. Venter has improved very much within the past twenty-four hours, and every symptom gives assurance that he is decidedly better. Tongue clean, and discharge of pus much lessened. No pain. Pulse, 84. Ordered the medicine continued at intervals of four hours, and gave him a bottle of porter.

"June 19th, 11, a. m. There has been no material change in his condition for several days, with the exception that, from the point of ulceration, two small sloughs of cellular tissue escaped. The pin

sutures are removed to-day. No ulceration whatever where they were used, and the wound perfectly cicatrized, with the exception of the small pouch around the point of wire sutures. This however granulates kindly. He takes brandy, porter, and good diet.

"June 23d. Nothing has occured of interest since the last note. Fourteen days have elapsed since the operation. The wound has nearly healed. Got out of bed to-day and walked around his room. Has no pain, and very little numbness about his leg or foot. Tumor lessened to almost the size of a pecan. Oedema scarcely to be noticed. Circulation through the collaterals, from all appearances, established."

July 14th. Venter is walking about the city. His limb has assumed its natural appearance, the tumor has disappeared, and, with the exception of weakness, the result of confinement and the excessively hot spell of weather through which we have recently passed, we may without hesitation pronounce him well, and radically cured.

The line of incision adopted in this operation avoided injury to the epigastric artery, and lessened the chances of ventral hernia, as was liable in the line proposed by Sir Astley Cooper. There was also less danger of injury to the peritoneum than in the operation of Abernethy or Mott. On the score of hæmorrhage, no vessel is in danger, not even the little artery of Haller which supplies the skin. Being below the line of incision, it was avoided, and scarcely two spoonsful of blood were lost. No ligature was used, and the little venous blood lost was apparently the result of congestion of the dermal tissue.

It was my intention, when the operation was commenced, to ligate the common iliac, as the size and extent of the aneurism justified the opinion that the vessel was diseased, at least up to the bifurcation. I was relieved, however, to find sound space upon which I could secure a ligature, half an inch below the point at which the external leaves the common iliac. This offered a small space for a clot; but, with the hope of having an encysted ligature, I determined to try the experiment. This line of incision afforded ample space to ligate the common iliac, should it have been found necessary to do so, without extending it longer, as is necessary in the operation of Abernethy; or to make an angular cut, as is requisite, if the line of Sir Astley Cooper is adopted. The gentlemen around the table saw clearly the entire course of the common iliac, when the wound was held apart by the curved spatulæ, and there was no more

difficulty in ligating one than the other. By incising the fascia at the place I have suggested, we are absolutely safe, as regards doing any injury to the peritoneum; and a sort of valvular wound being made, we lessen the risk of ventral hernia.

Upon the point of ligating so large a vessel as the iliac with a metallic thread, and leaving the same to become encysted around the artery, I am not aware that it has ever before been successfully performed. In 1859 Dr. Stone, of New Orleans, tied the common iliac, for a case of aneurism of the external iliac, with a silver thread; but, unfortunately, his patient died on the twenty-sixth day after the operation, from some disease of the bowels, consequently offering no satisfactory results as to the use of metallic threads in these operations. If it can be established as a safe procedure (and I have no hesitation in saying that it can be), we have gained much in being enabled to close the wound by the first intention, thus lessening the chance of inflammation, suppuration, hernia, and, not least of all, secondary hæmorrhage. This usually takes place at the time when the ligature ulcerates through the coats of the artery, and the impetus of the heart's force impelling the blood against the clot, an opening is forced in the weakened tissue of the vessel, and hæmorrhage is the result. However, when the metallic thread has been used, and not tied so tight as to rupture the coats of the vessel, ulceration, if it does occur, is at least retarded, until the clot on the proximal side has in a measure become organized and the vessel obliterated. There being no clot formed on the distal side of the ligature, even should this ligature be late in coming away, and the proximal side perfectly closed by clot, or even obliterated, we still have danger of hæmorrhage at the time the ligature separates, dependent upon a recurrent circulation through the sack of the aneurism.

However, should we have been fortunate enough to place upon the vessel a ligature of some substance which will be slow in producing ulceration, or perhaps not cause it at all, but lie harmless in the tissues, we at least lessen the chances of hæmorrhage, and convert a hitherto grave operation into one of comparatively little danger. Even with the advantages offered by these ligatures, it must not be considered that they are entirely free from danger, or that I am disposed, under all circumstances, to advocate their use. Such are not the views which I entertain. I am satisfied that the trouble most to be apprehended in the use of inorganic ligatures, where they are left to be encysted in the sheath of the vessel, is subsequent irrita-

tion, which may be produced in the associate nerve against which they are to lie in contact. That they will become encysted and remain innocuous, so far as ulceration or subsequent abscess is to be considered, has been fully tested and proved by experiments to which I will refer before closing this article. I am persuaded, however, that the point has not yet been settled, and that there is probable danger of neuritis being excited, which will necessitate the removal of the metallic knot. We see this state of things to take place when a leaden ball has been lying for years harmless in the flesh; it may change position, and give trouble from pressure upon a nerve twig. In these cases the pain is intolerable, and when the ball is removed, we observe the cyst to be dry, offering no appearance of suppurative inflammation. The same thing is observed where other inorganic substances have become encysted and remain, without giving trouble, for years. I have recently removed a fragment of glass, about the size of a filbert, from under the plantar fascia of a gentleman of this city, which had been there for the past twelve years, and, until very recently, had caused him no pain. The glass was perfectly encysted, showing no appearance whatever of either inflammation or moisture. The circumstance of having trod upon the glass years before had been forgotten, and was not remembered until he sought relief for what he believed to be "a wen in the bottom of his foot." It was now causing him trouble by interfering with his locomotion, owing to pressure upon the internal plantar nerve.

That the pressure of the ligature against a nerve may cause trouble, at least functional, if not organic, there can be no doubt. In 1849 I remember to have been present at the ligation of the common carotid artery for aneurism. No operation was ever better performed. The sheath was opened without injury to its contents, and a silk thread passed around the vessel. Almost immediately the most intense hiccough set in, caused by the presence of the ligature against the pneumogastric nerve, and this continued to such an extent as to threaten the life of the patient. By the use of antispasmodics, opiates, etc., he was rendered more comfortable until the separation of the ligature, which fortunately took place without hæmorrhage, and the patient was cured.

In those arteries which have no associate nerve in their sheath, these objections do not obtain. The iliac offers a most favorable example, as the nearest nerve, the anterior crural, is separated in its entire course from the vessels by the psoas muscle, and with the ex-

ception of the genito-crural nerve, a small thread lying outside of the sheath, there is no nerve upon which pressure can be made. Hitherto, the liability to secondary hæmorrhage after ligation of this vessel has been so great, that the operation has offered few hopes of success; hence some procedure is requisite, by which this danger may be lessened or averted. I believe nothing will offer more chances of a successful issue, than the use of the metallic thread.

Just here, upon the subject of metallic ligatures, the profession has been much interested for the past few years, and much has been written, both in Europe and America. It appears to my mind, that the *suture* has been confounded with the *ligature*, and, with this view, it has been attributed to Dr. J. Marion Sims, as having been its originator. He certainly deserves the full meed of praise for his application of the silver thread as a *suture*, in his special operations; and the publication of his cases, together with his remarkable success in an operation hitherto considered almost as the opprobrium of our art, has won for him the high position which he occupies, and has introduced extensively in the various operations of surgery the use of this wire, as a *suture*, but not as a *ligature*. To the late Dr. Henry S. Levert, of this city, is due the credit of first having brought the attention of the profession to this most interesting subject. At the suggestion of the late Dr. Physic (who had observed that leaden balls would remain apparently harmless in the tissues after becoming encysted), he was induced to institute a series of experiments upon inferior animals, in which he ligated the various large arteries, using both organic and inorganic material as the ligature. These experiments established the fact that leaden, gold, and silver wire would become encysted, and not cause ulceration of the arterial tunic. The result of these experiments, some thirty or forty in number, constituted his inaugural thesis, and was afterwards published, by order of the faculty, in the "*American Journal of Med. Sciences*," vol. iv., p. 17, 1829. The preparations were deposited as wet specimens, together with a history of the same, being a contribution to the "Wistar Museum of the University of Penn."*

It remained however to be applied to practice, and it is to be regretted that this justly honored physician and surgeon, who afterwards enjoyed a large and extensive field of observation, should have neglected to introduce the principles he first established.

*Note.—During the summer of 1848, I repeated the experiments of Dr. L. upon the arteries of dogs, using principally the leaden wire; and after having repeated them to a considerable extent, in almost every instance I attained the same results described in the paper above mentioned.

I have been led to make this statement as an act of justice to the memory of Dr. Levert, without attempting to detract anything from those who may have applied the principle suggested to more successful practice. True it is, he who, acting upon the suggestions of another, puts in practice an art, is justly entitled to the reward of his labors; but the mind which first conceived the idea, should receive its due proportion. It is meet, therefore, that we "render unto Cæsar the things that are Cæsar's."

ART. VI. CYANURET OF POTASSIUM IN TETANUS:

By JNO. E. DUFFEL, M. D., *Ascension Parish, Louisiana.*

HAVING observed a case of traumatic tetanus successfully treated with tartrate of antimony, a hitherto new remedy, I beg leave to report one, less interesting, as my observations could not be so extensive, but showing, nevertheless, the action and great benefit of a remedy which in other hands also might be of great advantage. As yet, I have met with this application of it in none of the books, and was first led to give it a trial by Dr. Sabin Martin, of New Orleans, who some years ago, after having performed many cures, wrote extensively on the subject.

I was one evening summoned to visit W. E., a little boy of ten years, who had just been severely burned while playing with some wet gunpowder. The injuries extended on the whole left side of the chest and abdomen, from the umbilicus to the clavicle, and thence backward from the spine of the scapula to the last lumbar vertebra. His arms also, from the fingers to the elbow, and his lower extremities, from the toes to the scrotum, were deeply burned, and his left testicle was badly injured. In fact his whole body showed but one extensive vesication. The pulse was quick and full, the extremities were cold, and the patient did not complain, till the common dressing, consisting of linseed oil and lime water, was applied on some finely carded cotton. Then he would lay his hand on

the precordial region, as if to say that there existed all his pain. A mixture consisting of sweet spirits of nitre and paregoric, was ordered to be given every hour, till it produced sleep, together with the application of hot bricks to the feet.

Next morning I found my little patient with considerable fever, and asking for water at every moment. The same mixture and dressing were ordered to be continued, and cold lotions to be applied to the head, where he appeared to suffer greatly. Towards evening he was more quiet, and seemed inclined to sleep. On the third day I found him still with some fever, though looking better, having slept a few hours. Pulse yet strong, but not so quick, and head symptoms considerably abated. Bowels had been moved early that morning. Desirous of substituting some fresh cotton for what had already been on for three days, I found it extremely difficult, as it had nearly identified itself with the flesh, and could not possibly be removed without causing much pain. The liniment alone was spread upon the wounds, and towards evening I found in them a great tendency to heal.

On the morning of the fourth day the patient still had a little fever; in other respects, pulse good. Was very quiet, having rested well all night. Ordered same mixture and dressing to be continued. On examining his burns, saw that they were healing very fast and looking quite healthy. Returned in the evening, and found patient without any fever; had slept most of the afternoon, and was crying for something to eat.

Fully satisfied that he was doing well, I entertained strong hopes of soon seeing him up again. However, next morning I was called at an early hour to his bedside, by a messenger who said that the child was dying. Scarcely knowing how to account for such a sudden change, I immediately went, and found my patient in a most violent paroxysm of tetanus. The spasms did not last long, and having waited for a severe one, I could not be mistaken as to its being a genuine case of opisthotonos. Pulse was natural, but breathing short and hurried; jaws were already partially locked, and fists so firmly clenched that no power could open them. Bowels not having been moved since the previous day, a small clyster was ordered, and immediately he was put on cyanuret of potassium, the twenty-sixth part of a grain every three-quarters of an hour.

Next day found the patient still suffering with violent paroxysms of convulsions, which I observed to be severer and longer than those

of the previous day; for during the spasms the occiput and heels alone rested on the bed. Paregoric in small doses having failed to procure sleep, I added to each dose of the cyanuret the sixteenth part of a grain of sulphate of morphia, to be given as before, and discontinued on the appearance of sleep. I must here remark, that the only effect which I noticed from the action of the cyanuret of potassium, before combining it with the morphine, was a considerable lowering of the pulse and a tendency to allay the pain during the spasms, though the paroxysms themselves lasted as long as before. I therefore increased the dose gradually, till, on the fifth day, he was taking the twentieth part of a grain of the cyanuret of potassium with the tenth of a grain of morphine, every hour.

On the sixth day, spasms briefer and less painful, and extremities less rigid. Mixture ordered to be given only every hour and a half. Thus the little fellow continued improving till the twentieth day after the appearance of the first tetanic spasm, and the twenty-fifth after the burn; when, seeing that the spasms had entirely ceased, the jaws relaxed, and that deglutition was perfect, I discontinued the medication and turned my attention to the stiffness of the extremities. During the first ten days, when the convulsions were most severe, his jaws were never so locked that he could not receive his broth in a small spoon, and his usual drink, coffee. Water he did not wish to see.

Six weeks from the date of the injury, I returned and found him crawling on the floor, being yet too weak to stand. His wounds were completely healed, but left large cicatrices, which will permanently remain.

ART. VII.—CASE OF GEN. TWIGGS:

Biliary Fistula, communicating with the brochial tubes of the right lung. By A. J. FOARD, M. D., *Columbus, Ga.*

GENERAL Twiggs was taken sick on the 8th of April, 1859. His disease was supposed to be bilious colic, for which he was treated. His health slowly improved until the 2d of May, when he

rode out in his carriage. Since the 16th of April, he had had profuse perspirations during and after sleep, and had complained much of debility and pain in the right shoulder. After eating a light dinner, on the 7th of May, he had pain in the stomach and vomiting; had fever on the 8th, and a chill followed by fever on the 9th, soon after which I saw him with Dr. Jarvis. His condition was as follows: skin and conjunctiva deeply tinged with bile; a thick brown coating on the tongue and disgusting taste; loathing of food; bilious urine; slight cough; severe pain in the right shoulder, not increased by pressure or motion; great debility; "an indescribable sense of suffering and oppression — feels as if he was paralyzed;" pulse 100; lungs healthy; and the liver, to which particular attention was directed, as being the organ most probably diseased, was, so far as could be judged from examination, in a perfectly normal condition — there was no tenderness nor enlargement. There had been, at no time, pain in the region of the liver, and it had not before been suspected of being in a diseased state; but why the jaundice, bilious urine and pain in the shoulder, which certainly is not rheumatic? During the day rigors were frequent, followed by flushing of the face and profuse perspiration. Blue mass and quinine had been given for two days, and a liniment used for the shoulder.

May 10th.—Saw the General at 10 o'clock, a. m., and learned that he had "slept well all night until 4 o'clock, a. m.; then a dry hacking cough came on and continued until about 7 o'clock, a. m., when he suddenly vomited about a half pint of pure bile." Found him still passing bile, which he continued to do all day, coughing constantly. Mucous râle audible upon applying the ear to the chest; respiratory murmur natural; mucous membrane of the throat very much relaxed and discolored with bile; thick brown coating of bile on the tongue and lips; skin and urine as yesterday; pain in the shoulder not so great since passing of bile commenced; does not complain of it, but of the cough and disgusting taste of bile. Rigors were frequent during the day, and hectic flushing; skin either hot or bathed in perspiration; bile seems to be passing off by the salivary glands and by the kidneys; constant moaning and some stupor; pulse varied during the day from 100 to 120 beats a minute. Took cathartic pills this morning, and to-night ol. ricini.

11th.—Medicine acted freely; fæces bilious, so there is no obstruction to passage of bile to the intestines; slept but little; cough and expectoration of bile continued all night; slight diminution of bile

in the urine, but no change perceptible in the skin. Had severe pain in the shoulder this morning, followed in a few hours by a greater flow of bile and mucus, during which the ear was applied to the right side of the chest, and the exact sounds of hæmotothorax were heard. Upon percussion a very slight diminution of resonance, only to be observed by comparison with left lung, which was free from any secretion. There seemed to be very great suffering, not from pain, but a horrible sense of suffocation and impending dissolution. Hæmatosis was imperfect, and the respiration consequently very much hurried; livid hue of the face and some stupor; moaning and muttering; frequent rigors; flushing and profuse perspiration, which had to be wiped from the face and arms every few minutes; tongue, teeth, and lips covered with bile; pulse 120 nearly all day; great exhaustion and depression of spirits.

12th.—But little change in the symptoms since yesterday. Cough and expectoration; yellowness of skin not so great; urine of more natural color; disgusting taste of bile is very annoying; much despondency; some dullness over the right lung, behind and low down, and indistinctness of respiratory murmur; anteriorly, same condition of lung as yesterday. Pulse variable; occasional rigors, flushes and perspiration; has slept more to-day, but moans and mutters constantly during sleep.

13th.—Cough not so frequent, and bile and mucus in less quantity; mucous râle; diminished respiratory murmur in lower part of right lung anteriorly; gurgling and amphoric respiration. In the lower part of the lung posteriorly the respiration is bronchial, with dullness on percussion. Debility great; pulse 120; has eaten nothing of consequence since the 9th; has a disgust for food.

14th.—Pain in the shoulder last night and this morning; cough very much increased, with the passage of a larger quantity of bile. When the bronchial tubes are not filled with bile and mucus, respiration anteriorly in the right lung is perfectly natural, but posteriorly, low down, is still bronchial, with increased vocal resonance. Gurgling and amphoric respiration still continue, but not quite so distinct. Cough continues until the accumulation of bile and mucus in the lung has passed off; then there is comparative ease for a few hours. Pulse 115, but during paroxysms of coughing often rises to 130; urine natural in appearance; yellowness of skin nearly all disappeared; not so much moaning and muttering; no stupor.

15th.—Cough and expectoration of bile less to-day; sweats still continue; skin of nearly natural temperature during the day; has no pain, but has hiccough occasionally.

16th.—Lung posteriorly sounds clearer, but respiration low down is still bronchial. Anteriorly there is a very slight dullness, but it is apparent only by comparison. Cough and expectoration of bile still continue, but there is quite a large quantity of mucus mixed with the bile. No pus has been passed with the bile. Gurgling and amphoric respiration have not been heard for two days. Rigors have not been observed to-day, and the sweating is less; skin free from tinge of bile; some hiccough and slight pain in the shoulder.

17th.—Rested very well last night. Early this morning, after a severe paroxysm of coughing, the right lung was suddenly filled with bile and mucus; respiratory murmur ceased, and the only sound audible was mucous râle in the large tubes; coughing and expectoration, with occasional efforts to vomit, continued constantly for two hours, during which time a very large quantity of bile passed through the lung, as much as two ounces being forcibly ejected from the month at one effort. There was not less than 24 oz. of fluid matter (bile and mucus) passed through the lung during the two hours. After the lung had become free from the secretion, it was examined, and more dullness found posteriorly and greater vocal resonance; slight friction sound anteriorly, as yesterday; has not had pain in the chest at any time. Hiccough still continues. Had a little fever after the paroxysm of coughing, which passed off before night. In the afternoon he had a good appetite, and eat heartily of bread and milk and beef-tea.

18th.—Passed the night comfortably, and appears much better this morning. Very little cough, and no bile in the expectoration; pulse 90; chest anteriorly sounds natural; no change posteriorly; very little sweating. Hiccough still continues. There has been congestion of the right lung several times to-day.

19th.—Slept well last night, and has passed a comfortable day. Has had no fever, and very little cough with mucus expectoration, occasionally very slightly tinged with bile. Respiration is quite natural, anteriorly, in the lung, but posteriorly is bronchial. Has a good appetite. Hiccough occasionally, and congestion of the lung several times during the day.

20th.—During the forenoon was much better than he had been at any time since he was taken sick on the 7th. There was no cough;

no fever; skin natural in temperature and appearance; appetite good. Sometime in the afternoon the hiccough became very distressing, and there was sudden and violent congestion of the right lung for a few minutes, during which time the respiratory murmur entirely ceased in the lung. There seemed to be sudden closure of the smaller bronchial tubes by spasm. The pulse was intermittent, hiccough continued all night, and there was pain in the shoulder.

21st.—This morning, after a paroxysm of coughing, there was a sudden flow of bile into the lung, attended with the same symptoms as that of the 17th, since which time there had been no expectoration of bile, and it was supposed that the communication between the lung and liver had been closed; which supposition was undoubtedly correct, or there would have been bile in the expectoration. A large accumulation took place in the cavity in the liver during the 18th, 19th and 20th, and was suddenly poured into the lung by the opening of the fistula, if I may so call it. After the lung was freed from the secretion, the cough ceased, and also the pain in the shoulder, which is a sure indication of accumulation of bile in the cavity. Hiccough also ceased; pulse continues intermittent.

22d.—Passed the night quietly, and feels well this morning. No cough of consequence, and no expectoration; good appetite; sweating has ceased almost entirely; has had no rigors for several days; has had slight hiccough during the day, and congestion of the lung several times; pulse intermittent; still bronchial respiration and dullness over lower part of lung posteriorly; must be consolidation; lung perfectly natural to auscultation and percussion anteriorly.

23d.—At 9 o'clock, a. m., feels very well, but has a slight pain in the right shoulder; some hiccough; no cough nor expectoration; pulse 84; has had two natural discharges from the bowels without medicine; appetite good. At 3 o'clock, p. m., after a violent paroxysm of coughing, the channel of communication between the liver and lung, which had been closed up since the 21st inst., suddenly gave way, and the lung filled with bile. Sickness of stomach came to the relief of the lung, by causing violent efforts to vomit, which forced from the lung about a pint of bile, almost pure; after which there was much relief, but the coughing and expectoration continued until night.

24th.—Cough continued last night until 2, a. m., at which time it ceased, and the General slept until 4 o'clock, a. m., at which hour I visited him, and found him in a state of collapse. The skin was cold,

pulse 120 and irregularly intermittent, and general relaxation, with incontinence of fæces and urine. Stimulants were freely administered. Slept several hours after daylight, and felt so much refreshed that he sat up long enough to have his linen changed. Has very little cough and no expectoration. Pulse, which has been intermittent for several days, is now regular; has had no hiccough nor fever to-day; is free from all pain.

25th.—Slept well last night, and feels well to-day; has a good appetite, and has eaten heartily; free from cough, expectoration and pain; lung in same condition as when last examined; countenance does not indicate suffering.

26th.—Slept well last night. Has no cough, and had none during the night; pulse 72; breathing natural. I left the General about 9 o'clock, a. m., and did not see him again until sent for by Lt. ——, who informed me that, about 10 o'clock, the General complained of pain in the shoulder, and that, between 11 and 12 o'clock, he had a paroxysm of coughing, with the flow of a large quantity of bile into the lung; that "he had vomited and passed off a great deal of bile," estimated by him to be more than a pint. After I saw him he vomited twice, passing off from the lung each time four or six ounces of bile, mixed with mucus. Cough and expectoration continued until 5 o'clock, p. m., when it ceased, the lung being again free from the secretion.

27th.—Slept well last night; eat a hearty breakfast this morning; respiration anteriorly undisturbed, and the lung perfectly clear on percussion; posteriorly, dullness half way up the lung, with bronchial respiration; no cough and no expectoration. For several days past, occasionally, a very small quantity of healthy pus has been observed with the matter expectorated. Gurgling and amphoric respiration, which were heard only a few days, passed off with the condition of the opening into the cavity in the liver, which caused it.

28th.—Slept well last night; has no pain, cough nor expectoration; has a good appetite, and is gaining strength fast. It is thought that the fistula will not open again so soon, if at all. There is effusion of fluid in the chest.

29th.—Continues to improve; a slight increase of effusion.

30th.—Same as yesterday.

June 1st.—Continues to improve; no increase of effusion.

4th.—Has continued to improve, without a bad symptom; effusion diminished perceptibly.

June 21st.—When I last examined the General, there was some dullness over the lower part of the right lung, posteriorly, and he complained of slight uneasiness in his side, which no doubt was caused by the adhesions of the lung, diaphragm and liver.

The question might arise as to the cause of this disease: did it originate in inflammation of the biliary duct or ducts, in that part of the liver where the cavity formed, with obstruction to the passage of the bile, or did the obstruction originate from a gall stone? When the obstruction to the flow of bile took place is not known, but it is most probable that it was on the 7th or 8th of April, when the General was first taken sick and was treated for bilious colic. As soon as the obstruction took place, gradual dilatation of the duct commenced; with progressive absorption of the surrounding tissues and consequent formation of a cavity. It is remarkable that there should have been no pus in the cavity, but none was seen until the healing process commenced. Another very remarkable feature in the case is, that the lung should have suffered so little. The jaundice which existed to so great an extent, must have been more from absorption of bile than non-secretion by the liver, for we knew, from the fæces, that there was a flow of bile into the intestine. The quantity of bile passed through the lung was certainly much greater than that secreted by the liver under ordinary circumstances, and was caused no doubt by the state of excitation into which the organ must have been thrown by the constant coughing. The bile caused the coughing, and the cough, in all probability, assisted to produce the bile. There may have been some other condition of the liver which caused a super-secretion.

The account given above of the General's case is taken from my notes, almost word for word, details in the treatment being left out, as of very little importance, since it would suggest itself at once to the mind of the physician. The substance of the treatment was as follows: cathartics or enemata, when deemed necessary; free use of stimulants; stimulating expectorants, etc.

PROGRESS OF MEDICINE.

Operative Surgery — Surgical Pathology.

Art. I.—*Contributions to Aural Surgery. On Catarrhal Inflammation of the Cavity of the Tympanum occurring in Young Persons.* By D. B. St. John Roosa, M. D., Clinical Lecturer on Aural Surgery and Ophthalmology in the University of the City of New York, late Aural Surgeon to the N. Y. Eye and Ear Infirmary.

As is well known, inflammatory affections of the ear are very common among young persons. An "earache" is one of the most frequent of the ailments of childhood. Besides the fearful pain which it involves, it may have consequences dangerous to the integrity of the organ affected. The mucous membrane of the tonsils and pharynx is probably the most common starting-point of these inflammations; from thence the passage along the Eustachian tube to the cavity of the tympanum is not only a very easy, but, as experience proves, an extremely frequent occurrence. Thus in the course of one of the exanthemata, acute catarrhal inflammation of the middle ear arises, which in weakly constitutions readily becomes purulent, and ulceration with perforation of the membrana tympani, one of Nature's conservative processes, takes place. It is not the purpose of the present article to speak of the cases which have thus been outlined, but of a variety of catarrhal inflammation of the middle ear, somewhat different from these, yet having many analagous points. They are inflammations occurring in young persons without any positive exciting cause, although such a provocation is not always wanting. They are cases which, with the means now at our hands, are peculiarly amenable to treatment, and furnish the most gratifying results. The subjective symptoms of the affection may be stated as follows: It is observed that the patient without perhaps suffering very often from pain in the ear, is very often somewhat hard of hearing, being so much so as not to hear ordinary conversation. This passes off without treatment, but the trouble recurs, the attacks become more frequent, and finally in the course of a few months or years, the patient settles down with a continued impairment of the hearing. The general health is not apt to be much impaired, although some defect in nutrition is generally found. Objectively the following symptoms are observed: The pharynx is found in a state of inflammation, little elevations like granulations are seen on its surface, the secretion is in excess. The tonsils may or may not be hypertrophied. The membrana tympani, instead of having its normal "neutral gray" color, is of a pinkish hue, with an exceedingly brilliant appearance. The vessels are not generally to be distinctly traced on any part of it. The triangular light spot is either entirely absent, or is smaller than normal, indicating that the position of the drum is changed. It is apt to be the case that proper hygienic rules have not been observed in the management of

the young patient, who has been allowed to eat and drink food improper for growing persons, for example, tea and coffee, pastry, &c., to the greater or less exclusion of simpler and more nutritious substances, and thus a capricious state of the appetite has been induced. In the case of boys, frequent and prolonged bathing, ducking the head under the water, is sometimes found to cause an attack of, or to increase the hardness of hearing. The hearing, as tested with the watch, is found very much impaired, and only conversation specially addressed to the patient, and this in a loud tone of voice, is heard.

The regulation of the diet of such patients, the wearing of flannel next the skin, the abstaining from any habits which may be recognized as predisposing to inflammation of delicate structures, building up of the system by a proper therapeutic course, such as the exhibition of cod-liver oil, ferri iodidi syrup., etc., with proper local attention to the mucous membrane of the pharynx, will undoubtedly in time, allow Nature to relieve these cases ; but the impairment of hearing, which is the most striking and troublesome symptom, will be the last one relieved. We have, however, the means at our hands, as was indicated above, in Politzer's method of rendering the Eustachian tube pervious, of instantly improving the hearing, thus removing the most embarrassing symptom, while we go on with the proper general treatment, curing the disease on which this symptom depends. The use of the Eustachian catheter will probably accomplish the same ends, but its employment, though not entirely impracticable, is very difficult in young persons. Politzer's method is now so fully known to the profession, that any description of it seems unnecessary ; yet for the sake of completeness in this article, we may say that it consists essentially of blowing air into one nostril from a gutta-percha bag, the other nostril and the mouth being closed, the patient swallowing at the moment the air is blown.* It may be supposed that the impairment of the hearing in these cases is due to a plugging up of the faucial orifice of the Eustachian tube, and also of the calibre of the tube by mucus, which is suddenly expelled by the column of air driven in. Structural changes, that is, thickening of the mucous membrane, bands of adhesion such as obtain in old cases of chronic catarrhal inflammation of the middle ear, have not probably occurred. Indeed, the appearance of the membrana tympani, as it has been described, substantiates this view, there being generally no thickening of the layer of mucous membrane observed either on the periphery, or across its surface. If, however, such changes have occurred, the improvement to the hearing will be correspondingly less. The nature and treatment of this affection may perhaps be better illustrated by the recital of a few cases, than by any further remarks.

CASE 1.—Willie S., aged 11, St. Louis, April 28, 1865. Has been growing deaf for some months, is rather delicate. His appetite is extremely capricious, drinks tea and coffee in great excess. He cannot hear ordinary conversation. The left membrana tympani is of a pinkish hue, the right secretes a slight amount of pus, is however intact. The tonsils are somewhat enlarged. Hears an ordinary ticking watch (which should be heard from three to five feet) five inches

* *Vide* Braithwaite, Part xlix, p. 178.

on the right side. One inch on the left. Politzer's method is practised two or three times, when the hearing distance was doubled by the watch on the left side, and ordinary conversation was heard with some ease. He was seen every day or two until May 4th, when he returned home, hearing the watch more than two feet on the left side, and six inches on the right, and was not at all perceived to be deaf in conversation. The appropriate constitutional treatment was carried out, only nutritious diet was allowed, an astringent was applied to the right drum, and Politzer's method was practised every two days. This treatment was still carried on at his home by other hands, and the patient was heard from as being still further improved.

Case 2.—F. S. B., aged 16, N. Y., September 1, 1865. Has been deaf at times for a number of years, and for the past summer persistently so. His general condition is fair, is well developed. The tonsils were so much hypertrophied as to impede respiration, but they were removed previous to his coming under my observation. The pharynx secretes excessively as well as the nasal mucous membrane. There are numerous granulations scattered over the pharynx. The drums are pinkish, brilliant in appearance. The light spot is elongated. The watch is heard about six inches from each auricle.

Politzer's method was practised three or four times when the hearing distance extended to sixteen inches on the right side, and ten on the left. A gargle containing iodine and brandy was ordered to be used twice a day; he was also to practise Politzer's method twice a week, in connection with the iodine inhaler. The patient continued to improve, and at the present writing, April 20, 1866, the treatment has been abandoned, the hearing power being nearly if not quite normal. The patient goes to school every day. He was seen by me for some weeks, once a week, while his father, who is a distinguished physician of this city, carried out the treatment at home, which consisted in the use of the gargle, inflating the middle ear by Politzer's method once in three or four days, with attention to the general health.

Case 3.—Edgar S., aged 17, Conn., October 20, 1865. Since the patient was four or five years old he has had more or less trouble in hearing. A few years ago the ears discharged and pained at intervals. The general health is fair; he is tall, well developed, except that he is pigeon breasted. Hearing distance with watch, right ear, one inch; left, two inches. The right drum is sunken, and is quite white in color; no light spot exists. The left drum is intensely reddened and sunken; the centre seems to be united to the wall of the cavity of the tympanum. After the use of Politzer's method in combination with a bulb containing a sponge saturated with tincture of iodine† a few times, the hearing distance on the left side was increased to eight inches, but it remained the same. He also heard and pronounced after the speaker words spoken eighteen feet off, while a few moments before he could only hear them six feet. A Politzer's apparatus was ordered to be used at home, under the direction of his father, twice a week for a month: a slight counter irritation to be kept up over the mastoid process, when he was to report himself.

† Amer. Journal Med. Sciences, Jan. 1866, p. 105

Nov. 26.—The patient again presented himself, having carried out the treatment as directed, and can now hear the watch on the right side three inches, on the left *twenty* inches and more. He hears conversation with ease. Patient was directed to desist from treatment. He has not been seen since.

CASE 4.—Michael W., aged 13, at Eye and Ear Infirmary, Nov. 2, 1865, a delicate, bright-looking boy. Whenever he has a cold (as his father says) "it falls to his ears and he gets deaf." Right membrana tympani pink and sunken; left sunken, but of about normal color; tonsils have been ulcerated; pharynx secreting excessively; hearing distance, right ear, four inches; left, three inches. He was seen twice a week until January 17, 1866; iodized air being used by Politzer's method at each visit; cod-liver oil and ferri iodidi syrup were administered. He had occasional partial relapses, but was, at the above date, discharged cured. His hearing improved at the first use of the method very markedly.

CASE 5.—Girl aged 16, at Ear and Eye Clinic in University Medical College, March 28, 1866. Has not heard ordinary conversation for years, and has been very much embarrassed in swallowing and breathing on account of enlarged tonsils; general condition is fair; the voice is extremely nasal; only hears when addressed in a loud tone of voice; the watch is heard two inches on the right side, one inch on the left; membrana tympani present nothing striking in appearance, except that they are quite brilliant; the tonsils are excessively hypertrophied. The use of Politzer's method immediately improved the hearing somewhat, which improvement lasted according to the patient's statement about a day. When next seen, the tonsils were excised with the forceps and scissors, a long outgrowth being dragged down from behind the soft palate on the right side, which must have pressed upon the orifice of the eustachian tube, and then the iodized air was driven into the tube. The hearing distance became two feet on the right side, and about six inches on the left. An iodine gargle was ordered, with cod-liver oil, a half tablespoonful to be taken three times a day. The patient is now under treatment, and still, April 26, 1866, continues to improve, hearing very well, with no trouble in respiration. It is, perhaps, needless to narrate more cases, of which more quite as striking, both in private and public practice, could be presented.

Such cases as the above are perhaps those which above all others show the excellency of Politzer's method, and for which it is especially adapted. It is confidently asserted that its use in the treatment of this class of patients will render the progress of the case highly satisfactory, which under the old method could be hardly said to be the case. After the first use of the instrument the improvement which occurs will probably only last a day or two, but I have never known the hearing to become worse, and the repeated (say three times a week) practising of the method will render the improvement permanent. The method is only an adjuvant, which is a fact to be carefully borne in mind, and the necessary general treatment should never be lost sight of.

I was led to the attachment of the bulb or inhaler containing the tincture of iodine, to the simple apparatus of Politzer, from the need felt of introducing some substance into the cavity of the tympanum

which should promote absorption in the mucous membrane of the tube and middle ear. This want is supplied by the introduction of the iodized air, and my experience serves to show that the combination produces a more powerful and permanent effect than is produced by the use of simple air.—*Am. Jour. Med. Sciences*, July, 1866.

Art. II.—*Ligation of the Axillary Artery in the First Portion of its course.* By John H. Brinton, M. D., of Philadelphia.

THE ligation of the axillary artery in its continuity has been frequently performed during the late war, for the arrest of hæmorrhage following gun-shot wounds, and after amputation. In most of the instances reported the ligation of the vessel has been effected low down in the axilla, below the point at which it is crossed by the pectoralis minor muscle. The artery is here superficially placed, and can usually be exposed and tied with comparative ease and certainty.

But cases have occasionally occurred, one or two of which the writer has witnessed, in which the ligature of the axillary in the lower portion of its course has proved to be a matter of impossibility, owing to a lacerated or sloughing condition of the part, or to the excessive extravasation of blood. Under such circumstances, a departure from Mr. Guthrie's excellent rule of ligating a wounded artery at its point of injury has been warranted, and the operation of tying the subclavian or the axillary artery in its continuity in the first portion of its course, has been resorted to. Most generally military surgeons have preferred to attack the subclavian rather than the axillary above the pectoralis minor. This indisposition to attempt the ligature of the latter vessel at the point indicated is probably based on its deep-seated position, its complicated relations, and the liability of failure to reach and successfully isolate it; a failure which may occur at the hands of experienced operators. That the uncertainty of this operation is not overestimated will be evident when it is remembered that even so skilled a master in surgery as Dupuytren himself, occupied forty minutes in his search for the vessel, and only succeeded in finding it after the application of twelve or thirteen ligatures on the smaller arteries.

Before alluding to the methods usually employed to find the axillary artery in the first position of its course, it will be well to glance for a moment at its anatomical relations. It will be remembered that this vessel, the continuation of the subclavian, extends from the lower margin of the first rib to the lower border of the axilla, as indicated by the inferior margins of the pectoralis major and latissimus dorsi muscles. Its course from its commencement to its termination in the brachial is slightly curved, and the point at which it passes from beneath the clavicle when the latter is in the horizontal position is about the middle of the middle third of the bone. In its progress through the axilla the artery is crossed by the pectoralis minor muscle, which divides it into three portions; the first *above* the

muscle, the second *behind*, and the third *below* it. In the first portion of its course the artery rests in a triangle, the subclavicular, which is bounded above by the clavicle, below and externally by the upper border of the pectoralis minor, and below and internally by the upper border of the sternal portion of the pectoralis major. Externally and posteriorly to the artery rest the branches of the axillary plexus of nerves, and internally and nearer to the sternum the great axillary vein, which when distended with blood during expiration somewhat covers the artery. The cephalic vein, emerging from the intermuscular space between the deltoid and the clavicular portion of the pectoralis major muscle, crosses the apex of the subclavicular triangle and empties into the axillary vein in front of the artery. The tissues which cover the axillary artery in the first portion of its course are the skin and superficial fascia, with some fibres of the platysma-myoid muscle, the pectoralis major muscle, more especially its clavicular portion arising from the inner third of the clavicle, the costo or coraco-clavicular membrane which stretches from the upper border of the pectoralis minor to the subclavius muscle, and loose cellular tissue.

The methods laid down in the books and usually employed for the ligation of the axillary are the following:

First, That which is known as the *ordinary* process, which consists of a straight incision parallel to and about one-half of an inch below the clavicle. This incision is continued down, the pectoralis major muscle being divided in its track until the artery is reached. The objections to this process are the limited room afforded to the search of the operator, and the obscurity which results from the hæmorrhage from the vessels divided in the incision through the muscle and which are not readily tied.

Second, Hodgson's operation, consisting of a semilunar incision, convex downwards below the clavicle, involving about the same extent of surface as the ordinary process. This method answers well enough on the cadaver, but on the living subject it would probably not sufficiently uncover the vessel to permit of its ligation with certainty. It would, moreover, be attended with considerable destruction of the muscle, and with hæmorrhage from the smaller vessels.

Third, Lisfranc's operation. This surgeon advised a single incision directly over the interstice between the two portions of the pectoralis major muscle, the incision to be continued down through this interstice until the artery be found. As this procedure affords but scanty room for the operator's manipulation even on the cadaver, it would be scarcely advisable to attempt it upon the living patient.

Fourth, Chamberlayne's operation. This consists of a double incision, one horizontal and parallel to the clavicle, and the other passing from the outer angle of the first, along the muscular interspace existing between the deltoid and pectoralis major. By raising the flap thus exposed, the axillary artery can be reached below the pectoralis minor muscle.

Fifth, Keate's operation, in which an incision is made directly over the vessel obliquely outwards and downwards from the middle third of the clavicle. This process would appear to be open to the same objections as Lisfranc's operation, although to a less degree.

All of the procedures above alluded to for the ligation of the axillary artery in the first portion of its course, appeared to the writer

to be from some cause or other, objectionable and scarcely applicable upon the living subject. He therefore determined, early in the late war, that should he meet with a proper case for the ligation of the first portion of the axillary artery, he would avail himself of the method devised and published by Professor Pancoast, of Philadelphia.* From frequent practice upon the cadaver he felt assured that the operation of Pancoast could be readily performed with almost an absolute certainty of finding the vessel at the desired point without injury to the great nerves and veins, and without undue laceration of the soft parts. An opportunity for the performance of this operation presented itself to him in the summer of 1863, and as he has recently been informed by Dr. Pancoast that this was the first application upon the living subject of his process, the outlines of the case are herewith submitted.

M. H., a soldier, about thirty years of age, was wounded in the middle of the left arm, by a cylindro-conoidal bullet, during the first day's fight at the battle of Gettysburg. The arm was amputated on the field, just below the insertion of the pectoralis major. Two or three days subsequent to this operation the patient was admitted into one of the temporary hospitals established in the town of Gettysburg. Shortly after his admission the flaps sloughed to a considerable extent, and slight secondary hæmorrhage occurred, which was arrested by pressure on the axilla. About the eighth day after the amputation the secondary hæmorrhage recurred. An attempt was made by the medical officer in charge to ligate the axillary artery low down in the axilla, but owing to the disintegrated condition of the soft parts, and the local extravasation of blood, the effort was unsuccessful. The bleeding was then partially checked by renewed pressure in the axilla.

At this time I was first called in to see the patient. Much blood had already been lost; the condition of the soft parts on the inside of the arm, and in the lower part of the axilla was extremely bad. I did not consider it advisable to attempt further operative interference on the parts already implicated. As no time was to be lost, I decided to ligate the axillary artery in the first portion of its course, according to the method proposed by Dr. Pancoast. The patient was accordingly laid upon his back, and the stump of the arm was carried outward by an assistant. An imaginary line was then drawn from the sterno-clavicular articulation to the lower border of the insertion of the pectoralis major muscle, so as to determine the position of the interspace between the clavicular and sternal portions of this muscle. Along this line an incision about four and a half inches long was made through the integuments, commencing about one inch external to the sterno-clavicular articulation. The interspace between the sternal and clavicular portions of the muscle, which was readily distinguished, was next opened with the handle of the knife, and the fascia on the posterior surface of the muscle was divided on a director. The fibres of the muscle were then relaxed by bringing the stump toward the body. An assistant was then directed to insert the forefinger of each hand beneath the clavicular portion of the muscle, pushing his fingers up as far as the clavicle. He was thus enabled to grasp and compress between his fingers and thumbs the

* "Treatise on Operative Surgery," Philadelphia, 1846, p. 58, etc.

muscle and integuments, which were then divided up to the centre of the clavicle by an incision perpendicular to the course of the muscular fibres. The space resulting from the incision and the consequent retraction of the divided ends of the muscle, was amply sufficient to allow the search for the vessel being conducted with certainty and rapidity. The hæmorrhage, which was inconsiderable, was arrested by a single ligature before the divided muscle was released from the assistant's grasp. The strong fascia which stretches from the pectoralis minor to the subclavius was next raised with the forceps and carefully torn across, and the cellular tissue beneath gently broken up above the origin of the acromio-thoracic trunk. The axillary artery, which was feebly pulsating, was then readily isolated, and a ligature was thrown around it with the effect of instantly arresting the hæmorrhage from the stump. The cephalic vein was not exposed during the steps of the operation, although by close examination its location could be discovered; but neither it nor the axillary vein, which latter slightly overlapped the artery, were loosened from their cellular connections.

It should be here observed that in this operation the position assumed by the surgeon is important. He should stand, as was done in this case, above the patient's shoulder, and operate from above downwards. If he should stand below the shoulder he would instinctively, as it were, work towards himself, and most probably endanger the cephalic vein, if indeed he should not fall below the axillary vein. The writer has so often observed these results in operations upon the cadaver, in which the manipulator has stood in the objectionable situation, that he is led to regard the position which the operator should hold to his patient as a matter not to be overlooked.

The operation above described occupied certainly not more than three minutes in its performance, and was attended with no difficulty whatever. The exposure of the deep-seated parts by the second incision was complete, and the vessel was readily arrived at, and easily isolated without prolonged search or injurious handling of the parts. Nor were the large veins and nerves subjected to the contact of instruments or of the fingers.

It is to be regretted that the writer cannot add to the foregoing account a statement of a successful issue to this case. Unfortunately the result was otherwise. The patient did well for ten or twelve days, but eventually died of hæmorrhage from the axillary artery at the point of ligature, occurring at the time of the separation of the thread.

The untoward result in this case does not, however, militate against the feasibility of the operation, which would appear to offer incontestable advantage over all of the ordinary processes for the ligation of the axillary artery in its upper portion; and which must unquestionably be attended with less risk to life than the operation for the ligature of the subclavian.—*Am. Jour. Med. Sciences*, July, 1866.

Art. III. — *Alcoholic Stimulants with Chloroform.* By G. M. B. Maughs, M. D., St. Louis, Mo.

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WHAT would be thought of the physician who, in a case of typhoid pneumonia, when the vital forces were much depressed, should give brandy in order to get his patient to an artificial state of excitement when he could use tartar emetic; and yet such practice is quite as rational as that of preceding chloroform by "an active stimulant." Indeed, more so, because the alcohol counteracts the chloroform, causing, in some cases, a fatal amount to be given in order to produce a given amount of anæsthesia.

If, however, the object be not to produce a certain effect but to enable the patient to take a given amount of the chloroform, then indeed is the practice a most rational one, as the alcohol certainly, by virtue of its stimulating effect, counteracting the sedative influence of the chloroform, will enable the patient to bear (indeed require) a greater amount of the latter before anæsthesia is produced.

Chloroform is a powerful sedative, and possesses, in common with all other remedies of this class, the power of blunting the sensibility. Long continued *cold* will do the same thing; and before the introduction of chloroform ice was frequently used to produce topical anæsthesia.

In most cases requiring operations, chloroform is most clearly indicated, and alcohol quite as clearly *contra*indicated. To show the therapeutical incompatibility of the two agents — the indications of the one and the *contra*indications of the other — it is only necessary to observe that, firstly, chloroform, by depressing the action of the heart and arteries, lessens the tendency to hæmorrhage. "An active stimulant, by increasing the tone of the vascular system, increases the hæmorrhagic tendency." Secondly, chloroform blunts, obtunds the sensibility; an active stimulant exalts it. Thirdly, chloroform produces artificial sleep, unconsciousness; an active stimulant exalts consciousness, prevents sleep; and as the object in giving chloroform for obvious reasons is to produce the desired effect, anæsthesia, with the least possible saturation of the system, we should no more think of saturating the patient with alcohol, previous to its administration, than we would first feed a man upon train oil and tallow candles if we wished to freeze him to death, or than we would use laudanum in an enema when it was desirable to move the bowels immediately.

Chloroform acts as a sedative primarily upon the brain and upon the heart, sometimes causing death unexpectedly by its direct action upon this latter organ — death by syncope. Again, by depriving the lungs of oxygen, it may produce death by asphyxia.

If, then, we exalt the action of the heart by the administration of alcohol, we cause a greater amount of chloroform to be necessary in order to produce a given sedation; and as the absorption of the chloroform continues after the removal of the sponge we thereby greatly increase the danger of an over dose, and consequently the liability to death either by asphyxia or syncope, or by the formation of carbonic oxide, a most deleterious compound.

All are aware how difficult it is to anæsthetise with chloroform an old toper or one saturated with alcohol. Try it on a drunken man, and after the loss of much time and the administration of an unusual

quantity of the anæsthetic he becomes delirious, raves, gesticulates violently, vomits, and if by dint of perseverance you succeed in anæsthetising him, the probabilities are that he will be taken from the table a dead or dying man.

Seeing, therefore, the constant and necessary incompatibility of these two therapeutical agents, that the one counteracts the other, and as you wish to depress, to anæsthetise your patient, and then have him reäct and recover from this condition, would it not be more rational to give the chloroform first, and afterwards give the active stimulant? With these views it is apparent that cases in which there is great prostration from previous hæmorrhage, are not the only ones in which the use of "an active stimulant" before the chloroform would be unscientific practice, and I much fear many of our wounded men suffer from the non-observance of these, to me, common-sense views. A soldier is shot down on the field; pain is one of the consequences, hæmorrhage is another, and by far the most important. Shock is doubtless in the great majority of instances the result of pain, physical or mental, or both, and although not intended as a direct hemostatic, it acts as such, and by lessening the action of the heart and arteries, checks the waste of the vital fluid, and by thus diminishing the *vis-a-tergo*, closes the avenues through which life escapes in the vast majority of instances upon the battle-field. "An active stimulant," freely administered, may lessen the pain and prevent or relieve the shock, but at the same time it increases the tendency or liability to hæmorrhage; and, if the wounded vessel be not in a position where we can control the hæmorrhage by pressure or ligature, we may induce its continuance to a fatal extent, and by a too hasty or unwise interference, having taken the case out of nature's ready method, depression or shock, death triumphs through the interference of the surgeon. But accidents of this nature constitute not the only, nor indeed chief, objection to indiscriminate use of "active stimulants" upon the battle-field. The patient has received a wound for which, it may be, an operation is necessary, a large dose of morphine and brandy is administered, and he is sent to the rear. On arriving at the field-hospital another dose of morphine and brandy is administered, whereby the system is placed in antagonism to the anæsthetic effects of chloroform. An inordinate quantity is given before anæsthesia is produced, and though death may not be the immediate result, it is found that he reäcts slowly, imperfectly, and, after much ineffectual effort and loss of time, he is removed from the table half delirious, half stupid, next day he is in collapse, and within forty-eight or sixty hours death closes the scene. He was a stout, brave man, and the surgeons wonder that he should have borne an operation so badly. But is he the victim of an operation or the accident of battle? Well, sometimes this may be the case, but in many instances the patient has withstood all these to fall a victim to an overdose of chloroform, made necessary by the previous administration of an active stimulus.

If we are correct in considering chloroform *a sedative in all cases* and *doses, a sedative primarily and secondarily, never acting as a stimulant either to the cerebral centers or the heart in doses large or small*, it is manifest it is *contra*indicate in all "cases of great prostration produced by previous hæmorrhage" or other causes where, or in which, "active stimulants" are indicated, or indeed admissible.

It is true, for reasons already given, that an "active stimulant" will enable the patient to take a given amount of chloroform without the same amount of immediate prostration that would otherwise ensue, and would it not do the same for blood-letting? And yet who would give a patient "greatly prostrated from previous hæmorrhage" "an active stimulant" in order that he might bear the unnecessary abstraction of blood from the arm? This latter practice, however, might be justifiable, indeed, highly laudable, if the loss of blood was unavoidable; that is, when the patient was in danger of syncope from a hæmorrhage which we could not immediately arrest. But would it do to give chloroform in like circumstances with the expectation of its enabling him to sustain such loss? Why, then, give it under these circumstances and in such strange combination? Does the operation — the loss of a limb — increase the vitality, the power of reäction? Let us then avoid a practice so contradictory, and in the use of therapeutical agents so administer them as not to neutralize their effects. If our patient requires an acid, let it not be given with an alkali lest we subject ourselves to the charge of charlatanism. Our profession is not one of arbitrary guessing, but of science, apodictic in its principles and its rules of practice, either the result of rational experience or founded upon the clearest principles of inductive and deductive philosophy.

The following case, I think, exemplifies the rational treatment of "cases of great prostration from previous hæmorrhage," and in the management of which it is found necessary to use both alcohol and chloroform — both stimulants and sedatives. At the battle of Resacca a soldier had his leg carried away by a round shot. There was much pain with loss of blood, followed by "great prostration" shock. A tourniquet was judiciously applied, a glass of brandy with one-half a grain of morphine administered, and under the care of a careful attendant he was sent to the rear. On arriving at the hospital it was decided he could not bear an operation. A cup of strong coffee was given and the patient placed in a comfortable position. After an hour he was given brandy with rich soup, and was assured by kind and encouraging words. After a few hours more the patient had so far reäcted as to encourage the belief that an operation might be borne. Another cup of strong coffee was given, and after the lapse of a short time — ten hours after the receipt of the injury — he was placed on the table, the artery compressed by an intelligent assistant, the limb elevated for a short time so as to facilitate the return of blood to the body. A small quantity of chloroform was administered, just enough to blunt sensibility — consciousness remaining — the flap operation was performed with great dispatch, occupying only a few seconds and with the loss of but a few drops of blood, altogether not a spoonful, arteries secured, flaps adjusted, stump dressed, hot brandy toddy given and the patient removed to his bed, all within five minutes from the time he was placed upon the table, and without any perceptible alteration in his pulse. The immediate after-treatment was stimulant and supporting, and the patient improved as rapidly as in the most promising cases.

Now, suppose this patient, who was "greatly exhausted by previous hæmorrhage," had been given freely an "active stimulant," and while the little artificial strength, the precarious reäction pro-

duced by it, was present, and consequently while the resistance to the anæsthesia was *plus*, the whole amount of the alcohol administered, chloroform had been administered to full anæsthesia, does any one doubt that he would have swelled the list of killed and mortally wounded? Chloroform would not have gotten the credit of killing him. Of course not, and yet, if my views are correct, it is manifest it would have done so, and that too by virtue of the very irrational treatment recommended by McLeod and others.

But it may be objected to the argument that this patient took brandy *before* the chloroform was administered. Of course he did, and most properly. He also took soup and *ten hours' time*, but it will be observed that the two agents, alcohol and chloroform had to one another no other relation than their order in time, and they were given for very different conditions and to meet opposite indications. The brandy was not given because it was intended to give chloroform, but it was given because a condition was present in which chloroform was positively *contra*indicated in any quantity, and after the active stimulant, coffee and soup, had so far recovered him from the great prostration, after his system had reacted, and this reaction was sufficiently established to bear an operation, the chloroform was cautiously given to blunt his sensibility with a full *knowledge that it added to the sedative effect of the operation*, and its very slight effect counteracted by the almost immediate administration of hot toddy.—*St. Louis Med. Rep.*, June, 1866.

ART. IV.—*On the Communicability of Syphilis by Vaccination.* By WM. M. FUQUA, M. D., Appomattox Co., Va.

ON assuming charge of the seventh Florida regiment, late C. S. A., as medical officer, I found fifty-two men who had been recently vaccinated, suffering from severe ulcers on their arms, at the site of vaccination. Some of these ulcers had scabbed, and to all appearances seemed to promise a speedy "return to duty." There were others, varying in size from that of a quarter of a dollar to that of a Mexican dollar. Their edges were hard, shining, and everted; in some few cases they were undermined. An ashy colored slough covered their base, which was from time to time cast off. This, however, was not always a genuine slough, but a tenacious grey and partially organized exudation. These ulcers were offensive, and discharged pus freely. The redness, circumscribing them, was limited, the limb but little swollen, and the pain of a burning, stinging character. In many instances, the lymphatic vessels were much inflamed, and the axillary glands, in each case, were more or less affected. Many of these patients complained of pains in their limbs; there was some febrile excitement, and their appetites had been much impaired. Having thus briefly described these ulcers, it may not be improper to remark upon the hygienic condition of the regiment.

At this time it was doing duty at Knoxville, in the department of East Tennessee, and was quartered a mile from town, upon soil

which had been previously occupied by troops who had left the encampment in no praiseworthy condition. To the South, South-West and West, passed the Holston river. The general health of the command was bad—the sick list comprising one-seventh of the command. The prevailing diseases were the malarial fevers and acute diarrhœa.

The first part of the treatment of these cases consisted in their removal to a more cleanly and healthful locality; cleanliness of person and clothing was enjoined also. General directions were given as regards diet, and of maintaining their bowels in proper condition. The second part of the treatment was the local application of astringents in the milder cases, and escharotics, varying from the mildest kind to that of the most potential, in conjunction with the astringent lotions, in the severe ones. Under this regimen some few improved; none, however, recovered; by far the greater number grew worse. Abscesses now began to form in the axillary glands; pains in the limbs and joints increased in severity; there was a sensation of dryness in the throats of many, which was speedily followed by ulceration. Our apprehensions were now fully awakened; each day we inquired more and more diligently for some new symptom which might be diagnostic. Coppery colored spots now appeared upon two: the hair began to fall off in a third, and it was not a week before a syphilitic bubo, in its incipient stage, appeared in another. Heretofore, these cases had been denominated "spurious vaccination." Spurious they were, in one sense; but specific in another, in the strictest acceptation of the term.

It is hardly requisite for me to state that these cases were placed upon syphilitic treatment, and we had the satisfaction, in comparatively short time, of seeing the greater number of them returned to duty. A few were sent to the general hospital, one of whom died.

In conclusion, let me remark, that having mentioned to Dr. Frank Ramsey, then medical director of the department, the nature of these cases, he requested me to make a report in detail concerning them, which was done, and in all probability found its way to the late Surgeon General's office.

Upon inquiry, it was definitely ascertained that the virus for inoculating these patients was obtained from a sailor, on the coast of Florida, who labored under primary syphilis at the time of vaccination.—*Richmond Medical Journal*, June, 1866.

ART. V.—*Trephining the Spine.*

ANOTHER case has recently (Nov. 28th, 1855,) been reported to the Royal Medical and Chirurgical Society, by Dr. Samuel Gordon. This case is that of a man thirty-one years of age, who met with an injury of the spine on the 27th of March, 1865. He was thrown from a horse into a ditch while hunting, and was immediately affected with paralysis of the lower limbs, rectum, and bladder. When admitted into the Whitworth Hospital, under Dr. Gor-

don's care, these symptoms still continued, a bed-sore had formed, and there was incontinence of urine, which fluid was alkaline, and contained copious muco-purulent deposit. One of the vertebræ in the lower part of the spine was displaced. The extent to which the spinous process projected was shown in a cast exhibited. Dr. Gordon performed the operation of trephining at the patient's urgent request on June 3d. The operation lasted fifty minutes, and was not accompanied by much hæmorrhage. Soon after the operation signs of improvement were noticed. On the fourth day after it the urine became acid, but this condition did not continue; sensation improved, and some days later there was observed an increase of motor power. After some time the urine, which was sometimes alkaline, sometimes neutral, became permanently acid, power over the bladder was restored, and the patient was conscious of the passage of fæces. Within eight weeks he was able to go out, reclining in a basket carriage. He has now regained control over the bladder, and he can sit erect with ease and comfort; but he cannot stand, or of course attempt to walk. His general health is excellent.

In making observations on this case, Dr. McDonnell draws attention to the following points:

1st. There is nothing in the operation of a necessarily fatal kind: neither is it of necessity followed by exfoliation of bone, formation of matter, etc., which makes convalescence very tedious, if not impossible.

2d. He thinks that even those who do not advocate the operation in question, must admit that in this case the operation was the cause of improvement.

3d. Judging from our present experience, he recommends that in future cases the operation should be performed early, before structural change has taken place in the cord, and the muscles have fallen into a state of atrophy, from which it is difficult for them to recover.

4th. He advocates removing the posterior arches of more than one vertebræ as a proceeding which adds little to the difficulty or severity of the operation, and nothing to its danger, and which gives the patient a better chance of ultimately being able to stand and walk.

Mr. Spencer Wells stated that in the course of his service in the navy, and in the Eastern hospitals during the Crimean war, many such accidents had fallen under his (Mr. Wells's) notice, and he did not remember a single instance of recovery. Some lived several months in great misery, but he did not remember one patient who lived a year; and such cases as those alluded to by Mr. Barwell and Mr. Shaw must be quite exceptional. The only instance of recovery he had met with was in a gentleman who met with a fall when hunting. Inflammation and caries of the intervertebral substances and bodies of three of the dorsal vertebræ followed, and paralysis, which lasted two years. But recovery was so complete that the gentleman lived for twelve years afterwards, married and had a child, rode, danced, and shot, and only died last year of Bright's disease. The spine (which was exhibited at the meeting) showed that the whole of the body of one vertebræ and half of two others had been destroyed, and that these two were firmly anchylosed. Whilst this case proved the possibility of recovery, it was rather to be taken as an encouragement to Dr. Gordon and Dr. McDonnell that the man

whose case was before the Society would completely recover power over his legs, than as supporting the views of Mr. Shaw and Mr. Barwell in favor of non-intervention. It was very hard upon a surgeon, who might be blamed if an operation was not successful, to discourage him when it was successful by saying the patient would have done just as well if he had been left alone.

Dr. R. McDonnell observed that he was greatly gratified, not only at having been able to be present, but at the discussion which this case had elicited. He expressed some surprise that those who were opposed to operation in such cases had not laid more stress on the mechanical objections urged against it by Sir Benjamin Brodie in his well-known paper, viz., that as the body of the vertebra was, in the vast majority of cases, the seat of fracture, and as this part was out of reach, no good could be gained by operative interference. It was quite certain that in such cases it was only that part of the vertebra against which the cord is pushed back that could be removed; it was only, in fact, possible to take away the counter-pressure. But this mechanical objection took no account of the cases which, although forming a very small proportion of the whole, yet sometimes occurred, in which the body is not broken, the posterior arch being the part fractured. Boyer had recorded such a case. While the operation of trephining the spine, as it is called, is set aside in practice, as it virtually has been, such cases must be lost which might otherwise possibly be saved. He did not conceive that any advocate for the operation would think of performing it in any case where the symptoms of compression of the cord did not exist. It would be less justifiable in such a case than it would be to trephine the skull when there existed no signs of compression of the brain. In reference to the case alluded to by Mr. Barwell, he could only say that the experience of those who had the largest opportunities of seeing such cases, as well as the shelves of the museums of Europe, showed how rare such cases were. In his own limited experience, he had never been fortunate enough to see a case presenting such features as Dr. Gordon's case did just before the operation which had not run a fatal course. Dr. McDonnell did not think it probable that at a period of two months after fracture of the spine any considerable attempt at consolidation had taken place in most instances. It generally happened that the intervertebral substance was more or less lacerated, and the first thing nature does before setting about the work of consolidation, is to absorb the lacerated intervertebral substance. This is always accomplished slowly; and even when patients lived five or six months after the injury, consolidation was sometimes found to have made but little progress. Dr. McDonnell hoped, and, indeed, from the character of the discussion on the case just detailed he hardly doubted, that some of the surgeons connected with the hospitals of this great metropolis, profiting by the experience of his own and of Dr. Gordon's case, would undertake to perform the operation in question, and he earnestly hoped that, improving upon what had been already done in this field, they might obtain successful results.—*Am. Jour. Med. Sciences*, April, 1866.

ART. VI.—*On Lithotrity.* By WILLIAM FERGUSSON, Esq., F. R. S.

LITHOTRITY has lately appeared likely to supersede almost completely the more formidable operation of lithotomy. The life or death of the patient often depends upon the decision whether cutting or crushing shall be selected.

What are the circumstances which lead us to our determination? There are few questions in surgery more important, and I fancy that I cannot in this lecture address you on a more interesting subject.

Age seems to me to form a most important element, particularly in the male. It may reasonably be doubted if better can be done before fifteen than cutting for stone. The success of lithotomy in young subjects is probably greater than could be secured by lithotrity in similar cases. Taking my own experience, announced last year, of only two deaths in fifty operations, I have no hesitation in stating my conviction that I could not have had equal success with lithotrity in these cases. In some the process would have been well-nigh impossible, such as with stones of this bulk, for here the diameter of the urethra would have precluded the use of a lithotrite of sufficient power. Looking to the size of the urethra in the male before puberty, its length, its irritability; the comparative irritability of the bladder and of the subject generally; and I may add, the conical shape of the bladder, whereby there would be a greater tendency to blockage and retention than in the adult, I feel justified in stating that where the operation might require repetition, it would certainly, although ever so successful, be attended with an amount of distress to the patient, and probably trouble to the surgeon, far greater than any supposed advantage. I confess, however, that I do not think this question has been investigated. Until within these few years there were no instruments that could have been used in such cases. To the best of my knowledge there were none such as I displayed in this theatre last year; but if blades like these [showing a variety] could be brought against small stones such as are usually found in young persons, so as to effectually crush them to sand, I believe that this operation might after all be found more generally applicable in children than it is usually deemed. As an adjunct to this kind of practice, chloroform would be indispensably necessary; without it the needful quietude could not be secured.

In the female, whether under or over puberty, I consider that any other operation than lithotrity should be an exception to the rule. With various-sized instruments sufficient strength of blades can be calculated on; and chloroform will permit the ready use of both crushers and scoops; so that, in accordance with views which I laid before you last year, the operation might be completed in all ordinary cases on one or two occasions.

But stone is found in the adult twice as frequently as in the young person, and, for manifest reasons, its treatment in such patients must be held as of more than double importance. It is of greater interest to consider what is best for this larger class of cases, particularly as the rate of fatality in lithotomy rapidly increases after puberty, and it is chiefly in these instances that the question between lithotrity and lithotomy arises.

There are, I suppose, surgeons in this country who still look upon

lithotomy as the rule, and lithotrity as the exception. Yet I believe there is a generally felt impression that the reverse should now be held as the rule; and such is my own conviction. When stone requires mechanical treatment, lithotrity should be the first proposal, and if it cannot be, then lithotomy must be thought of. If such be the predicament, let us see by what process of reasoning the surgeon may have come to such a conclusion. He will have examined his patient, and found the urethra narrow and irritable; the neck of the bladder and mucous membrane particularly sensitive; the prostrate somewhat large, and so firm in substance that it has been difficult to pass a shap-curved instrument; the bladder disposed to throw off its flued contents; the stone large, perhaps more than one; and possibly withal an irritable temperament, a want of moral and physical courage, with a disposition to oppose, rather than facilitate, all manipulations. These conditions, where present, hold out most unfavorable prospects for the satisfactory or successful issue of lithotrity, and it is to me very doubtful if the operation should be resorted to in such cases. Yet it would be unwise to reject lithotrity in all at a first or second examination. It is remarkable how in some these conditions become modified. The patient may pluck up better spirit, the parts by usage may become less sensitive, the operator by custom may manage to get through the prostrate more readily, and the fragments may possibly be more easily dealt with than the entire stone. All this may happen, yet it must be admitted that the conditions referred to induce at first sight serious objections to lithotrity.

It is a good custom, in many instances, to make repeated eximinations before a final decision; for whilst the opposing indications may in some be favorably modified, it will occasionally happen that where at first glance all may have appeared highly propitious to lithotrity, a condition may arise which will at once put an end to all idea of resorting to it. I have seen illlustrations frequently of both these changes, and have sometimes been much struck with the effects of what may be called preliminary manipulative treatment. It frequently seems desirable to dilate the urethra with bougies before crushing, and their use is often advisable to relieve irritability—a result of which we have daily cognisance in treating strictures; but as in such cases we every now and then see considerable fever excited, and a train of symptoms particularly alarming to those who have little experience, so in using bougies preliminary to lithotrity, some troublesome spmptoms may arise which may induce the surgeon to be unwilling to adopt that procedure. After the bougie the patient may in a few hours experience a chill; shivering, sickness, and vomiting may all ensue to a considerable extent; the surface of the body may become remarkbly pale and cold, the pulse will be very feeble, the eye will appear sunken, the voice will be as in a whisper, and it will seem as if rapid sinking had set in. After a few hours the rigors will cease, and so will the sickness; the pulse will improve and so will respiration. A reäction will take place, almost as alarming to the inexperienced as the previous condition. There will be rapid breathing, a bounding pulse, a flushed surface, particularly of the face, and a racking headache. Profuse perspiration will then set in, and most of the alarming symptoms will disappear. The kidneys and bladder will sympathize. At first there will be scanty and high-

colored urine, and when it becomes more profuse, as it does in the latter stages, it will deposit a thick sediment, and possibly a copious quantity of tenacious mucus, in some instances joined with pus. In eight-and-forty hours the patient may be as well as ever, but in some there will remain a great disposition to a recurrence of most or all of the evils. Such symptoms as these are by no means uncommon after lithotrity, and they cause much distress to the patient and anxiety to all. Every one experienced in stricture cases must be more or less familiar with them. When, a few years ago, perineal section was more in fashion than at present, such symptoms were as unusual, and to the uninitiated caused great alarm; yet, though formidable in aspect, they are not always so in reality. Once passed off, they seldom recurred, chiefly, perhaps, owing to the cause which had induced them not being repeated. Now, if such evils are brought on by the simple use of a bougie, what might not happen after a single sitting of lithotrity?—what after frequent repetitions? A man could scarcely feel justified in subjecting his patient to lithotrity after such experience as this. I have repeatedly declined it, and have afterwards seen the best results from lithotomy. If a stone be small, and it be possible to make away with it at a single operation, I should not mind advising lithotrity on a very brief acquaintance; but if the operation is likely to require two or more sittings, then I should think it wise of the surgeon to test, as it were, his patient's constitution by a repeated preliminary use of bougie or sound.

As yet I have referred only to the cases likely to be rejected for lithotrity. Let me now speak of those which seem peculiarly favorable for the process. If the urethra be wide and free from marked irritability; the neck of the bladder and mucous membrane of that viscus be not particularly sensitive; if the prostate be of normal or moderate size, and so soft that a sharp-curved sound, or lithotrite, can be readily passed, the case will appear in most respects favorable. If, added to these, the stone be small, then all the essentials to successful lithotrity may be deemed present, and it is not likely that the bladder will be subject to spasm, nor will the patient evince much irritability of mind or body. Even though the stone should be of considerable magnitude, or should two or more be present, there need be no hesitation in selecting lithotrity. It may be that evil will come after all, but under such circumstances the surgeon may feel satisfied that he has done the best for his patient that human judgment could dictate. Should he in the interval have had, or seen, one or more successful cases of lithotomy, he need not repine and wish that that operation had been selected instead, for had it been, the results might have proved equally disastrous.

When lithotrity is seen in perfection, it certainly is a vast triumph of surgery. A concretion, too large to escape by the natural passage from the bladder, and which, when allowed to remain, almost certainly increases in size, and thereby adds to the daily and hourly sufferings, is broken into fragments so small that they pass away with the ordinary stream of urine; and thus the bladder is left free and in a normal condition. The patient need not be in bed an hour beyond the customary period of rest, and may move about, attending to his ordinary duties as usual. He may walk to the surgeon's house and from it, as if paying a friendly visit, and in a few days or

weeks have his mortal foe within his manual grasp, shattered to fragments, and impotent for further evil!

Certain dogmas have prevailed regarding lithotrity which had been hurriedly fixed, but which have now been dispelled by experience. Thus it was said that the operation was scarcely practicable or proper, unless eight or twelve ounces of fluid could be retained; indeed, the more the better! This was under the impression that the stone could be more readily seized, and that the distended mucous membrane would be less likely to be nipped between the blades, or between these and the stone. If sufficient urine were not already in the bladder, the first step of the operation was to inject tepid water. Now I think it may be set down as a rule, that a capacious bladder and large quantity of water are objectionable. They certainly do not preclude the operation, but they assuredly make it more difficult and uncertain. A stone or fragment moves so freely in a large quantity of water, the slightest touch causing it to change its position, that it readily eludes the blades; and again, where such a bladder as is here implied is nearly empty, the mucus membrane may possibly be in folds, between which fragments are liable to escape the closest search. To say the truth, however, I have little faith in the presence of so-called folds of the mucous membrane of the bladder. For twenty years or more I have rarely used injections as a preliminary step, and I have often drawn off urine with a catheter when, in accordance with these views, I have fancied the quantity too large. A small proportion of fluid is decidedly better than a large, but care should be taken that the blades of the lithotrite can be used with facility, and without the chance of contusing and abrading the mucous surface.

Paralysis of the bladder, such as requires the daily use of the catheter, has been generally considered a positive bar to lithotrity. But, with the small scoops which I have recommended, the condition is positively favorable to that process; for there is generally in such cases an apathetic state of the mucous membrane, which permits a free use of instruments required for the removal of fragments.

Some years ago we were, on nearly the highest authority, positively prohibited from turning the point of a lithotrite downwards, behind the prostate gland. If this organ be somewhat enlarged, particularly in its middle lobe, there is always a kind of pouch behind; and even when of its normal size, the bladder in old persons is capacious at this part. Doubtless, as a patient stands, the stone usually lies in this place. Even in the horizontal position it keeps there, unless the pelvis be raised. In early days it was the custom to lower the shoulders and elevate the pelvis, for the sake of getting the stone towards the upper part of the viscus, where it was thought it could be more readily and more safely caught. Occasionally even yet this position seems desirable; but the fallacy of not searching behind the prostate has been long since exploded. The best of modern sounds, that with the short curve recommended by Heurteloup, was constructed with the view of being turned point downwards into this pouch; and to catch a small stone or fragment with a lithotrite or scoop, there is no more certain manœuvre.

The attitude of a patient, the question if he was to lie on a bed, a sofa, or on a table made expressly for the purpose, were all thought

matters of very great importance. Every now and then some little variety of attitude, from the horizontal to the erect, is desirable; but generally, in private practice, a hard-stuffed bed or sofa is all-sufficient. A pillow under the pelvis is sometimes an advantage; more however to keep the handle of the instrument above the mattress, than with the intention of influencing the position of the stone. In hospital practice, the ordinary operating table answers all requisites, and that constructed for the special purpose of lithotrity may now-a-days be considered as a remnant of a certain amount of claptrap which was associated with the early history of the operation.

The question as to the propriety of giving chloroform in lithotrity seems still a mooted one in certain quarters; but I have none regarding it, and having used it in the greater number of cases I have had ever since anæsthesia was introduced, I can speak of it in unqualified praise. There are many instances in which it is not requisite, but I am certain that without it the operation would be well-nigh impossible in a considerable number.—*Lancet*, June 17, 1865, p. 643. —*Braithwaite*, Jan. 1866.

Medical Pathology and Practical Medicine.

ART. VII.—*On Color-Blindness, or Daltonism.* By MONTROSE A. PALLEN, M. D.

UNDER the general term of Daltonism, as bestowed by Prevost, Wartmann and others, upon color-blindness, we propose to consider that abnormity of vision, which has not only excited the curiosity of the physician, but which has also occupied the earnest attention of poet, philosopher and metaphysician. Dalton, Seebeck, Szokalski, Purkinge, Gœthe, Brewster, Cunier, Combe, Dugald Stewart, Herschell, Ruete, Graefe, Hays, and numerous others, have theorized on its nature and its causes, but have been most unsatisfactory in their results.

In 1858* we advanced a theory to explain the phenomena in question, which subsequent thought strengthens. Before entering into that portion relevant to its explanation, it is proposed to consider, as cursorily as possible, its nature and history.

There are two kinds of Daltonism, viz., *Achromatopsy*, or an insensibility of the eye to colors, and *Dyschromatopsia*, an anæsthesia, or partial insensibility to colors. One is generally, if not always, hereditary, and the other is sometimes acquired, and subjectively symptomatic (spurious, and recognized by the ophthalmoscope).

The first is dichromatic, and persons who labor under such conditions, easily distinguish the forms of objects and the gradations of light and shade, who not only are capable of seeing objects at great distances, but read with ease where the normal eye cannot. This

* "Prize Essay" on Vision, and some of its anomalies, as revealed by the Ophthalmoscope.

class of Daltonists are absolutely color-blind, and are dead to all beauties of color, and necessarily ignorant of those branches of knowledge dependent upon colors. The second, which is also hereditary, sometimes acquired and subjectively symptomatic, is polychromatic, and presents a great variety of shades, from simple retinal congestions to such anæsthesia as border upon the dichromatics.

The influence of race seem to have been noticed, and Szokalski states that it is of Germanic origin, being particularly observed among the Germans, English, Swiss, and Belgians—the French, Spaniards and Italians being comparatively free from it—an immunity which we think to be altogether inexplicable, so much so as to occasion great doubt as to the correctness of the statement. In the United States numerous instances have been observed, and no mention is made that the Latin race, or their descendants in this country, are freer from the ills that flesh is heir to, than are their brethren whose ancestry came from the vine-clad hills of the Rhine. Sex undoubtedly has some influence, perhaps a very great one, for, according to Dr. Pliny Earle, in thirty-one cases twenty-seven were males. Wilson, White Cooper, and others, have recognized the same proportions. Cunier,† however, mentions a fact, that Daltonism occurred in five generations of one family, making thirteen cases, all of whom were females. White Cooper states, however, that these cases stand alone. With regard to any physical phenomena presenting themselves in Daltonists, there is great variance among writers; Szokalski, Ruete, Himly and White Cooper, denying such; whilst Rau and Wartmann draw attention to a yellowish or golden tinge of the iris, which possibly and probably is nothing more than a coincidence, as Daltonism has been observed in as many blue, grey and black irides, as in the hazel or golden tinted. The great importance of this subject is readily recognized, when we take into consideration the numerous signals used upon all routes of transportation and travel, and the liability to errors, such as to occasion great loss of life, from a misapprehension of railway and steamship colors. The attention of our legislative assemblies should be called to the fact, that a rigid examination with regard to colors should be instituted in cases of steamboat pilots, railway engineers and guards, particularly when we remember that nearly five per cent. of the human race are more or less color-blind.

Dr. Wilson states, that out of 1,154 persons examined in the city of Edinburgh alone,

1 in 55 confounded red with green.
1 in 60 " brown " "
1 in 46 " blue " "

The proportion, with respect to blue and green, was an accidental discovery; but, according to Dr. Wilson, with regard to red and green, and brown and green, they are but "degrees of the same affection; all in the first category, red with green, must be added to those in the second, brown with green; and many of those in the second might appear in the first; but no one was counted more than once." Numerous other facts can be adduced to sustain this point; but, for the present, we proceed to the consideration of the other bearings of the subject.

†Annales d'Occulistique, tome 1, p. 417.

The *polychromatic Daltonists* (those laboring under dyscromatopsia proper), are subdivided into two classes: A. Those who differ in the degree of their vision, yet agree very nearly in confounding the following colors (according to Seebeck):

1. Sky-blue, grey-blue and grey-lilac.
2. Lilac and bluish-grey.
3. Bluish-green and imperfect violet.
4. Crimson, dark green and hair-brown.
5. Rose-red, green (rather blue than yellow) and grey.
6. Pure light green, grey-brown and flesh color.
7. Intense orange, light yellowish green, or brownish green, and yellow-brown.
8. Light orange and pure yellow.

Daltonists of this class are in reality in a transition state from dichromatism to polychromatism, and have generally a very imperfect idea of all colors; but, particularly, confound red with green, which is dull grey; blue also seems grey to them. Some distinguish yellow tolerably well. B. Those of the second class have only an imperfect perception of the least refrangible rays, and recognize yellow best, distinguish red better, and blue not so well as the others. The principal confusion arises with—

1. Dark violet and dark blue.
2. Crimson and violet.
3. Rose-red, lilac, sky-blue and grey (including lilac).
4. Brick-red, rust-brown and dark olive green.
5. Cinnabar-red, rust-brown and dark brown.
6. Imperfect (somewhat yellowish) rose-red and pure grey.
7. Flesh-red, grey-brown and bluish-green.
8. Dark carmine and blackish blue-green.
9. Light orange, greenish yellow, brownish yellow, and pure yellow.
10. Bright orange, yellow-brown and grass green.

These are the classes which are principally met with, and the question now arises, is there no fact we can grapple to elucidate the cause; and possibly the remedy, for Daltonism? We believe there is; at least, analogy leads us so to do.

In a short paper like this, we cannot enter into the discussion of the various optical laws upon which vision is dependent; but it is well to remember, that but a small portion of the rays of light which are impinged upon the eye, enter its cavity, and not all of those which enter, reach the retina; a certain quantity, of necessity, being lost from the numerous refractions undergone, in passing through the aqueous humor, lens and vitreous body; in fact, it is only the more central rays which pass through the pupil and lens. The structure of the lens necessitates an increase of the convergence of the rays entering and passing out of it; and those which reach the vitreous body do so in a highly concentrated stratification. Upon the formation of the vitreous body, we believe the explanation of the theory of color-blindness depends.

According to many distinguished authorities, the vitreous body is surrounded by an *envelope*, called the hyaloid. Robin, however, de-

nies this, and contends that it is an amorphous, not even fibroid substance, surrounded posteriorly and laterally by the retina, and anteriorly by the capsule of the crystalline lens and ciliary processes. Hannover, however, and many others, contend that the vitreous humor is contained in a segmentary membrane, which can be discovered (according to Hannover, particularly,) "by a careful maceration in chromic acid, to consist of about one hundred and eighty delicate septa, like the pulp of an orange," with the angles of the enclosed spaces in the direction of the axis of the eyeball, which do not meet, but leave a cylindrical portion for the passage of the *arteria centralis retinæ*. Bowman has confirmed Hannover's experiments in the fœtus. Kolliker thinks that it is an analagous condition of the embryonic areolar tissue, which, after fœtal life, disappears, and becomes a kind of more or less consistent mucus.

Most physiologists agree that the functions of the vitreous consist in the correction of prismatic refraction. Its relations to Daltonism will be explained farther on.

Numerous explanations have been offered to account for the phenomena of color-blindness. We cannot entertain all of them, but propose to cursorily glance at the theories of some of the most eminent and intellectual men who have attempted to solve the problem. Dalton, the author of the atomic theory; Dugald Stewart, the metaphysician; Mr. Troughton, the celebrated optician; Prof. Brandis, Dr. Somers, Dr. Unzer, and many other eminent men, have been the victims of the infirmity; and, of course, have strenuously striven to account for it, and, *par consequence*, to devise the proper remedies. Dalton's theory was, that one of the humors of the eye was a "colored medium, probably some modification of blue." He further remarks, "I suppose it must be the *vitreous humor;* otherwise, I apprehend it might be discovered by inspection, which has not been done." A post-mortem examination by Dr. Ransome failed to discover any discoloration of Dalton's vitreous humor. Notwithstanding this fact, Trinchinetti, an Italian physician of some eminence, has revived this hypothesis, and states his belief to be, that Daltonism is produced by a coloration of one or more of the diaphanous media, probably the crystalline, and even advises its extirpation to remedy the defect. Gœthe explained it by an insensibility of the retina, or sensorium, to blue color; and, on the contrary, Szokalski, in enumerating more than sixty patients, failed to detect one in which there was absolute deficiency of the perception of blue.

In such cases, many have imagined that the retina has a bluish tinge; the ophthalmoscope now, however, places all such theories out of the question, because a bluish tinge of the retina would indicate not only dyschromatopsia, but a condition of a much more formidable nature. Dr. Thomas Young explained it on the theory of a "paralysis of those fibres of the retina which are calculated to perceive red,"—nothing more than a *quid pro quo*. Dugald Stewart explains it by a want of the adaptibility of memory to color, or an incapacity to "conceive the sensative distinctly when the object is removed,"—a *post hoc propter hoc*.

Many learned men metaphysically inclined, for the want of a better one, have adopted Stewart's theory. Phrenologists attempt to account for it by the absence of the organ of color; this, too, is a

mere nothing by the way of explanation. One of the best rationalistic explanations is that cited by White Cooper, as having been advanced by Hartmann; and, did we not possess physical explanations, would be that adopted as the most satisfactory. "Hartmann is of opinion that it is by analysis that we arrive at a knowledge of objects which present themselves to our notice; he supposes that we do not perceive them instantly, but little by little, and only by examination of their distance, form and color, which scrutiny rests on a series of changes operating on the retina, ciliary nerves and motor ocular nerves; we do not easily recognize objects unless this succession of modification has become habitual, and takes place easily, hence achromatopsy results from a certain state of torpor and indolence of the retina and motor muscles of the eye!"

In his *Second Memoir on Acromatopsia*, Wartmann says: "I admit, with Harvey, Young, Jungken, Müller and others, that its seat is in the retina, and I think that it is produced by an abnormal state of the nevous expansion, in such sort that it reäcts equally under two or more differently colored vibrations. If the vibration caused by a ray of red is identical with that engendered by a green ray, there will be confusion of these colors. This theory is independent of all systems destined to explain light. The theory which explains *Daltonism* by an abnormal elasticity of the retina, has the advantage of substituting a reasonable physical condition, for a vague notion of the sensorium; besides, it is supported by facts, because the injuries which alter the ordinary constitution of the visual organ, are capable of exciting permanently or temporarily a false perception of colors. Lastly, it appears to be confirmed by the circumstance that, with many Daltonians, the eye sees less distinctly the red rays than those in which the refrangibility is greater. Hannover's discovery of the segmentary disposition of that body, after its maceration in chromic acid, seems to have been neglected by all writers on Daltonism. We feel confident that an explanation of the phenomena of color-blindness can be made by such segmentary and prismatic arrangement. The explanation we offer, and which we propose to prove by an analysis of prismatic refraction, is, *that color-blindness is the result of irregular prismatic refraction, producing interference of rays of light, as it passes through the vitreous humor.* What conditions combine to produce such an effect, physical research has, as yet, been unable to demonstrate; but *a priori* reasoning by exclusion tends to that effect. For there are bodies which will transmit one kind of color and reflect another—leaf gold for instance, which transmits yellow, but reflects green. Again, some substances only reflect the various rays, thereby producing color when they are of a certain thickness, beyond which they appear black. Now for the proofs. The peculiar property which a triangular prism of glass possesses of refracting light, and decomposing it into seven primary colors, viz., violet, indigo, blue, green, yellow, orange, and red, is the basis of our demonstration.

The solar spectrum, with regard to each particular color, is vivid only at a particular part, as their blending is of such a nature as to make it difficult to say where one ends and the other begins. The violet rays bend most from their course; the red the least, or are the most direct; the indigo, blue, green, yellow and orange possess this

property, as they are named in this list. These colors were supposed to be homogeneous, or simple, because they preserved their individuality when passed through another lens. Some of these colors are compound, as we can synthetically demonstrate. Red, blue and yellow have been used by artists, since time immemorial, in the formation of all other tints; and as no other mixture would produce these colors, they must be necessarily simple, or homogeneous, and the others, viz., violet, indigo, green and orange, as a natural consequence, are compound, or heterogeneous. Buffon first noticed that, by steadfastly looking at a red, yellow, or blue spot on a black or white ground, a fringed border is seen around each of them, composed of the three tints, viz., around the red spot a green border —and green is composed of yellow and blue; a violet border is observed around the yellow spot—and violet is made up of blue and red; orange border is perceived around the blue spot—and orange is a mixture of red and yellow. These phenomena remained unexplained until Mr. Hay, of Edinburgh, brought them before the public in his work on the "Laws of Harmonious Coloring." Sir David Brewster, Dr. Neil Arnot, Prof. Holmes, and many other scientific persons, have concurred in the opinions advanced by Mr. Hay. In fact, his experiments can be easily verified, as they have been done, by any one who chooses so to do, by fixing a prism in a hole in a shutter, admitting a ray of light in a darkened room, and the decomposed light thrown upon a screen. Each color is then put to the test, and is found incapable of being divided into two. A hole is then made in the screen, corresponding to the centre of the red of the spectrum, and another in that of the blue, and these colors allowed to fall on a second screen. By means of a second prism, the red ray is directed to the spot where is the blue, and the result was a combination of the two, and a pure and intense violet produced, exactly similar in all respects to the violet on the first screen. Red and yellow subjected to the same process developes orange. Yellow and blue thus treated, produce the prismatic green. A simple ray (red, for instance,) was then thrown upon a compound one, green, and there was no union; as, on the contrary, there was an interference, and a negative result obtained—black. Thus it was with the whole series. Thus, by synthesis, it is shown that the three homogeneous colors, yellow, red and blue, have an affinity for each other, which is wanting in violet, indigo, green and orange; and, as a consequence, could not be the same in every respect, save color and refrangibility. The three homogeneous colors, yellow, red, blue, are in a numerical ratio as follows: yellow, three; red, five; blue, eight; and when any opaque body reflects these colors in such proportions, white is the result. In this condition, they are in an active state, and each is neutralized by the relative effect of the others. When in the passive state, these rays are absorbed, and black is the result. The effect is the same when transmitted through a transparent substance; but are *material* or *inherent* in the first case, and *impalpable* or *transient* in the second. Hence color is not an entity, but depends upon the refractive or reflective power of bodies; and, as the disposition of the atoms or particles of various bodies, so is their power of reflecting and absorbing rays; and as the reflection and absorption, so is the color, which is not inherent. Color produced by artificial light, viz., oil, candles,

gas, etc., the rays of which are not so pure as those of the sun, is very apt to be deceptive, so much so, that every one will mistake pale blue for green, or *vice versa*. Now, as color is the reflection of the rays which the body does not absorb, an interference of such rays, in passing through the vitreous, produces the phenomena of Daltonism, when there is a defect of prismatic arrangement in that body. A rose is red, because it absorbs all the rays of the prism, except red, which it reflects; but look at it through the medium of a compound color (green, for instance), and an interference takes place, and black is the result.

Each prismatic ray has a different momentum, and it requires different distances to bring them to a focus. The red having the greatest momentum, is soonest brought to a focus; therefore, the sun looks red in a fog. When we remember, that light has a regular recurrence of periodical movements, at equal intervals (500,000,000,000,000), five hundred millions of millions in a second, and that if one vibration alone were lost, the color would be imperfect, we can form some conception of the minutest difficulty in the way of vision, infinitely too small to be appreciated by anything in the nature of physical research.

Sir John Herschell seems to have arrived at the most correct data with regard to the length and rapidity of the various rays of the solar spectrum. We quote them as follows:

Colored Rays,	Length of luminous rays in parts of an inch.	No. of undulations in an inch.	No. of undulations in a second.
Red	.0.000.256	39.180	477 billions.
Orange	.0.000.240	41.610	506 "
Yellow	.0.000.227	44.000	535 "
Green	.0.000.211	47 460	577 "
Blue	.0.000.196	51,110	622 "
Indigo	.0.000.185	54.070	658 "
Violet	.0.000.175	57.490	699 "

According to the calculations of Frauënhofer, the relative intensity of light of the various portions of the solar spectrum are numerically expressed as follows:

Violet	from 5 to 6
Blue, dark (indigo)	31
Blue (of solar spectrum)	170
Green	480
Between orange and yellow	1.000
Orange	640
Red, middle ray	94
Red, extreme ray	22

These tables are introduced simply to demonstrate, that the different colored rays of the solar spectrum may be accounted for by a difference in the frequency of recurrence in the vibrations. That light is transmitted by undulations, in a vibratory manner, we will not discuss, as such is believed by all scientific observers.

The deductions we reach, after a careful consideration of this subject, are, that if Daltonism be not dependent upon the disarrangement of the prismatic segmentation of vitreous humor, such an hypothesis readily explains all its phenomena. We feel satisfied that

a polychromatic Daltonist, such as Dr. Darwin, the poet and botanist, who could distinguish a cherry from the leaf only by its form, both being grey in color, labored under such deformity in regard to prismatic refraction, as is above mentioned, when speaking of the interference of a simple and compound ray. The dichromatic Daltonist, or one who distinguishes only black and white, evidently lacks the proper prismatic refraction, because there is a too rapid concentration of rays, which also goes to explain the facility with which they read in darkness.

With regard to such cases of temporary Daltonism, as are frequently encountered in practice, the explanation is readily understood as being subjective, and dependent upon a pathological condition of the visionary apparatus. We have seen an instance of this, in which the opthalmoscope revealed *hyperæmia retinæ et papillæ*, and which disappeared under the proper treatment, as did the disease. As for the remedies, which are entirely of a physical nature, a complete study of the character of the phenomena will necessarily induce the use of such glasses, tinted to throw such rays into the cavity of the globe, as will in a measure make up the deficiency caused by defective prismatic derangement of the vitreous body. These, of course, must be determined by a synthetical study of such colors as are non-appreciable to the Daltonists.

Jungken and Chelius recommended the use of colored bands, with their names attached, in order to facilitate the defective memories of the Daltonists, based on the theory of Stewart, which, of course, is not to be thought of. Wartmann, Sir David Brewster, Sir John Herschell, and others, have devised sundry methods of cure, which cannot for the moment be discussed. We think a series of experiments might be induced, which can overcome the defect, by an arrangement of certain colored glasses, operating to make up a deficiency of prismatic refraction.—*(St. Louis Med. Jour.)—Richmond Med. Journal*, June, 1866.

Art. VIII.—*Photography applied to the Microscope.*

DURING a recent visit to the Army Medical Museum at Washington, our attention was arrested by the progress which had been made by that institution in the application of photography to the representation of objects as seen with the microscope. The work was commenced at the suggestion of Dr. J. J. Woodward, U. S. Army, formerly of this city, for the purpose of preparing the histological series of pathological illustrations for the medical history of the war; and the experiments made, have been conducted to their successful termination in a practical art, under the supervision of this officer, by his skilful assistant, Dr. Edward Curtis, to whom the immediate manipulation was entrusted. Among the results exhibited to us were a series of splendid transparent fac-similes of the field of the microscope, with various powers, from ten to twenty-five hundred diameters, photographed directly from the instrument, and enlargements

of these, some of them to the enormous power of nineteen thousand diameters, which still, however, preserve surprising sharpness of definition. The subjects shown us were a series of diatuns (test objects), a large series of sections of diseased intestine (camp fever and diarrhœa), and a number of miscellaneous objects, as the trichina spiralis, a series illustrating the method of cell division, as shown in growing cartilage, etc., etc. It is intended to place these magnificent specimens in the hall of the Museum, so soon as it is removed to Ford's Theatre, which is now being fitted up for the purpose.

In fact, we are not in any respect going too far, when we claim for the work, not only that it is a complete success, and fully adequate to the purpose for which it was undertaken, but that it is the most successful attempt of the kind that has ever been made, and that the Army Medical Museum now stands, in the matter of micro-photography, far in advance of any public institution or private investigator in the world.

That this statement of ours is not an extravagant one, will be seen by the following frank and manly letter from the celebrated Dr. Maddox, one of the acknowledged heads of this branch of research in Europe, which we clip from the *British Journal of Photography*, for May 25th, 1866, with some remarks by the editors.

PHOTO-MICROGRAPHS.

"*To the Editors:* Gentlemen—I am desirous of making known, through the medium of your journal, the magnificent results in photomicrography obtained in America by Brevet Captain Edward Curtis, assistant surgeon U. S. Army, in the laboratory of the Army Medical Museum, which mark the value I have so often advocated of its utility in your journal, and elsewhere. It appears from the memorandums on the backs of the prints, and by a private letter from Dr. Woodward, Bvt. Major and assistant surgeon U. S. Army, to whom I am indebted for their possession, that two competitive photomicrographs have been taken, one by Powell & Leland's one-fiftieth objective, and the other by an American maker's one-eighth objective, brought up to an equivalent power by an achromatic amplified in the place of an eye-piece (Wales'). The former magnified 2344 diameters, the latter 2540 diameters, and from each of these negatives a further enlargement to 19,050 diameters. In the choice of the prints selection would, I expect, be given to the negative by the one-fiftieth in the one case, as being somewhat sharper and brighter than the one-eighth amplified; and in the other case to the enlargement from the negative taken by the latter. They are *both so equally good*, and so far in advance of anything I have seen in this country, that the greatest credit is due to Captain Curtis; and I am glad to be able, through the kindness of Mr. How, of 2 Foster Lane, Cheapside, to favor those desirous of seeing the originals, with their inspection. I am yours, etc. R. L. MADDOX, M. D."

With the exception of some most successful experiments with a one-fiftieth of an inch objective, constructed expressly for the museum by Messrs. Powell & Leland, of London, all the work done there has been executed with American object glasses. Mr. W. Wales, of Fort Lee, New Jersey, is the skillful optician by whom

these glasses were constructed. Dr. Woodward explained to us, however, that the reason of the great success of the museum work is to be found less in the perfect workmanship of these glasses—though in his opinion they have never been excelled—than in the new principle on which they are constructed. They are simply made to bring to a focus the violet end of the solar spectrum, where are the chemical rays, at the expense of all apparent achromatism. In illuminating them for work the direct light of the sun is employed, but it is first passed through a solution of the ammonio-sulphate of copper, by which practically all but the violet ray is absorbed.

In Europe, strange to say, while a correction for the chemical focus has been proposed and even practiced, the result was comparatively a failure, because correct focussy was interfered with by using ordinary unmodified solar illumination. On the other hand, violet light has recently been proposed as an illumination for micro-photographic purposes by the Count Custracune, who, however, omits the indispensable precaution of correcting the objective expressly for the violet ray.

In photographing the soft tissues, a thin piece of glass is also interposed in the solar beams, to disperse the light and destroy those interference phenomena which have rendered European attempts at the photography of most of these tissues, with high powers, so completely abortive.

We advise any of our readers who may visit Washington, not to fail to obtain a sight of these pictures, for it is impossible not to realize that a new and more positive era is about to open for microscopic research, now armed with this powerful method of attaining accuracy, by which real microscopic appearances can be communicated to those who do not use the instrument; and investigators in distant parts of the world can compare their results, without misleading each other by those fanciful misinterpretations which have so often, whether intentionally or unintentionally, been expressed in microscopic drawings.

Unfortunately photo-lithography and other methods of preparing engravings photographically, have failed as yet to reproduce properly the wonderful delicacy of detail displayed in the museum pictures; but for the present they are readily copied by hand either on steel or stone, and the time cannot be far distant when the further improvement of the already promising art of heliographic engraving will fit it for the reproduction of the results of its more advanced sister art, micro-photography.—*(Phil.) Medical & Surgical Reporter*, July 7, 1866.

Art. IX.—*On the Application of a Compressing Membrane to the Stethoscope.* By Chas. L. Hogeboom, M. D.

AUSCULTATION is easier through dense tissues, as bone and cartilage, than through adipose and muscular tissues. In using e stethoscope a certain degree of pressure is requisite in order to

have the sounds well conveyed. The greatest condensation lies under the circular edge of the instrument and adjacent to it, both exteriorly and interiorly. By making compression over the entire disk we obtain a greater quantity of sound from those parts lying immediately beneath its centre. This can be effected by stretching across the pectoral extremity of the stethoscope a membranous substance containing sufficient firmness and elasticity combined to compress the tissues and transmit sonorous vibrations. A piece of beef's or pig's bladder answers the purpose admirably. When a stethoscope thus armed is pretty firmly applied to the walls of the thorax, condensation of tissue is effected under the whole disk, but not to so great a degree directly under the circular edge as when no compress is used. The surface is not rendered so spherical, but approaches more nearly a plane, while the more equal distribution of pressure is better calculated to increase the resonance of the thoracic walls directly over the organs under examination. The elastic and vibratory properties of the surface of the body are in no way impaired, but rather increased, as well as the conducting power of the tissues. I think it will be found that scarcely any change in the quality of the sounds heard by the ear alone is produced by the use of the membrane. The change is not so great as when the stethoscope is used without it.

In auscultation of the larynx and trachea, especially in thin persons, a great advantage is gained over the ordinary stethoscope, because only a portion of the disk need be applied to the surface, the mouth of the instrument being already closed. It is generally preferable to have the whole circular rim applied, but this condition is not imperative, nor always desirable. By having the rim rest as lightly as possible upon the skin while the membrane is more firmly applied, we may often advantageously exclude more distant sounds that we do not wish to hear, while we only obtain those which come from directly beneath the space of contact. The membrane may be applied to any stethoscope, and I think it will be found to reduce the *roaring* in all, but to a greater degree in Dr. Cammann's than in any other, thus relieving this excellent instrument of much of the objection urged by some against it. It may be adjusted by placing a piece of bladder for a few minutes in water of ordinary temperature, slightly rubbing and stretching it, partially drying its surface with a cloth, and then firmly stretching it across the mouth of the stethoscope. Generally the bladder requires no other material than what it possesses to make it adhere, although a little mucilage or glue may be advantageously used. If the membrane, after drying, loses its tension, this may be restored by moistening it with a solution of tannin, in the proportion of about ten grains to an ounce of water. Upon drying, the disk will be found to have become sufficiently tense, provided it was at first pretty well adjusted. The compressor might perhaps be constructed of a disk of horn or hard rubber, or similar substance, made very thin and elastic.

In some instruments the use of the compressing membrane will be found to considerably diminish the noise, but not the proper sounds of the internal organs. I think that the valvular sounds of the heart, particularly, will be more easily appreciated and assigned to their appropriate sources. But in the majority of stethoscopes, and espe-

cially in those of simple construction, the sounds will be found to be greater when the compressor is used, and more nearly approaching in quantity and quality those which are heard by the ear alone.

Perhaps the majority of auscultators prefer in most cases to apply the ear directly to the walls of the body, availing themselves, however, of the stethoscope as an occasional aid. In selecting an instrument for this purpose, one great desideratum is to obtain one that does not change the character of the sounds heard by the ear alone. This any instrument must do, if it conveys sounds having sources external to the body; or if it be so constructed that the motion of air within it produces sounds which may be said to belong to itself. The blending of *musical chords*, it is well known, increases the volume of sound. Therefore, in using the stethoscope, any tone proceeding from sources which are external to the organs under examination, if it be a chord to tones produced by these organs, must, as a matter of course, increase these tones. If they belong to sounds for which we are particularly seeking, an advantage may perhaps be gained by the intensification, provided the sounds are not otherwise sufficiently audible. Thus, the sound in cavernous respiration may be intensified, if the stethoscope derives from any other source a sound of a similar nature, and whose tone is a chord with that belonging to the cavernous sound. If, however, we are listening to sounds arising in the finer bronchial tubes or air vesicles, they may become obscured by using a stethoscope which is capable of emphasizing the larger bronchial respiration. Such an instrument should be used with great caution, except by experienced auscultators, who are not likely to be led into error by alterations in the organic sounds produced by the instrument itself; and the diagnosis should be verified by other means, where they are available.

An instrument having so practical an application as the stethoscope should not, however, be tested by any theory. No matter what may be its form or material, that instrument which enables the physician to make the most correct diagnosis is the best. Let theory render what verdict it may, its actual use furnishes the fairest test which can be applied, and that alone must be appealed to in determining its merits.—*N. Y. Medical Journal*, July, 1866.

Art. X.—*Rapid cure of Cynanche Trachealis and Membranous Croup, by means of insufflation of pulverised Nitrate of Silver.* By Dr. Guillon.

CYNANCHE trachealis and membranous croup carrying off new victims every day, I think it my duty to call attention to a treatment by means of which that disease is very promptly cured, even when the false membranes have extended to the larynx. This treatment, the advantage of which has been demonstrated to me by long experience, consists in the insufflation of a very fine powder of nitrate of silver on the diphtheritic membranes and the surrounding parts. Were this treatment more generally known, it would in many cases

have done away with the operation of tracheotomy, which is performed with success only when the disease does not extend beyond the larynx.

For the first time, in 1828, I had recourse to insufflations of nitrate of silver with two patients suffering from cynanche trachealis; after having ascertained that alum was powerless to prevent the spread of the disease, and that cauterization with a sponge dipped in hydrochlorie acid could not reach the false membranes behind the pillars of the palate, above it and in the larynx.

Experience having taught me, at a later period, that nitrate of silver in solid pieces left in the mouth a taste more disagreeable than when it was pulverized, I adopted the powder, and have used it pure, well pulverized, and perfectly dry. Should it be in any way damp, it can be easily dried by holding it in a silver spoon over a candle or hot coals. The only point of importance with regard to the instrument, is to observe that the powder on leaving the tube is spread all round, and not projected in a lump covering only one place.

The advantages which I have invariably obtained from that treatment, make it a duty on my part to call to it the attention of my *confrères*—1st. Because the use of nitrate of silver, finely pulverized and carried by insufflation on the diphtheritie membranes and surrounding parts, cures the disease very quickly, when it begins by the mouth and larynx. 2d. Because I am convinced that a good many persons who have died of cynanche trachealis *(angine pseudo-membraneuse)*, the march of which had been impeded neither by cauterizations with liquid caustics nor other known remedies, would have been very promptly cured, had the insufflations of pulverized nitrate of silver been used. 3d. Because the projection of that substance on the false membranes behind the pillars of the palate, on the palate itself and in the larynx, causes their quick expulsion. 4th. Because the styptic action of that salt on the mucous membrane prevents the disease from spreading to the nasal fossæ and larynx, and from bringing on membranous croup and membranous coryza. 5th. Because the astriction produced by the expulsion of the false membranes, spares the patient the intoxication, the diphtheritie poisoning, resulting from absorption, when the disease is not checked in its course. 6th. Because, cynanche trachealis being a local disease when it begins, this local medication, with a suitable regimen, ought to be preferred to emetics, purgatives, etc., prescribed by some physicians to destroy what they call the specific morbid element.

It must also be used in preference to the substitutive medication, recommended by Dr. Trideau, which does not prevent diphtheritis from extending from the pharynx to the trachea, and from constituting a croup which soon becomes fatal. Hear what he says (page 11 of his book): "The croup which follows cynanche trachealis, we must admit, will almost invariably resist all sorts of treatment."

I must here observe that, had this treatment been more general, we should not have seen so often those cases of paralysis brought on by diphtheritie poisoning, which happen in the course of that disease—paralysis of the œsophagus, which compels the use of stomach tubes for the introduction of food, as also those cases of sudden death resulting from paralysis of the respiratory organs.

As the insufflations are performed in two or three seconds, and the

pain produced by the nitrate of silver is only felt later, if the patient presented any symptoms of incipient croup, the first insufflations should be made when he takes a deep inspiration, so that the powder may reach the larynx and stop the croup in its beginning, before the pain is developed.

As the diphtheritic membranes are sometimes formed again, I use astringent gargles, and should these fail, I have recourse to a new insufflation of nitrate of silver.

In 1858, Mr. B. and his son were both attacked with cynanche trachealis. The insufflation in Mr. B.'s mouth was performed in presence of Mr. Bretonneau; that on the son, in presence of Mr. Blache. Two insufflations in each case were sufficient to insure complete success. Another cure was obtained on a patient of Dr. Delpech, a young Belgian princess, suffering from cynanche trachealis covering the whole palate and pharynx, with violent fever and engorgement of the submaxillary glands and cervical ganglions. Several cauterizations with hydrochloric acid having obtained no result, two insufflations of nitrate of silver were performed at two days' interval, and were perfectly successful. The first insufflation was done at 4 o'clock in the afternoon; and at our visit the next day, the mouth and pharynx were found entirely free of diphtheritic exudations, and fever had ceased. Two days afterwards, and notwithstanding the use of alum gargles, new membranes were formed; when a third and very light insufflation was performed, and this time the cure was complete. Several other examples might be cited, but these we consider as sufficient.

Wishing to know how far the nitrate of silver penetrated into the aërial tubes, we made, Mr. Trousseau and myself, two insufflations to an average-sized dog. On examination, we found the powder had reached the end of the second divisions of the bronchi.

Since, by insufflation, the powder can be carried as far as the second divisions of the bronchial tubes, it can be practiced with advantage to blow powder into the larynx and trachea, in cases of incipient membranous croup; that is to say, in circumstances where tracheotomy is tried with some chance of success, but often with an unfavorable result. Since this local treatment, used early in diphtheritis when it begins with the mouth, has obtained results which cannot be reached by applications of liquid caustics, insufflations of alum or tannin, the use of chlorate of potassa, of bromide or iodide of potassium, mercurials, emetics, purgatives, balsams, etc., it seems to us that this local treatment ought to receive the preference over all others.—*Revue de Thérapeutique.*

Art. XI.—*Relation of the Capillaries to Cholera.* By J. S. Jewell, M. D., Prof. Anatomy, Chicago Med. Col.

After discussing at considerable length the physiology of the minute arteries, the writer reaches the following conclusions:

1. The smaller arteries are purely muscular in their middle coat.
2. They are supplied by organic nerves.

3. They are under the control of these nerves, and of the indispensable conditions of the action of these muscular vessels is, that they receive the excitant influence it is one office of these nerves to convey to them.

4. It is the office of these vessels to assist in the circulation of the blood through the capillaries, in performing which, they are probably the principal agents. They do this as other organs analogous to them circulate fluids, examples of which have been given.

While the blood may be conveyed to the small vessels and capillaries by the agency of the heart and *elastic* arteries, there is reason to believe the blood would either be imperfectly, or not at all, circulated through the capillaries into the veins, were it not for this muscular apparatus, by which the blood receives a new momentum, necessary, and sufficient to circulate it through the capillaries, in spite of the difficulties nterposed by the latter.

PRACTICAL APPLICATION.

It will only render more probable the truth of the above conclusions, if practical application can be made to them in actual pathological states. I propose, briefly, to make one such application here. One of my chief reasons for presenting this article was, that the application of such views seemed to me to throw new light on the pathology of cholera, which we are constantly expecting in the United States. I had, however, long since began the examination of this subject, in reference to inflammation.

Now let us see if, by keeping these conclusions in view, we can get at a more rational view of the pathology of cholera than has commonly prevailed. And surely, in so fearful a disease as this, concerning which so little is truly known, no serious attempt to throw even a feeble light on its nature should be disregarded.

Admitting, then, that the office of these small muscular arteries is as has been stated, and that one indispensable condition of their action is, that they shall receive rythmically from the organic nervous system the excitant influence on which their action directly depends — I say, *admitting* this — we are in position to see if any agent whatsoever shall so act on the nervous system as to diminish (we will say) its energy, that in proportion as these vessels depend on it in the way indicated, in exactly that proportion will they be affected, or fail of performing their proper office ; and, just so far as the circulation depends on these vessels, just so far will it be affected or fail. If, for any reason, the stimulating influence of the organic nervous system should be withdrawn or destroyed, entirely or partially, death will immediately follow, in the one case, or, in the other, more or less marked depression of all the organic functions will follow, which depend on the integrity of the organic nervous system and a constant supply of blood. This will be attested, of course, by prostration, coldness of the surface and body generally, from failure of the "chemico vital" processes on which the production of heat depends — feeble pulse, feeble action of the heart, deficient capillary circulation and the like, but especially the latter.

Now, I must say, admitting the views above insisted on, and supposing (as I think we reasonably may) a cause which shall act as I have indicated, the consequences related are logically deducible. I

will now state, briefly, what I believe to be the history of a marked case of cholera, that it may be compared with the views and general statements just made:

1. I believe cholera to depend on a specific epidemic cause, probably unknown save in its effects.

2. This cause I believe to be introduced into the blood. When there, it may, and probably does, act on the blood; but its most important, if not its primary action, is on the organic nervous system.

3. That the immediate effect of its action on this nervous system is to impair or destroy its energy in a manner more or less marked, and mediately or secondarily all the the organic functions which depend on this nervous system.

4. That the destruction or withdrawal of this energy, or excitant power, according to its completeness, in the same degree affects the system of organs whose office it is to supply the various parts of the body with nutriment or blood, namely, the heart and muscular arteries, particularly the latter, which are at the threshold of the tissues, and, as a consequence, we have failure, more or less, of those intimate actions between the blood and tissues, on the proper performance of which, the welfare of the organism depends, and that the symptoms are prostration, paleness of the surface, ghastly appearance of the countenance, coldness, feeble action of the heart and small vessels, feeble pulse, local congestions, collapse, failure of all the true secretions, for want of a healthy supply of blood, and also of that excitant energy on which they depend for successful working, no less truly than do the heart and muscular arteries.

5. That the essential cause of cholera is *not* retained excretory matter, nor, necessarily, a change in the blood *per se*, but as has been stated above; and that the primary or principal danger in this disease is this profound affection of the organic nervous system, from which the patient may die at once in collapse before discharges occur.

6. But another danger arises secondarily, in most cases, that is from the excessive discharges by which the blood becomes suddenly so much impoverished and so viscid, as to render it alike unfit to maintain life on the one hand, or, on the other, to circulate through the capillaries. These discharges occur in the following manner: Blood is sent freely and abundantly to the abdominal viscera, or to all those parts, the blood from which is collected by the *portal* vein. The blood once *in* the portal vein, instead of passing as the blood *elsewhere* does, unobstructed into the great blood channels which lead directly to the heart, instead of this, I say, it is required to pass through *another set of capillaries*. Now, if what we have tried to show is true, the small vessels in the intestinal walls (and especially in the soft, yielding mucous membrane) have lost, in greater or less measure, their contractile power, as they have everywhere, against this anomalous condition of the portal circulation there is no help. We have *here* a natural difficulty in the circulation experienced no where else in the body save, probably, in the kidney.

If our conclusions above given are *true*, it is easy to see why the blood is *detained* here as nowhere else. It is also easy to see, since there is no interruption to the *supply* of blood to the abdominal viscera, there must speedily be a great *accumulation* of blood in the

vessels which ramify in the mueous membrane (we will say) of the stomach, and bowels, and in the portal vessels. It is now easy to see, if this state shall eontinue, that the time will soon eome when the vessels will inevitably relieve themselves by eopious watery exudation or effusions *on the mucous membrane* of the stomach and bowels, and that this membrane thus *congested* will be somewhat irritable, to say the least, and that there will be vomiting and purging of a watery fluid, which is nothing more nor less than the serum of the blood, and that it will oecur to an extent whieh will depend on a variety of eireumstanees. The patient rapidly loses the watery part of the blood whieh, in turn, in a way well understood, absorbs the fluids from the tissues, and, as we would expect, the patient rapidly emaeiates, ete. It would hardly be expeeted of the liver, that it would aet under these circumstanees, for obvious reasons. That bile, therefore, should be absent from the diseharges, is not surprising, but a fairly dedueible eonsequence. The same may be said of the kidneys and urine.

From this exeessive loss of water, the patient has a raging thirst; but *any one* aequainted with the prineiples of osmosis, will see it is impossible mueh water should be absorbed from a surfaee, or a mueous membrane, from whieh water is oozing out in streams, as one might not inappropriately say. What has been said about water, may be *also* said of medicines.

When the nervous system reeovers from the shock (if I may so speak) experieneed, the heart and muscular arteries, and various seereting organs, etc., resume, *pari passu*, their funetions. The pulse returns, the portal eireulation is restored, the discharges eease, the seeretions reappear, remedies begin to have their appropriate effects, and so on to reeovery, many times in a spaee far too short (from the inception of the disease until reeovery) for us to suppose it essentially a *blood disease*. Such, in view of the above eonelusions, are my views of the pathology of cholera.

Now, what shall be the treatment of eholera in the stage of eollapse whieh, in fully developed eases, is the only one of mueh importanee?

1st. Remedies, administered in the ordinary way, give but feeble promise of effeet in this stage, as an appeal to experienee will show. The reason is obvious. If the intention is that the remedy shall be absorbed from the *stomach*, and, in the blood, be earried through the body, the state of the portal eireulation, it is almost needless to say, forbids it. Notwithstanding this, remedies might be employed, sueh as calomel or powerful stimulants, sueh as will arouse the mueous membrane and stimulate to eontraetion the engorged vessels, and, possibly indireetly, the neighboring nervous eentres.

2d. In view of the eoldness of the surfaee and eondition of its eapillary eireulation, we would employ heat, severe frietion, and powerful external stimulants assidiously, to rouse the susceptibility of the skin and promote the eireulation in the *surface* of the body, and for the purpose of rousing, indirectly, the nervous system, through irritation and stimulation of a surfaee so large, and ordinarily so sensitive, I would use the most effieient stimulants and irritants. But in view of the probable state of the organic nervous system, whieh calls for the most aetive and direct stimulation which can only be

effectually made when stimulants are introduced into the blood, and are carried in it to such parts of the organism as require their agency, and in view of the state of the mucous membrane of the stomach, etc., by which it is unfitted for absorption only imperfectly, I say, in view of all this, we may well look for some other channels through which we may introduce such remedies as are required, or *seem* to be. There are two or three ways in which this may be accomplished:

1st. By extensive faradization of various parts of the body, and by currents sent in a variety of directions through the body.

2d. By inhalations, as of chloroform, ether, bromine, etc.

3d. By hypodermic injections. In this way we may introduce beneath the skin, in many places, known quantities of various soluble substances, such as morphia, strychnia, quinia, the active principles of coffee and tea, etc., with the certain assurance they will be rapidly absorbed by the flaccid vessels and carried to all parts of the body, and in this way made to act speedily on those parts of the organism, upon reaching which, with appropriate agencies, the fate of many cases depends. Such, in brief, are my views of the pathology and treatment of cholera.

To fully unfold or set forth the subject glanced at in this paper, would require a series of essays.

The views advocated in this paper have been incidentally referred to in a report, made to the Illinois State Medical Society, on "cerebro-spinal meningitis." They are presented here because they are deemed important, and especially in connexion with our expected visitant — cholera, in which I have briefly tried to apply them; and because they have not seemed to me, for some time past, to have been sufficiently recognized by the profession.

It would be a pleasant task to apply these same principles to the inflammatory process, in all its phases, in exudations and the like, and various pathological states, and see how far, if these principles be admitted, the prevalent doctrines of inflammation are from the truth, etc. But I have neither time nor the space for this.—*Chicago Med. Examiner*, August, 1866.

Art. XII.—*On Night-Blindness.*—By Dr. F. E. Junker.

MR. HAYNES WALTON, in his interesting paper on night-blindness, leaves the explanation of some of the features of this complaint to other observers. Allow me to give here the epitome of my limited experience of this disease, which has come, in various climates, within the range of my observation.

I propose to distinguish between genuine night-blindness, which is caused mostly by cosmical influences, and symptomatic night-blindness, whether accompanying other diseases or the consequence of pathological processes.

The true form consists in the temporary, more or less complete, suspension of vision after sunset, during twilight and night, in artificial light, and even in dim daylight. It is caused in most instances,

as in the case reported by Mr. Haynes Walton, by a more or less continuous hyperæsthesia and consequent over-fatigue of the retina, and is a phenomenon very analogous to a common occurrence within everybody's experience. When passing from the bright sunlight into the deep shade, or from a highly-illuminated room into a darker place, we are at first unable to see distinctly—sometimes even cannot see at all—for a longer or shorter time, according to the difference of intensity of light. The degree of light in the darker place is insufficient to react on our retina until it has recovered from the effect of over-fatigue by previous brightness. The same is the case if our eyes have been long fixed on a bright white surface—for example, a whitewashed wall, or a field covered with snow with the sun shining on it. Our vision will become dimmed after some time, and a dark mist will alternate with the dazzling object. If we return afterwards into a moderately-lighted room, or into the shade, we may be what is commonly called snow-blind for a longer or shorter time, according to circumstances.

This explanation, I believe, holds good for the night-blindness of sailors, soldiers, etc., who have been exposed to the glaring sunlight in the tropics, principally when reflected by the glittering sea or from white sandy plains or rocks unvariegated by verdure or the shade of vegetation.

I feel, therefore, inclined to regard night and snow-blindness as analogous diseases, and as the effects of nearly identical causes.

In the winter of 1861 a part of the crew of a large transport ship, which conveyed troops under order to Canada, to Nova Scotia and New Brunswick, after an unusually long, boisterous and foggy voyage, had leave to go on shore on a bright, fine day. They had a several hours' drive in sleighs; and after their return on board three men were brought to me affected with snow-blindness. They being perfectly sober, the suspicion that rum had something to do with their impaired vision fell to the ground. Their pupils were slightly dilated and rather sluggish. On examination with the ophthalmoscope, I could not discover anything abnormal except incipient hyperæmia of the retina. The macula lutea was quite normal. They complained of frontal headache. They were not absolutely blind; they were able to distinguish large objects as through a mist. This state lasted without alteration during the next two days, and then gradually improved. Two returned to work on the sixth and one on the seventh day.

Several cases of night-blindness came under my observation at sea and on shore in the tropical latitudes of America. The patients were mostly young men, either on their first voyage or recently arrived. Among them were exceptionally two or three acclimatised old residents. They were all white men. I never saw negroes affected with night-blindness, although they rather like affecting any disease which they happen to observe in a white man. They expose their bare heads to the fiercest sun without fear of injurious consequences, but they never venture into the moonlight without the protection of the broadest-brimmed hat within their reach. These children of the sun are afraid of the moon and being struck with moon-blindness.

In some of the above cases night-blindness was the only complaint, without any other symptoms; in others there were sick headache, giddiness and constipation, the usual consequences of exposure to the sun. Dilatation (in one cese only spasmodic contraction) of the pupil, hyperæmia of the retina, and injection of the conjunctiva, constituted the alterations in the eye. The affection soon yielded to a simple symptomatic treatment and proper precautions against future exposure.

But there is another kind of genuine nyctalopia from quite different causes. In low marshy localities, where ague and other malaria-fevers are prevalent when cool nights succeed hot days, in the tropics as well as in more temperate climates, cases of night-blindness are met with either in its genuine form or with intermittent fever. I shall here speak only of the former. In such cases I found the retina slightly discolored, and the vitreous humor somewhat cloudy-opaque. The patients are generally from the poorer classes, ill-fed and badly housed, living close to banks of rivers, near marshes and artificially irrigated fields. I have seen cases of this form of nyctalopia in the rice-fields of Lombardy, on the Chagres River in the isthmus of Panama, in Nicaragua, at Tampico in Mexico, and on the low banks of the Essequibo in Demerara. In the latter country I found European settlers and Chinese and Bengalee coolies among the sufferers; negroes appear to be exempt—at least I never heard of any case amongst them. I hear also from good authorities that such cases occur in the neighborhood of the two Hungarian lakes, on the banks of the lower Danube and the Theiss, and in the Pontine marshes. I recollect having seen a few cases among the outdoor patients of the Ophthalmic Clinic, at Vienna, who came from a village on a small island of the Danube. In the treatment of this complaint we possess an almost specific remedy in camphor. Three five-grain doses of it daily seldom failed, except in old cases combined with ague, when quinine was resorted to.

Hitherto I have drawn from my own experience, but it will not be out of place to mention here several other causes and forms of night-blindness described by different authors, most of them, however, referring to what I call the symptomatic forms of night-blindness.

Teissier (Schmidt's *Jahrb.*, vol. v., p. 229) observed nyctalopia in a case of softening and atrophy of the optic nerve. But was it not rather a symptom of incipient general blindness, where there is of course greater torpidity of vision in deficient light?

Chauffard (*L'Institut*, 1837, No. 66) found in a soldier, who was suffering from night-blindness during the last three months preceding his death from enteritis, compression of the optic nerve by enlarged vessels, extending from the foramen opticum to the retina, hyperæmia of the ciliary ganglion, enlargement of the arteria centralis, and extravasated blood between retina and choroidea.

Jüngken, Pye and Carron du Villards record night-blindness in "febris intermittens larvata" (the "dead ague" of the Lincolnshire fens); Talford, Bramfeld and Krebel in scurvy; Cane (*Dublin Journal*, 1820, No. 53) in masturbation; Piringer in helminthiasis; Wittke in ergotismus.

Krebel, Fuss, Meissner and Lerche (Schmidt's *Jahrb.*, vol. xiv., p. 226) met with this disease at Kronstadt and Petersburg during Lent, when the poorer classes live exclusively on coarse vegetable food. Lerche observed during one Lent season two hundred and seventy cases.

Larrey noticed it in cholera in different parts of France, and ascribes its cause to "stupeur" of the ciliary ganglion and nerves (*Chirurg. Clinique*, 1837, vol. iv.), and also met with it in an epidemic form among soldiers encamped on the left bank of the Rhine.

Night-blindness appeared, according to Casper (*Wochenschrift*, 1837, No. 4), epidemic in an orphan asylum. Hysteria and bilious attacks are also mentioned as causes of nyctalopia. In all these cases the principal disease will be the object of the treatment.

I shall conclude with a few words on moon-blindness. It is a popular belief that sleeping in the moonlight, principally in the open air, produces this peculiar affection. I never met with a reliable authority for its real existence. May it not rather be the startling effect of light on some persons suddenly aroused from a deep sleep? They awake stupefied, incapable of seeing and of speaking coherently. A common bedroom candle has the same effect on them. If called up in a dark room, no such effect is observed. There are persons who cannot sleep with a night-light, and awake when the moonbeams fall on their bed.

The belief that sleeping in moonlight in the open air produces, besides moon-blindness, also rheumatism, has more foundation. I feel rather inclined to consider the dew which falls more profusely in clear moon-nights than when the sky is overcast, and saturates the clothes of the sleeper (who, perhaps lightly clad, escaped from the indoor sultriness of a warm summer night into the open air, and exposed himself to one of the causes of rheumatism), as the real cause.—*Med. Times & Gaz.*, July 21, 1865.

ART. XIII.—*Resemblance between Cattle Plague and Small Pox.* By CHARLES MURCHISON, M. D., F. R. C. P.

IN my first communication, after describing the points of resemblance between cattle plague and small pox, I wrote as follows: "These considerations may not be sufficient to establish absolutely the pathological identity of rinderpest and variola, but they unquestionably point to a very close analogy between them. The object of this communication, however, is not to insist that the two diseases are pathological equivalents, but to enlist the assistance of the medical profession in clearing up the matter. The mode of procedure is obvious and sufficiently simple. It is to produce cow-pox in cattle by inoculating them on the one hand with vaccine lymph, and on the other with the matter of human variola; and afterwards to ascertain if they be proof against the prevalent plague, or if the course of the rinderpest be thereby modified." During the last five weeks numer-

ous experiments of the nature here indicated have been performed in various parts of the country. Many of these experiments are still in progress; but enough, in my opinion, to show that vaccination confers no *permanent* immunity from the cattle plague. The unfavorable cases reported in my last communication would prepare the readers of The Lancet for this announcement. It is true that many cases have been reported where recourse to vaccination has had the immediate effect of arresting the progress of rinderpest in a herd, the cattle that have been successfully vaccinated, and they alone, escaping the disease. But further experience has proved that, after the effects of the vaccination have passed off, these animals are liable, on fresh exposure, to contract rinderpest, and to die of it.

The vaccinated calf belonging to Mr. Tollemache, of Dorfold Hall, which was exposed to the severe test described in my former communication, died of rinderpest on Thursday, the 25th ult., or the eighth day of the disease.

Two of the ten cows belonging to Mr. Tollemache which were vaccinated in December, at the time that six others died of rinderpest, were also seized with the disease on the 20th and 25th of January, and on the 25th the cow first seized was very ill.

On Jan. 15th the Earl of Airlie sent an ox and a heifer which had been vaccinated on Jan. 6th, and in which the vaccination had been successful, and also an unvaccinated ox, to an infected farm. On Jan. 29th the vaccinated one was dead of rinderpest, and the unvaccinated one was very ill with it. With the exception of slight cough, the vaccinated heifer had not presented any symptom of rinderpest, and was still to all appearances well.

On January 7th, Mr. Harper, surgeon of Holbeach, vaccinated two heifers. In both the operation was successful. On January 18th they were removed to two separate yards, where beasts were dying of the cattle plague. Both were taken with rinderpest on January 23d, the sixth day of exposure, and died on January 27th.

Other cases of an unfavorable nature were reported in my last communication; but perhaps the most conclusive experiment is that which has been conducted by professor Varnell at the Royal Veterinary College. Two cows which had been vaccinated in the country by Mr. Acton were brought to the College. Both of them showed signs of successful vaccination, and one of them on arrival had three good vaccine vesicles. On Saturday, January 20th, one of these cows was inoculated with rinderpest matter from a calf (that had contracted the disease by inoculation with diluted rinderpest matter from a sheep), and the other cow was shut up in a loose box with the same calf. Within twenty-four hours the calf died. Symptoms of rinderpest showed themselves in the first-mentioned cow on Thursday, the 25th, or the sixth day, and in the second cow on the following day. In the former case the disease appeared to set in severely from the first, and on Jan. 30th the animal died. On the same date the disease in the other cow appeared to be running a slower, but probably not less certain course.

The experiment announced last month of vaccinating eight cows, four of which had passed through rinderpest, while the other four never had the disease, has for the present proved a failure. The

vaccination was not successful in any of the cases, owing probably to the vaccine vesicle which supplied the lymph being too advanced.*

From what has been stated it follows that the hopes reposed in vaccination as a prophylactic against the cattle plague have not been realized. In a practical point of view, therefore, it matters little for the present whether the cattle plague be regarded as a form of small-pox or not. Our efforts to prevent it must still be restricted to absolute isolation of one herd of cattle from another, and to urge upon the Government and Parliament the necessity of completely suspending the movement of all live cattle throughout the country. But as a matter of scientific interest the variolous nature of the cattle plague is a subject still open for discussion.

To some, no doubt, the differences which unquestionably exist between the cutaneous eruptions of the cattle plague and of human small-pox will appear an insuperable objection to regarding the two diseases as in any way related; but in this opinion I am not altogether disposed to concur. Among the many points of resemblance already referred to, that of their morbid anatomy deserves their especial mention, and on this head I cannot do better than to quote the words of Dr. Bristowe, who has reported on the morbid anatomy of the cattle plague to the Royal Commission. Although believing the cutaneous eruption of rinderpest to be essentially different from that of small-pox, he writes as follows:—"No one acquainted with the morbid anatomy of small-pox could fail, on examining cows dead of cattle plague to be struck with the close resemblance which exists between these two diseases in regard to their morbid anatomy. Allowing for the absence from the human being of the first three stomachs of the cow, the description of the internal lesions observable in the cattle plague might serve exactly for the description of the internal lesions in small-pox. This fact struck me at the very first post-mortem of a cow on which I was engaged before even I had any suspicion that there was an eruption on the skin at all resembling that of small-pox."

Reference has already been made to the small-pox of sheep, which has an important bearing on the subject under discussion. This disease owes its name to the eruption that appears on the skin, which, however, differs in many important particulars from that of human small-pox. The papulæ, in place of being small and acuminated, are very large and flat; while the vesicles are rarely umbilicated, and seldom pass into pustules. "The papulæ, for instance," says Dr. W. Budd, "are much broader in the sheep, varying in breadth from that of a four-penny piece to that of a shilling; having the appearance of large flat warts, occupying the whole thickness of the skin, and embedded in it." Mr. Ceely, we are informed by Prof. Simonds, "when he first saw the ovine crusts, felt doubtful of the correctness of the term *pustule*, as applied to the eruption; and has satisfied himself that it is not essentially a pustular disease, but that it is *vesicular*." Prof. Simonds adds: "The formation of pustules, as we consider, ought to be regarded rather as an adventitious than an

* In the elaborate Report on Vaccine and Variola recently published by a French Commission, it is stated that, in order to vaccinate successfully from cow to cow, it is necessary to open the vesicle between the third and seventh day, and that when the lymph is most copious, on the eighth or ninth day, it has lost its virulence.

essential feature of the disease."* The eruption of so-called sheep's small-pox, then, is far from being identical with that of the small-pox of man. A more important ground of distinction remains to be considered. It has been satisfactorily proved that both vaccination and variolation have no power over the small-pox of sheep. The experiments of Mr. Marson and Prof. Simonds, conducted for Government on a most extensive scale, show that both vaccination and variolation of sheep, even when successful, in no way diminish the liability to or the mortality of ovine variola; and, what is even more remarkable, that a second action of the vaccine virus is fully equal to the first, by which it appears to be in no way influenced. Similar results have been obtained by Valois, Hurtrel, D'Arboval, and other French experimenters. The vaccine virus has no special action upon the organisms of sheep, as after successful vaccination they are still open to the influence of the vaccine virus, as well as to that of their own particular form of variola.† It is obvious, therefore, that what is called the small-pox of sheep differs essentially from the small-pox of man.

In cattle, there are grounds for believing that vaccination does produce a specific change in the constitution which interferes with the success of a second vaccination. Although there is a common impression that cows are liable to several attacks of cow-pox in the course of their lives, it is possible that the spurious has been mistaken for the true pox; and, in the experiments recently conducted in France by Messrs. Chauveau, Vienosis, and Meynet, a second vaccination always failed to take effect. These experiments, however, were not on a large scale, and require confirmation. But, on the supposition that cattle are liable, like sheep, to a severe and fatal form of small-pox, does it of necessity follow that vaccination ought to afford to them the same protection that it does to man from human small-pox?

The answer to this question involves considerations which strike at the very root of the ordinarily accepted views as to the relations between vaccinia and variola, and with regard to which, in the present state of our knowledge, it would be premature to form any decided opinion. Many, no doubt, will think it almost heresy to throw any doubt on what has long been regarded as a canon of medical belief; but, however unpleasant it may be to have old-established views in any way shaken, we must not shut our eyes to facts which have recently been brought to light. These facts must either be admitted, explained, or refuted. The current doctrine, which originated with Jenner, is that vaccinia is merely a mild form of human variola;‡ Jenner, in fact, named it "*variolæ vaccinæ*," or the small-pox of the cow. What was a matter of theory on the part of Jenner, is generally believed to have been converted into fact by the subsequent researches of Dr. Gassner, of Gunzburg, Dr. Thiele, of Kasan, in Russia, and of our countrymen, Mr. Ceely and Mr. Badcock.

* Simonds on Variola Ovina, pp. 78, 79. 1848.

† Report of Experiments made under direction of the Lords of the Council as to the Vaccination of Sheep. London, 1864.

‡ Certain of the arguments, indeed, in my former papers, are based on this doctrine. It is only within the last fortnight that the experiments recently performed in France have come under my notice.

According to the experiments of these gentlemen, inoculation of the cow with the matter of human small pox produces, not small-pox, but ordinary vaccinia, with which children may be successfully vaccinated. After many fruitless attempts, Mr. Ceely twice succeeded in arriving at this important result; while, during the last twenty years, Mr. Badcock has again and again derived fresh stocks of vaccine lymph from variolated cows, has vaccinated with such lymph more than 14,000 persons, and has furnished supplies of it to more than 400 medical practitioners.

The view now stated has not wanted opponents since the time it was first promulgated by Jenner. Even the late Dr. George Gregory, for many years physician to the Small-pox Hospital, with a full knowledge of Mr. Ceely's experiments, expressed himself thus:—"I demur to the theory of identity, and hold that small-pox and cow-pox are antagonistic affections—that cow-pox, instead of being, as Dr. Baron maintains, of a variolous, is, in fact, of an *anti-variolous* nature."† Dr. Gregory's opinion on this matter is strengthened by the following considerations:

1. It has been repeatedly found that, in persons vaccinated while small-pox is latent in the system, the two affections proceed simultaneously, and that lymph taken from a vaccine vesicle, with a concurrent small-pox eruption, produces in other individuals nothing more than ordinary cow-pox. Dr. Gregory mentions a case in point, where a lancet charged with lymph from the vaccine vesicle produced cow-pox, while another lancet charged with matter from a variolous pustule, formed with the vaccine areola, communicated small-pox. On the supposition that the poisons of vaccinia and variola are essentially the same, it is difficult to understand why they remain so distinct in the same body at one time.

2. In 1836 an American physician, Dr. John C. Martin, inoculated some variolous matter, taken from a pock upon the body of a man who died of variola, into a cow's udder, and subsequently vaccinated about fifty persons with matter derived from the cow. Most of those so inoculated were attacked with variola, and three died. The result caused great excitement and consternation. Dr. Martin was ruined and soon became insane. The facts were carefully investigated at the time by several men; but, for obvious reasons, have only been recently published.‡

3. The most important facts bearing on the question are contained in a Report published last year by a committee of the Société des Sciences Medicales de Lyon, and consisting of Prof. Chauveau and MM. Viennois and Meynet. The Report is entitled "Vaccine et Variole, nouvelle Etude Experimentale sur la Question de l'Identité de ces deux Affections," and contains the results of the most elaborate series of experiments on the subject that has yet been made. The conclusion arrived at is, that human small-pox and cow-pox are two distinct affections which are mutually antagonistic; and this conclusion is based on the following facts: 1. The inoculation of cattle with the matter of human variola produced in their experiments nothing like the local effects of cow-pox, but merely minute red

† Lectures on the Eruptive Fevers, 1843.

‡ Edin. Med. Journ., July, 1860, p. 74.

papules, which might readily have been overlooked, but which were proved to be specific, by the facts that cattle thus treated were insusceptible of vaccination, that a like effect could not be produced in vaccinated cattle, and that the affection could be transmitted from cow to cow and from the cow to a child. 2. When children were inoculated with variolous matter thus passed through the system of a cow, the result was not vaccinia, but a very modified form of variola, the eruption not being limited to the part inoculated, and being in two instances apparently communicated by infection to persons in health. The French experimenters are of opinion that Dr. Thiele and Mr. Ceely have obtained merely a modified form of variola, and not vaccinia, by passing the matter of human small-pox through the system of the cow. There are some grounds for believing that the "vaccine matter" obtained in this way by Dr. Thiele may be really a varioloid matter, inasmuch as he maintains that *the virus of human small-pox diluted with warm milk and transmitted through several generations of human beings, comes at length to produce results similar to what he has obtained by vaccination.* In one of Mr. Ceely's cases, also, the inoculation of the human subject with the fluid of a variolous vesicle in a cow was followed by a general papulo-vesicular eruption.* It is difficult, however, to reconcile the results arrived at by the French experimenters with the fact that the lymph obtained by Messrs. Ceely and Badcock by the variolation of cows has been used during many years in this country for the purposes of vaccination. Another remarkable circumstance is that the French experimenters seem to have succeeded in variolating cows according to their fashion without any difficulty; while both Mr. Ceely and Mr. Badcock have succeeded in producing what they considered essential—viz, a vaccine vesicle—in an extremely small proportion of the animals experimented on.†

It would be premature to draw any conclusion from facts of so contradictory a character recorded by experienced observers; bnt the circumstances now mentioned are not without importance in any discussion concerning the pathological relation of the cattle plague and small-pox.—*London Lancet*, July, 1866.

Obstetric Practice.

Art. XIV.—*"Retained Placentæ" in Abortions.* By C. B. Suckling, M. D., Senior Surgeon-Accoucheur, Queen's Hospital, Birmingham.

M. J., aged 29, married; fifth child; six months advanced in pregnancy; has hitherto carried her fœtus to the full time of utero-gestation. She was taken with uterine pains early on Saturday morning, February 9, 1866, which continued on and off until I

* Trans. of the Prov. Med. and Surg. Assoc., vol. viii., 1840, p. 403.

† The reader is also referred to a memoir by M. Auzias-Turenne, entitled: "La Variole et la Vaccine ne sont pas produites par un meme Principe Virulent. Recueil des Travaux de la Societe Med. Allemande de Paris" Paris, 1865, p. 101.

was summoned to see her on the following Monday at 10, a. m. I saw the patient at 10.30, and found she had had pain more or less intense during the previous three days. She had lost but very little blood. A vaginal examination, which is the only one to guide us to an accurate diagnosis in these cases, was at once made. It revealed the presence of the fœtus in the vagina, and a patent state of the external opening of the os uteri. On removing the fœtus, the umbilical cord became detached from the placenta, three-fourths of it being left adherent to the fœtus, and the remaining fourth to the after-birth. This severance was afterwards found to be owing to a state of decomposition which had set in apparently at the time when the pains had been first felt by the patient. As the after-birth could not be felt, and as there was no flooding, after waiting a little time, I adopted my usual course—plugged, and left the patient, promising to return in the course of seven or eight hours; but I requested the attendant to send for me immediately, should anything occur of an alarming nature during my absence. When I visited the patient again at the expiration of eight hours, I found she had been pretty comfortable, free from pain, and had been soothed by sleep. She told me she had suffered occasionally from pains, but they were of short duration, and had given her but slight uneasiness. On removing the plug, the placenta came away with it, accompanied by a few coagula of blood. There was very little flooding. It may be as well here to remark that the plug I used consisted of shreds of linen—the only available substance at hand.

This case I record as one of very many to illustrate a practice I am in the habit of pursuing in the treatment of cases of abortion, in which the retention of the placenta is a source of trouble and anxiety to the accoucheur. Young practitioners especially have the notion that, at all risks, the placenta should be removed before they leave the patient, and that she is in imminent jeopardy if it be permitted to remain longer than half an hour, or at the most three hours, and they are apt—too apt when nature does not assist them in this much-to-be-desired end—to summon to their assistance the ready resources of art, so abundantly supplied them by those skilful and ingenious obstetricians whose mechanical inventions for this purpose are most beautifully and cunningly contrived, and who quite ignore the maxim that "meddlesome midwifery is bad." There are many such instruments described in the various works on midwifery. The best of the kind, I think, is the "wire crochet" of Dr. Dewees. With this we could not do any harm, if we used the commonest precaution. But I maintain that, in the majority of cases, the finger of an expert practitioner and the *vis medicatrix naturæ* are more to be depended upon than any artificial appliance.

When the placenta can be felt over the os uteri, the finger may be passed around it, and by a little skilful manœuvring it may readily be detached and extracted; but I would not advise any prolonged attempts to dislodge it, as by so doing the material parts may be much irritated and the patient's suffering greatly enhanced.

Plug and leave the case in the hands of nature. The kind of plug you should use is a matter of no very great moment so long as it is of a soft and yielding material, adapted to accommodate itself to the parts. In cases of emergency, where no time can with safety be

wasted, you will be glad to avail yourselves of a good silk handkerchief, and this I have found to make an excellent tampon, answering every needful purpose. Cotton wool is, perhaps, preferable. Small pieces of sponge, about the size of a walnut, to which are attached pieces of string, are those more generally recommended. One great objection to them is, that when they become saturated with the fœtid discharge they become obnoxious to the patient, and are liable to promote the accession of febrile symptoms. To prevent this, they must not be kept too long in the vagina. Whatever plug we may employ, we should take care that the whole of the vagina be well filled, but not to such an extent as to cause, by distension, pain—(I may remark here that, in midwifery operations we should always endeavor to avoid causing pain to the mother)—but so as to prevent the discharge of blood from the uterus externally. Some may be haunted by the idea that, although the plug is *in situ*, internal hæmorrhage may take place to an alarming extent, but I do not see how this can occur to any great degree, when we bear in mind that there is a small uterus, not large enough to admit the hand, partly occupied by the placental mass, and the os uteri blocked up by the artificial plug. In my own practice, when I adopted the treatment I am describing, I have seldom met with hæmorrhage that either caused me any anxiety or created much depression of the system of the mother. To recapitulate, I would recommend, in the treatment of cases of retained placenta in abortion, the following points to be observed:—1. If it be possible, remove the placenta by the finger; the sooner this is effected the better, but do not rashly act, and do not let the attempt last too long, as you have nothing to fear by its retention. 2. Plug, and use that which you have readiest at hand, but the sponge plug, in my opinion, is the best. 3. Wait eight, ten, or twelve hours before you remove the plug, and you will generally find, on removing it, that the after-birth either comes away with it, or it is found lying in the vagina, from whence it may be easily withdrawn.—*Med. Times & Gazette*, July 14, 1866.

Art. XV.—*Dressing of New Born Infants.* By W. B. Fletcher, M. D., Indianapolis.

If there be one custom of time-honored folly, which we have continued to this day in the "lying-in chamber," it is that absurd and cruel system of the first dressing. There is no reason for quoting from the most ancient authors to find absurdity upon this point, when our most recent text-books and lecturers give almost the same directions. But even if they did not, how many physicians ever personally attend to this important point, whereby the comfort of the child and mother are all at stake. In most cases, as soon as the child is born and the cord divided, it is tied and the baby given to an employed nurse, some wise neighbor or friend. The question of "What will she do with it" may best be solved by watching her. First she huddles it up in an old shawl or other garment. She is careful to

cover its head, as though it were a young puppy she would smother; or rid the world of an infant cat. In a few moments, some one brings water, soap and towels, and also a heap of old linen, and a trunk full of new. The good woman now turns to the blazing fire, or the hot stove, that the baby may not take cold, and while the youngster implores with yells and cries, she bakes its tender skin on one side while she dabbles its head, eyes, mouth and body with a vile solution of frequently very bad soap. After this ceremony has been past (it matters not whether the child be cleaner than before) she turns her attention to the cord, upon which she frequently deposits, slyly, some pestiferous saliva, "Its healin'," she says, and now she follows authority. 1st. She cuts or burns a hole in the centre of a bit of cloth, through which she draws the cord; 2nd. She places a rag upon this; 3rd. A rag upon that, and 4th. She puts on a "binder." Now it is upon this operation she prides herself, if she be a hireling, that is the closeness and compactness with which she can pin the binder round the expanding body of the infant; 5th. She puts on a little garment, called a shirt, which is in fact without body, neck, or sleeves, as far as protection goes; 6th. She puts on the "square" with more pins; 7th. She pins on a "waist" with a long skirt; 8th. Another waist with a longer skirt; 9th. A dress. And now the baby is presentable. The doctor sees it's all right, and goes home. He hears not within an hour the stifled screams of compressed lungs, that with every breath are expanding the chest, and the nurse wisely says it appears "colicky," for which it must be drenched with some damned decoction of catnip, sling, brandy, laudanum, water and molasses, etc.

The next visit the nurse swears it's a good child, only a little "colicky," but she can cure that, and away the doctor goes, where he can not hear the little one cry, and see it dosed for screaming on account of the "cord" having become a half putrid, half drying mass, glued and ulcerating to the tender belly.

This picture may be overdrawn for some cases, or for some countries (if there be any), where professional nurses are selected for their intelligence, and not from the most "vulgar ignorant." One thing I am sure of, and that is, upon carefully examining, you will find some of the above named outrages, if not all of them, in force at once.

In my experience, adopted in some sixty cases, I have found the following method of procedure give the most comfort to all hands, by giving the baby no excuse for those cries, which are hardly ever heard if an infant is not uncomfortable.

My baby is first quickly washed by oiling the hand and rubbing the parts to which the secretions have adhered, and then with a soft cloth, soft water and trace of castile soap, and frequently with warm water alone, the infant may be cleaned. Then I begin dressing. 1st. A bit of lint or linen, two inches square, is tied closely upon the end of the cord like a cap; 2nd. The square, or diaper, of soft and old material, is put on loosely with a diaper pin; 3rd. A fine warm flannel gown (like a woman's night dress), with long sleeves, and coming below the feet, is put 'on, and thus the baby is quickly and comfortably dressed, and placed in its mother's arms, where the

temperature of her own body is food and strength for her new-born babe, until the milk is secreted.

Let any physician try this plan, and he will meet with opposition from every old lady in the land. "Why, doctor, its bowels will burst out when it cries, if you don't pin a binder on!" and a number of similar excuses, for not being directed by the physician. But the physician will be rewarded by finding the infants more clean, sleeping more, and eating more than when uncomfortably dressed, and I believe less liable to umbilical hernia and ulceration about the cord. I have known children rescued from apparent suffocation by simply unpinning a close binder.—*Cincinnati Lancet & Observer*, July, 1866.

Art. XVI.—*Abstract of a Paper on Procidentia Uteri:* By Dr. J. Marion Sims, Honorary fellow of the Obstetrical Society.

[Several separate and independent conditions must exist in a case of procidentia uteri. Thus, there must always be a broad public arch, with very divergent rami and a relaxed perineum; and then the axis of the uterus must be turned back in a line with that of the vagina and the pelvic outlet; in other words, there must be a retroversion. With the uterus anteverted, a procidentia is utterly impossible, be the attendant circumstances what they may.—Ed. Braith.]

Huguier has written extensively on procidentia uteri, and I believe he was the first to point out the distinctive characteristics of its anatomical peculiarities. He found elongation of the cervix in all cases, either above or below the insertion of the vagina; and he suggested and performed amputation of the neck of the uterus in every case, and with great success.

I amputate the cervix only when its lower segment is too large or too long, and projects so far into the vagina as to present a mechanical obstacle to the retention of the uterus *in situ* when replaced. If there should be elongation of the infravaginal cervix, amputation is the remedy; but we often find procidentia without any extraordinary elongation of the infravaginal portion of the cervix. There is then nothing to amputate.

In these cases Mr. Baker Brown, Dr. Savage and others contract the vulvar outlet by the perineal operation; but generally I prefer to narrow the vagina above, which usually very effectually retains the uterus in something like a normal position within the pelvis.

The idea of narrowing the vagina is by no means new. I suppose we may justly claim it for the great Marshall Hall. However, I do not think the operation ever succeeded till my own day, and this success is due wholly to metallic sutures.

The author then described a case in which he observed that the descent was not by the protrusion of the cervix uteri, but invariably by a prolapse of the anterior wall of the vagina, which always preceded the cervix, and drew down the uterus. He noticed also that, by pinching up the anterior wall of the vagina into a longitudinal fold, the parts had no tendency whatever to come down; and that it was impossible for the patient to force them down, if the anterior wall of the vagina was prevented from descending. Hence the idea

of removing the redundant portion of the anterior wall of the vagina; but "it did not occur to me to operate simply by removing strips of vaginal mucous membrane. I seriously proposed to this lady to make a complete vesico-vaginal fistula, by removing at one blow, as it were, a large portion of the base of the bladder with the anterior wall of the vagina, She agreed to it, and it was adopted."

Proposing to excise the anterior wall of the vagina, I hooked it up with a tenaculum, pulled it well towards the posterior wall, and grasped the base of the mass thus elevated with a pair of curved forceps made for the purpose, acting on the principle of Ricord's phymosis forceps, which held the parts firmly embraced, while with scissors cutting under the forceps I removed, at once, a very large portion of the anterior wall of the vagina. The portion removed measured two inches and a half transversely, but two inches and five-eighths longitudinally, and was very thick. The chasm made by this operation was fearful, the lateral retraction of the divided edges being so great as to present at a superficial glance some difficulty in bringing them together by sutures. There was, however, no trouble whatever.

The bleeding was not profuse; but I at once rapidly filled the chasm with cotton, to stop the hemorrhage by pressure. A few few minutes sufficed for this; and then the tampon was removed for the purpose of closing the edges of the opening by transverse sutures. My surprise was equalled only by my delight, when I found that I had not succeeded in doing what I intended; for instead of excising the base of the bladder with the anterior wall of the vagina, I had, by the tenaculum, simply raised the hypertrophied vaginal tissue up between the blades of the forceps, luckily separating it from the lining membrane of the bladder, which remain intact. Thus, by a mere accident, the operation was really far better than if I had succeeded in accomplishing what theoretically I proposed to do.

The lateral edges were brought together longitudinally by silver sutures passed transversely. She was soon well, and is so to this day. The operation was done nine years ago. This method of operating was continued till 1858, when an elderly woman, with an enormous procidentia of fifteen or twenty years' standing, was sent to the Woman's Hospital by Dr. Duane, of Schenectady. It was a very bad case indeed. I operated by the plan of simple denudation over an immense surface; the parts were brought together and healed kindly; but I had not removed tissue enough, and there was a considerable cystocele left, which required that she should use a pessary; and then it was that I devised another method of operating. Instead of the broad scarification of the anterior wall of the vagina, I simply removed the mucous membrane in the form of a V, the apex being near the neck of the bladder, the two arms extending up on the sides of the cervix uteri. These two denuded surfaces were brougt together by silver sutures passed transversely, thus making a longitudinal fold narrowing the vagina and crowding the cervix backwards. This simple operation was thus repeatedly performed, and always successfully, by Dr. Emmet and myself, at the Woman's Hospital, from 1858 to 1862, when I left New York.

In Paris I had occasion to perform it for Sir Joseph Olliffe, on an

old lady sixty-five years of age, who had had procidentia for twenty years. The parts united; the uterus was held in its place, and she returned home in a fortnight. Her general health was very feeble, in consequence of a long residence in India; and in two months the whole cicatrix gradually gave way, and the procidentia was reproduced. This was the first and only case of failure that I had ever seen after this method. The operation was subsequently repeated; but this time, instead of a V-shaped scarification, it was made in the form of a trowel, the point presenting below, the shoulders above in the anterior cul-de-sac. The denuded surfaces were brought together by transverse silver sutures. A small portion of tissue was left undenuded, for the purpose of permitting the escape of any secretions naturally forming in the shut pouch.

It is not my intention to draw a parallel between this and the perineal operation for procidentia. I only wish to add another resource to our means of permanent cure in this distressing affection. So far then as mere surgical resources are concerned, we have three processes from which to choose; always, of course, adapting this course to the peculiar exigencies of the case.

1st. Amputation of the cervix, as recommended by Huguier, when its infravaginal portion is too long. I have often seen procidentia cured by this alone.

2d. The perineal operation, as performed by Mr. Baker Brown, Dr. Savage and others; and

3d. The operation of narrowing the vagina by the trowel or triangular-shaped denudation on its anterior wall.

Dr. Sims, in reply to Dr. Aveling, said he left the undenuded portion of mucous membrane near the cervix uteri, because this was the most dependent part when the patient was lying down. In reply to other speakers, he said that no one method of operating could be applicable under all circumstances to all cases. If there was a lacerated perineum it was proper to restore it. If there was elongation of the infravaginal portion of the cervix, then the proper operation was amputation of the cervix, and this would probably be all that was necessary in such cases. His friend, Dr. Eastlake, had shown him a case of procidentia, two or three days ago, when it depended entirely upon hypertrophic elongation of the lower segment of the cervix, which projected at least two inches below the insertion of the vagina. This patient had been the rounds of many of the hospitals in London, and nothing had been done for her. The perineal operation and his own method were each equally powerless to remedy such a case. Amputation here was the only resource. He had the pleasure of operating on a patient of Dr. Henry Bennet's a few months ago, where the procidentia depended upon hypertropic elongation of the cervix. The operation of amputation alone cured the case. In the majority of cases of procidentia—in all those where a vagina-cystocele formed the first stage of descent—he was satisfied that the operation he had described, viz., that of narrowing the vagina by forming a longitudinal fold of its tissue on the anterior surface, reaching from the neck of the bladder to the neck of the womb, would be one of the safest, simplest and best. As to mechanical means for such cases, he had seen the instruments fail which Dr. Williams had shown us. He had seen cases in which Hodge's

lever, Meigs's ring, globes, discs and air balls were all useless. In some cases Zwanck's pessary would answer; but no instrument could be compared with his simple operation for a radical and permanent cure. Besides this, there were many who could not bear any mechanical apparatus. In old women the vagina was often so delicate and tender that none of the ordinary forms of pessaries could be borne. In such cases, if the patient would not submit to the operation, and could not wear an instrument, there was still one thing left to palliate her condition, and that was, she could wear a tampon of cotton, the size of an English walnut. It should be moistened with glycerine, and introduced every morning, to be removed at night.—*Obstetrical Transactions*, Vol. vii., 1866, p. 238.—*Braithwaite*, July, 1866.

ART. XVII.—*On Enlargements of the Uterus which follow Abortions, Premature or Natural Confinements; with Cases:* By DR. SNOW BECK.

[Abstract of a paper read before the Obstetrical Society of London]

THE author remarked that these enlargements had been long recognized by pathological anatomists, and quoted some microscopical observations by himself, and communicated to the Medical Society of London in 1851, which showed that the pathological condition essentially consisted in an enlargement of the muscular tissue of the uterus, without the presence of any inflammatory or heterologous deposits. The causes were considered to depend chiefly upon —(1) a want of complete and persistent contraction of the uterus, which permitted an increased circulation of blood in the gravid organ, and interfered with the changes which took place after parturition; and (2) on the partially developed state of the uterine tissue in abortion, which appeared to be unfavorable to the development of those changes necessary to its complete reduction in size. The enlargement of itself gave rise to few and comparatively slight symptoms, unless it existed to such an extent as to be felt as a tumor in the hypogastrium; but it rendered the patient liable to profuse hemorrhage, coming on suddenly and without appreciable cause. These enlargements might exist for many months, or even for some years, without any symptoms of importance; but from the recurrence of the catamenia, or other causes, congestion of the enlarged organ was gradually induced; or congestive inflammation, which may be either of the whole or of any portion of the uterus, might take place, the usual symptoms of uterine affection being then present. Amongst the subsequent changes which took place were anteversion and retroversion, with more or less bending of the organ, which reduced it to an indolent state, and rendered it very rebellious to treatment. The modification of symptoms thus produced was shown by the cases recorded, and the physical examination of the organ detailed. The author found that in these cases the uterus was equally enlarged,

smooth, pyriform, the cavity enlarged, and the orifice open. The sound readily passed to an extent varying from three to five or six inches. When inflammation was added the organ became tender, the arteries were felt to beat with more or less force, and the interior became very sensitive. Subsequent and various alterations were made: the lips became enlarged, often lobulated, projecting into the vagina, red and raw in appearance, and bounded by a distinct line, which marked the division between the mucous membrane of the vagina and that of the uterus. It was this condition of the organ which had been so frequently described as ulceration, although no such morbid change actually existed. With respect to the treatment, various cases were recorded, showing the importance of injecting the cavity of the uterus with astringent lotions, and the safety with which it could be done, provided the actions of the uterus were perfectly quiescent. The cavity of the uterus being enlarged, and the orifice open, impregnation readily took place; and the physiological changes which followed were decidedly the best means of restoring the organ to the healthy state. Congestion or inflammation, when present, would have to be met by the usual means; and when the uterus was in the hardened, modified condition, in addition to the ordinary means of treatment, it would require some local stimulant to rouse the local action, and enable the other remedies to act. For this purpose cauterizing the lips with potassa cum calce had been generally employed.

Dr. Barnes observed that he continued the practice of injecting a solution of perchloride of iron into the uterus to arrest hemorrhage after abortion and labor, and with excellent effect. He no longer dreaded flooding as of old. So far he could illustrate by experience the safety of intra-uterine injections. But he thought a more desirable method of applying fluid styptics or caustics to the inner surface of the uterus would be by swabbing; that is, soaking a bit of sponge or cotton-wool in the liquid, and passing it into the cavity. He had contrived an apparatus for this purpose. An excellent plan of applying solid nitrate of silver was one he had learned from Sir Benjamin Brodie. That eminent surgeon dipped a silver probe in fused nitrate of silver, thus obtaining a thin stratum, which could be passed freely and safely into a sinus. This was the safest way of cauterizing the inner surface of the cervix or body of the uterus.

Dr. Greenhalgh said that Sir. J. Y. Simpson had described these enlargements under the terms of subinvolution, or incomplete involution, of the uterus. He (Dr. Greenhalgh) quite agreed with the author as to their frequency and the obscurity of the local symptoms. He regarded it as a common cause of sterility, but that where impregnation resulted it was always curative, except when abortion ensued. In this disease he had found the uterus enlarged, flabby and ill-defined, the sound entering an enlarged cavity four inches, and even seven inches and a half. He considered that hemorrhage was not a frequent symptom in this disease, and, where it did exist, was mainly attributable to some affection of the lining membrane of the uterus. He advised, when hemorrhage was frequent or profuse, so as to affect the general powers and resist the ordinary treatment, the injection of the compound tincture of iodine into the uterus; but laid great stress upon the importance of first freely dilating the

internal os uteri, which dilatation in itself was more or less curative. He had found resolvent and sedative pessaries of value, as also douches of tepid and cold water with a Kennedy's syringe, and medicated fluids. He likewise advocated the administration of tonics, with the iodide of potassium and liquor of the ergot of rye, and alterative doses of bichloride of mercury. He relied greatly for success upon improvement of the general health, out of some impairment of which this affection frequently originated and persisted.—*Lancet*, March 17, 1866, p. 288.—*Braithwaite*, July, 1866.

ART. XVIII.—*New Method of Inducing Premature Labor.* By LUMLEY EARLE, M. D.

THE plan which I am going to submit to the notice of the profession is not intended to supersede all the well-known modes of inducing labor, and probably a method never will be devised which will be equally suitable, although it may be applicable, in all cases.

Medical men often have what they call "a favorite" method of performing the operation, and adopt it in all instances; this I believe to be a mistake. The plan selected should depend upon the nature of the case—*e. g.* rupture of the membranes is preferable in severe cases of general anasarca, which disease is generally associated with dropsy of the amnion, and in accidental hæmorrhage. Ergot is most suitable in nervous women who obstinately refuse the use of "instruments," or any local means. Kiwisch's method of injecting water forcibly against the os uteri, ought to be exclusively used in those rare cases in which such extensive deformity exists, or so large a tumor fills up the cavity of the pelvis, that the os uteri cannot be reached by the finger; and in retroversion of the uterus, if a catheter or other instrument cannot be insinuated within that organ. Dr. Barnes' india-rubber bags are most useful in all instances where it is necessary to commence and terminate the labor in a few hours, as in placenta prævia, puerperal convulsions, etc. Separation of the membranes from the wall of the uterus by passing an elastic catheter between the uterus and the membranes, and either leaving it there, or removing it after having slightly moved it from side to side, is best adapted to cases in which there is only a moderate contraction of the brim of the pelvis.

The new plan is intended to remove certain objections attached to the two modes of inducing labor with an elastic catheter. The objections are these: If the catheter is simply passed between the membranes and uterine wall, and moved from side to side, then removed, it does not always induce uterine action, and it requires more manipulative skill and experience than most practitioners possess. In the hands of Dr. Arthur Farre, it has proved most successful; but in the hands of others, it has often failed. If the catheter is passed in a similar manner, and left in the uterus, and tied to the patient, although it is much more certain in its action, the patient has to stay in bed until labor comes on, as it would not be altogether safe for

her to walk about with the instrument retained. It is very advisable that the patient should be able to go about her ordinary duties until uterine action sets in, because her thoughts then are not so liable to be fixed exclusively upon the recent operation or the forthcoming delivery.

The principle upon which the new method acts, is exactly the same as that of the catheter—viz., by separation of the membranes and irritation. The instruments consist of:

1. One or more pieces of native india-rubber tubing, one end of which is closed and the other open. To the open extremity is attached a piece of strong thread, to enable the tube to be removed when necessary.

2. A whalebone sound or guide fourteen inches long, with a tapering extremity, which must be made to fit the tube so loosely that, if the two were inverted, the tube would fall off immediately. At the same time, the point of the guide must not be made so fine as to endanger the structure of the india-rubber.

Labor should be induced as follows: Place one of the tubes on the tapering end of the whalebone guide, which must be held lightly by the right hand. Then, guided by one or two fingers of the left hand, pass the tube into the os, and gently push it on between the membranes and uterine wall for several inches, as far as it will go readily.

No more force should be used than is required in passing a catheter into the female bladder. If any resistance be met with, it should be overcome by passing the tube in another direction. Lastly, slowly remove the whalebone guide, leaving the tube in the uterus. One or more tubes may be passed in the same way, but in a different track. The patient need not be undressed, and, after remaining quiet for about an hour, may get up. The hydrostatic pressure of the liquor amnii below the india-rubber tube or tubes will prevent them from readily falling out of the uterus. If in twelve hours the tubes are still in the uterus, and labor pains have been felt, they may be removed by pulling the string. The string should be just long enough to hang about three inches out of the vulva, and the patient should be warned not to let it get entangled in her clothes—in fact, it would be better to pass it into the vagina.

The advantages of this method are:

1. Its safety both to mother and child. The india-rubber tubing is soft and compressible, and during its passage into the uterus is much less likely than the catheter to rupture the membranes on the one hand, or to injure the uterus on the other.

2. The patient can walk about, retaining this small foreign body in the uterus, without any risk.

3. The operation is very easy to perform, and does not require more than ordinary skill.

4. It is not only safer than the catheter left in the uterus, but probably more efficient than the catheter when it is merely passed into the uterus, and withdrawn after having been slightly moved from side to side, as it acts both by separating the membranes and also by irritation, not set up through any offensive emanation due to decomposing fluids, but by the mere presence of a foreign body.

5. More than one tube can be passed into the uterus with safety,

thereby separating the membranes more extensively, and setting up irritation in more than one place.

6. The whalebone guide is preferable to a metallic sound, because on account of its flexibility, it facilitates the introduction of the india-rubber tube into the uterus. If any obstruction is met with, the whalebone immediately bends, and the smooth and yielding nature of the india-rubber causes it to take a more favorable direction.

I can only bring forward at present one case in proof of its efficiency; and although it is unadvisable in most instances to urge the value of a new method of treatment from its success in one case, I consider this new plan to be an exception to the rule, as it is founded upon an old principle which has been well tried and approved of. From what I knew of the action of the catheter in the uterus, I felt as certain as I could be, without trying it, that it would succeed, and I should have been surprised if it had not.

Mrs. L., aged 37, is a married woman, residing in Newhall street. The following is her obstetric history: The first two deliveries were good. The third, fourth, and fifth were very bad, each increasing in difficulty, but not instrumental. The sixth and seventh labors had to be terminated by craniotomy, extraction with the forceps first having been attempted. In the eighth pregnancy premature labor was induced by Mr. Clay, of this town, and delivery effected by turning. In the ninth and tenth pregnancies I brought on labor both times by passing an elastic catheter between the membranes and the uterus.

The present was her eleventh pregnancy. According to her calculations she had gone just seven months. I first intended to have waited at least a fortnight before performing the operation, as her children at the seventh month were unusually puny and weak, and either were stillborn or died within twenty-four hours. On examination, however, I found her to be very large, as if she had very nearly gone her full time. Only one fœtal heart could be heard beating, but there appeared to be two placental bruits, one at each side of the fundus. The condition of the os was such as to confirm the patient's opinion that she was in the commencement of the seventh month of gestation. My idea was that she was either carrying twins, or that there was dropsy of the amnion. Not feeling certain, and fearing lest she should have miscalculated, I thought it would be better to induce labor in a few days. Accordingly, on Saturday, June 9, at 9:30, a. m., in the presence of Mr. George Jones, who kindly gave me the benefit of his advice, I passed up two india-rubber tubes between the membranes and the uterus. This was very easily done, and the patient did not complain of pain. At 12, m., while walking about, one of the tubes came away. In passing the second tube, I did not take particular care to pass it in a different direction from that of the first, and it probably passed along the same track, and, not being far from the os uteri, more readily came away. At 7, p. m., the pains commenced, and were repeated at intervals of about half an hour. At 10½, p. m., I removed the remaining tube. Like the first, it was full of blood mixed with a sero-gelatinous material, and there was also a slight discharge of the same fluid. No particular change was noticeable in the condition of the os. On visiting her next morning at 11:45, I was informed that the

pains now came on every quarter of an hour, were strong, and lasted for some considerable time. The os was somewhat dilated, but not sufficiently to enable the presentation to be made out. There was a slight brownish discharge, which appeared like blood, which had undergone a certain amount of extravasal change, mixed up with a gelatinous secretion. It was not offensive in the least. At 6, p. m., I was called to see her. The pains were recurring every five minutes, and the os was dilated to the size of a florin. The finger could not reach the presentation in the ordinary way, and therefore I did what I always do when uncertain as to the position of the child — I passed up the hand into the vagina and felt the head presenting. At 9, p. m., the os was fully dilated. The membranes were very tough, and I was obliged to rupture them with Lee's trocar. The child was born naturally at 9:40; it was alive, but very small and feeble. On examination I felt the head of a second child presenting. The pains soon recommenced, and each was attended with severe hæmorrhage. I then ruptured the membranes, which were also so tough as to require the use of Lee's trocar. As the hæmorrhage continued notwithstanding, and the head was still high up, not apparently making any progress, I thought it advisable to deliver by turning. The second was stillborn, and the first died two hours after; both were males. It was unfortunate that the case turned out to be one of twins, as of course the children were smaller and more feeble than if it had been a single birth. The mother made an uninterrupted recovery.—*Medical Times & Gazette*, July 14, 1866.

Materia Medica and Pharmacy.

Art. XIX.—*Phytolacca Decandra*: By A. W. Griggs, M. D., West Point, Georgia.

THE use of the root and berries of the phytolacca decandra, as a domestic remedy, and reputed therapeutic value of the same, vouched for by many medical gentlemen of standing in the profession (and also by those not altogether orthodox), induce me to resume the pen, and venture once more before your readers. You will find in perusing the following report, that a certain train of symptoms was observed, more like those produced by nux vomica and its preparations than any that have yet been described, as resulting from the use of the poke. This will of course be a point of interest to the therapeutist.

Without further preliminaries, allow me to state, that on the morning of the nineteenth of February last, at eight o'clock, I visited the family of Mr. Wilson, nearly a mile distant, and was invited to examine and prescribe for his child—a male mute six years of age. Was informed that an hour or so previously he had swallowed a

small quantity (fluid drachms two or three) of the tincture of the root of the common poke. His extremities were stiff; hands firmly shut; feet extended and toes flexed; eyes bleared and dancing, pupils contracted, inferior lids drawn down; teeth clenched; lips everted and firm; muscular rigidity was general, and opisthotonos established. The circulation numbered eighty-five beats per minute; pulse soft and unresisting; temperature nearly natural; the respiration difficult and oppressed; mucous râle distinctly audible anywhere in the room. The contraction of the *masseters* precluded the idea of addressing remedies per orem, and the amount of mucus in the bronchia that of administering anæsthetics. A boy was dispatched to the office for cupping case and mustard; returned at nine o'clock. During the hour I had noticed increased muscular rigidity generally, with convulsive action of the muscles of the face and neck (the chin drawn closely down to the sternum); which condition would last five or ten minutes, to be succeeded by partial relaxation, and return in twenty minutes more, with the same violence. Cold had been applied to the scalp, and I now proceeded to cup him freely over the temples, the cervical and dorsal spine, and subsequently applied a sinapism from atlas to sacrum. A stream of cold water was now gently poured upon the head, almost constantly for an hour, when the symptoms began to abate, the muscles gradually losing the *tetanic* spasm, and complaint was made of the mustard. At noon he was able to drink a cup of sweet milk which was given. He then slept twenty or twenty-five minutes (which he had not done before), and was awakened by slight jerking and twitching of the muscles, especially those of the inferior extremities. He also made signs indicating pain in the back of the head and in the stomach. The water was reäpplied, and another cup of milk given. The head was then enveloped by wet towels, which were frequently changed, and the milk allowed *ad libitum*. At four o'clock he again fell asleep, and rested quietly for an hour and a half. The distressing symptoms had now almost entirely disappeared, and I left the patient, having first ordered a dose of castor oil to be given at bedtime. On the following day the little boy was up and frolicsome, although sore and somewhat stiffened. Nothing more was prescribed, and he recovered without a return of any of the previously mentioned symptoms, and there was no sequela. In conclusion, I think it proper to state that there was retention of urine for ten hours, and that neither emesis nor catharsis took place in this case, until the latter was prompted by the use of castor oil; further, the slightest nausea was not at any time observable.

Having positive proof that the patient had taken the drug, and nothing else—not even breakfast—I was at first perplexed, knowing that such symptoms in general had not been, before, ascribed to the use of the phytolacca. [See U. S. Dispensatory.] Now was this an idiosyncratic case? Ground is here left for experiment and speculation. From the views which I have long entertained as to the pathology of rheumatism, and the known efficacy of the phytolacca in controlling it, after the acute state has passed, I am greatly inclined to believe that the symptoms referred to in the case described were such as might have been reasonably expected to occur. I am free to admit that we have for some time been at sea respecting the

nature of rheumatism; and I cannot, in this article, do more than allude to the fact that, agreeably to my experience, that plan of treatment is most successful which is based upon the idea or belief that the *medulla spinalis* is at fault. Therapeutics often dissipates the darkness of pathology, although the latter, when understood, invariably should direct the former. Thus you may understand that, if the case here reported might be taken for a criterion so far as the specific action of phytolacca is concerned, the pathology of certain forms of rheumatism would be clear. I am apprised that caution should mark every step in science—that we should not build on an insecure foundation—and as before mentioned, that there is here room for experiment and speculation; but, impressed by the action of phytolacca in this case, and knowing its value in treating rheumatism, and believing rheumatism for the most part due to disorder of the cerebro-spinal system, I cannot refrain from looking further on, to inquire whether the tincture of the root of phytolacca decandra may not some day be to strychnia what the tincture of veratrum viride is now to tartarized antimony.—*Atlanta Med. and Surg. Jour.*, July, 1866.

Art. XX.—*A New Remedy in Gonorrhœa.* By J. S. Prettyman, M. D., of Milford, Del.

In July, 1859, while narrowly observing the effects of oil of erigeron administered in a fearful hæmoptysis, I was led to suspect that it would prove a useful remedy in the treatment of gonorrhœa. Acting upon this presumption, I immediately commenced giving it to a patient then under my care, in whose case all the vaunted specifics had most signally failed. He improved at once, and was speedily cured. Since that date I have prescribed it in about fifty cases, with unvarying success. It arrests the discharge in about seventy-two hours, and effects a cure in from six to eight days. I do not recommend it as a specific in all cases, but design merely to bring it to the notice of the profession as an exceedingly valuable medicine in this disease. Of course all scientific medical practice is based upon the well-known pathological condition of the structures involved, and this is our unerring guide. When, in recent cases, the urethral inflammation is severe, my plan is to precede the remedy with a full dose of some active hydragogue. A good formula is: ℞.—Pulv. sennæ ʒij; pulv. jalapæ ʒj; pulv. aromaticis gr. x. M. Add a gill of boiling water and a teaspoonful of sugar, and, when sufficiently cool, agitate, and swallow at a dose. As soon as this operates, give ten drops of the oil on sugar, and three hours later a full dose of spts. æther. nit. in infus. altheæ, and so on every three hours alternately, until the urethral irritation is allayed. Then leave off the latter, and continue the oil until the cure is complete. If the case is not recent, or there is but little urethral irritation, the oil alone is sufficient.

I have used it also in combination with copaiba and other articles,

and found such preparations to answer a good purpose, but no better than the oil alone.

The oil which I use is reputed to be that of the *Erigeron Canadense;* but I presume that from the *Philadelphicum* is equal, if not superior, for this purpose.—*Am. Jour. Med. Sciences,* July, 1866.

ART. XXI.—*Rhigolene, a Petroleum Naphtha for Producing Anæsthesia by Freezing.* Read before the Boston Society for Medical Improvement, April 9th, 1866. By HENRY J. BIGELOW, M. D., Professor of Surgery in the Massachusetts Medical College.

THE above name is proposed, as convenient, to designate a petroleum naphtha boiling at 70° F., one of the most volatile liquids obtained by the distillation of petroleum, and which has been applied to the production of cold, by evaporation. It is a hydrocarbon, wholly destitute of oxygen, and is the lightest of all known liquids, having a specific gravity of 0.625. It has been shown that petroleum, vaporized and carefully condensed at different temperatures, offers a regular series of products which present more material differences than that of their degree of volatility, and that the present product is probably a combination of some of the known products of petroleum with those volatile and gaseous ones, not yet fully examined, and to which this fluid owes its great volatility. A few of these combinations are already known in trade, as benzolene, kerosene, kerosolene, gasolene, etc., all of them naphthas, but varying with different manufacturers. I procured, in 1861, a quantity of kerosolene of four different densities, and found the lightest of them, the boiling point of which was about 90°, to be an efficient anæsthetic by inhalation. When it was learned here that Mr. Richardson, of London, had produced a useful anæsthesia by freezing through the agency of ether vapor, reducing the temperature to 6° below zero, F., it occurred to me, that a very volatile product of petroleum might be more sure to congeal the tissues, besides being far less expensive, than ether. Mr. Merrill having, at my request, manufactured a liquid, of which the boiling point was 70°, F., it proved that the mercury was easily depressed by this agent to 19° below zero, and that the skin could, with certainty, be frozen hard in five or ten seconds. A lower temperature might doubtless be produced, were it not for the ice that surrounds the bulb of the thermometer. This result may be approximately effected by the common and familiar "spray producer," the concentric tubes of Mr. Richardson not being absolutely necessary to congeal the tissues with the rhigolene, as in his experiment with common ether. I have, for convenience, used a glass phial, through the cork of which passes a metal tube for the fluid, the air-tube being outside, and bent at its extremity, so as to meet the fluid-tube at right angles, at some distance from the neck of the bottle. Air is not admitted to the bottle, as in Mr. Richardson's apparatus, the vapor of the rhigolene generated by the warmth of the hand applied externally being sufficient to prevent a vacuüm, and to ensue its

free delivery: 15° below zero is easily produced by this apparatus. The bottle, when not in use, should be kept tightly corked, a precaution by no means superfluous, as the liquid readily loses its more volatile parts by evaporation, leaving a denser and consequently less efficient residue. In this and in several more expensive forms of apparatus in metal, both with and without the concentric tubes, I have found the sizes of 72 and 78 of Stubs' steel-wire guage to work well for the air and fluid orifices respectively; and it may be added, that metal points reduced to sharp edges are preferable to glass, which, by its non-conducting proprieties, allows the orifices to become obstructed by frozen aqueous vapor.

Freezing by rhigolene is far more sure than by ether, as suggested by Mr. Richardson, inasmuch as common ether, boiling only at about 96°, instead of 70°, often fails to produe an adequate degree of cold. The rhigolene is much more convenient and more easily controlled than the freezing mixtures hitherto employed. Being quick in its action, inexpensive and comparatively odourless, it will supersede general or local anæsthesia by ether or chloroform, for small operations and in private houses. The opening of felons and other abscesses, the removal of small tumors, small incisions, excisions and evulsions, and perhaps the extraction of teeth, may be thus effected with admirable ease and certainty; and for these purposes surgeons will use it, as also, perhaps, for the relief of neuralgia, chronic rheumatism, etc., and as a styptic, and for the destruction by freezing of erectile and other growths. But for large operations, it is obviously less convenient than general anæsthesia, and will never supersede it. Applied to the skin, a first degree of congelation is evanescent; if protracted longer, it is followed by redness and desquamation, which may be possibly averted by the local bleeding of an incision; but if continued or used on a large scale, the dangers of frost-bite and mortification must be imminent.

It may be superfluous to add, that both the liquid and the vapor of rhigolene are inflammable.—*Boston Med. and Surg. Journal.*—*Richmond Med. Jour.*, June, 1866.

Art. XXII.—*On the Citric, Acetic, and Carbolic Acids in Cancer.* By Dr. John Barclay, Banff.

In the beginning of September of last year, a paragraph was pointed out to me in a newspaper setting forth the wonderfully beneficial effects which had attended the use of citric acid in a case of cancer; but I did not think of trying it, until a patient laboring under a large and excessively painful and cancerous tumor of the neck, behind the angle of the jaw, which from its size, situation, and the extent of its attachments, held out no hope of its successful removal by the knife, requested me to allow her to make a trial of the acid, as she said her clergyman had strongly recommended her to do so. I at once assented, thinking it could have little effect either for good

or for harm. But when I called a few days after, I was somewhat surprised to find that since she had applied a lotion composed of a drachm and a half of the acid, dissolved in eight ounces of water, she had had almost no pain in the growth. This I was the more astonished to hear, as nothing of the anodyne class seemed to have afforded the slightest relief from the pain before, with the exception of the hypodermic injection of morphia, and even this, she said, did not remove the pain so effectually as the citric acid lotion; and besides, the relief from the latter was much more permanent. This treatment was continued for some weeks, with the effect that the patient improved considerably in looks, health, and spirits; and to show if this was really due to the change of remedy, I ordered her to discontinue the wash for a week, during which period of omission the pain returned with as great severity as before, compelling the patient to resume the application, which again brought relief along with it. It now occurred to me, remembering the solvent power of acetic acid over cancer cell walls, to try what effect that acid would have when applied to the tumor. By this time the skin had begun to give way, and a sore to develope itself on the surface of the growth. I therefore ordered vinegar to be applied, and was glad to find that this controlled the pain quite as well as the citric acid had done before. Dr. Manson, the senior surgeon of Chalmers' hospital, in this place, who had used the citric acid lotion with equally beneficial results in another case of cancer (this time of the breast, and totally unsuited for excision from its extent, adjacent glandular enlargement, and the length of time it had existed), now changed it for the vinegar application, and he had no reason to be disappointed, for he found that its anodyne power was equal to that of the citric acid, and also that it possessed advantages which the acid formerly used by us possessed in a very much more slight degree. In the case of the wounds in the breast, which were numerous, and all partaking of the characters of cancerous sores in a most marked degree, it was noticed that after the application of the citric acid, the "thick, serrated and everted edges" did not seem quite so thick; serrated and everted as before, but looked thinner, softer, and with less induration around them. But, and as I hoped would turn out to be the case, the application of the acetic acid lotion, gradually increased in strength from that of common vinegar upwards, produced in this way a much more marked effect, for the edges began to thin down much more rapidly, granulations of a seemingly healthy character arose in the centre of the wound, all fetor disappeared from the discharge, and even attempts at cicatrization began to take place, sufficient in several of the smaller ulcers to close them in altogether.

The acetic in varying degrees of strength had now been used for a month in both cases, and looking back over this period, and over the month during which the citric acid had been used, to the condition of both patients previous to the use of these remedies, we were of opinion that not only had their state of health, and the appearance of the disease in each, not become worse, but that both had most sensibly improved. Both patients ate and slept much better than before, and were able to go about their usual household occupations with ease and comfort. The tumor in the neck had become decidedly less, there were attempts at a skin-forming process at several

points on the edges of the sore, and pain in it was reduced to a minimum. As for the case of the breast, the woman had so much improved in health, that it would have been difficult to recognize in her the same thin, cachetic-looking creature of three months back, for her cachetic look had wholly disappeared, and no one by looking at her now, could have supposed that she labored under a disease of such a serious nature, and which had progressed so far. The tumor itself was no larger than it was three months before, perhaps rather smaller, and several of the smaller sores had healed over entirely.

And now it was resolved to try the effect of carbolic acid in the above cases, and this was commenced on December 28th of last year. About this time, two other cases of cancer applied for advice. The one was an extensive tumor of the neck of the uterus, and implicating the whole of the vagina, accompanied by very great pain, and a most profuse and exceedingly fetid discharge. Indeed, so fetid was the discharge, that no one could stay even for a short time in the room with the patient. The other was an enormous schirrous tumor of the breast, of very rapid growth. It had been in existence only four months, and already it extended from the floor of the armpit almost to the sternum. The subject of it had been in one of the largest of our provincial hospitals, and had got nothing, either there or anywhere else, which gave her any relief from the extreme pain and the horrible fetor of the discharge. The carbolic acid in the form of a very dilute lotion (℞. Acidi carbolici, ʒ iss—ʒ ij.; spiritûs vini rectificati ℥ j.; aquæ ad lbij.) was ordered in all four cases, with the following results:

In the case of the tumor behind the jaw, the lotion was about as effectual in relieving the pain as either the citric or acetic acid lotions. Applied in this weak state, its solvent effect was much the same as that of the citric acid; but applied in a more concentrated form, the effect was a most vigorous eating away of the tumor, and with much greater rapidity than by the two acids formerly used. But there were very feeble attempts at skinning under the use of the dilute carbolic acid in this case, and none of course when the strong acid was employed.

In the case of the mammary tumor, which had been treated before by the citric and acetic acids, the report was that the pain was as effectually controlled by the carbolic acid as by either of the other two; that under its use the "thick, serrated and everted edges" disappeared much more rapidly than with the other two; and that when the weak solution was employed, cicatrization was seen going on over many of the sores, wherever the cancerous excrescences were eaten down to below the level of the surrounding skin. In the case of the disease of the uterus and vagina, the effect was equally striking; whenever the weak lotion was employed the pain almost entirely disappeared, and with it the horribly offensive discharge. The poor woman, from wishing herself dead, began to have her spirits raised, to eat and sleep well, and now no fetor was perceived by those in the room with her. And the general improvement in her appearance was beginning to be visible, when a severe attack of hæmorrhage nearly carried her off, since which time her progress towards recovery has been very slight.

A like result was obtained in the fourth case, that of the large

mammary tumor. The pain, instantly on the application of the carbolic acid lotion, disappeared as if by magic, and the fetor of the discharge was very much lessened. The tumor was extirpated a few days after the application of the acid, and the case has gone on well since.

Two or three more cases of cancer of the breast had the carbolic acid lotion applied, but the patients live at a distance, and no report has been received from them.

I may mention that, on treating cancer-cells under the microscope with acetic and carbolic acids in varying degrees of dilution, I found that, in about equal strength, the carbolic acid dissolved the cells much more rapidly and effectually than the acetic acid, and caused the nucleus also to disappear almost entirely when applied in a concentrated state.

From the above experiments with the three acids, then, it appears that they have about an equal effect in removing pain in cancerous growths; that the carbolic acid has a powerful effect in correcting the offensive fetor of cancerous discharges; and that they all have a solvent effect on cancerous tissue — the citric acid least, the acetic next in degree, and the carbolic most powerful.—(*British Medical Journal*, April 21, 1866, p. 409.)—*Braithwaite*, July, 1866.

ART. XXIII.—*Chloroform as an Internal Remedy:* By A. P. MERRILL, M. D., New York City.

AT the last Commencement of the Bellevue Hospital Medical College, the chosen orator of the occasion, who announced himself as neither an allopath nor a homœopath, neither heroic nor expectant, but only a lawyer, made the startling suggestion, that the three learned professions are daily lessening their importance, by the liberal and enlightened course of their instructions. As the celebrated teacher, Fenelon, by his skillful instruction of the Dauphin, made his services unnecessary to the King, so do the most skillful theological, legal and medical teachers of the present day, in some degree, supersede the necessity of their future labors, by enlightening mankind in regard to all the practical principles of their several branches of learning. But whatever may be true in regard to theology and law, it cannot be doubted that medical men are slow to believe that the value of their services is ever to be thus lessened, much less dispensed with. Yet there is abundant reason to believe that the tendency of all liberal instruction in medicine is, to inform the masses of mankind in regard to what have been hidden secrets of professional knowledge, and so to shape the practice of the healing art as to bring it somewhat largely within the comprehension of the non-professional.

Under the influence of liberal-minded men, anatomy, physiology and chemistry have become common studies of the rising generation in our country, and children in our public schools are permitted to imbibe the facts and principles of natural science in the art of learn-

ing to read. Teachers of youth are no longer content with the fictions of nursery tales, and it is by no means uncommon to meet with both men and women, in all the walks of life, who are familiar at once with the nomenclature and leading principles of practical medicine. Nor is the apprehension, now entertained by well-informed physicians, just, that such knowledge will tend to the increase of charlatanry. On the contrary, it is virtually confessed that the better the mysteries and complexities of structure and function in the human system are understood, the less likely will people be to rely upon intuitive skill and superstitious observances in the treatment of disease. The common sense and common judgment of men are of scarcely less value in medicine than in law and divinity; and the exclusive and learned charlatanry of each of those learned professions is to be equally condemned. The single step from the sublime to the ridiculous is not shorter and easier than that from the complex mysteries of polypharmacy, and the pedantic technicalities of the old school of medicine, to the simple secrets of the nostrum venders of modern times.

There was a time, not very long ago, when medical prescriptions claimed the confidence of men, by virtue of the multiplicity of their ingredients and the mysterious characters in which they were written, while the uninitiated were kept in equal ignorance of the nature of the malady and the means of cure; but the introduction of more liberal views not only simplified all combinations, but by lessening the distance between physician and patient, induced the latter to expect that his condition will be made known to him, as well as the means provided for relief. The popular knowledge of the most valuable remedies in use is due to the introduction of this more liberal system of medical practice; and all observation proves that men are more likely to require the advice of skillful physicians than before. As every doctor, notwithstanding his own knowledge of medicine, appeals, when attacked by disease, to his neighboring doctor for advice, so the well-informed non-professional man calls the best skill to his aid whenever he needs opium, bark or mercury, although he can be taught nothing new as to the remedied qualities of these medicines.

Now, what has become true, under these liberal teachings of the profession, of bark, opium and mercury, I would have true also of chloroform, as an internal remedy. But in regard to this, we have to contend with preconceived and erroneous notions of its poisonous qualities. These notions, wholly unfounded, have been fostered and encouraged by all classes of people, and have been sanctioned by legislative action, even to the extent of forbidding the sale of any quantity of chloroform, except upon the prescription of a physician; and when so sold, it must be labelled *poison*, although it is the least poisonous of all the active remedies in use. But we may hope that in the enlightened era the public mind may be disabused of such prejudice, in somewhat less time than it was of a similar prejudice in regard to Peruvian bark.

Physicians will readily understand something of the value of chloroform, when they come to be aware of its power in the chill of fever and all kindred affections. A remedy which will relieve chill with its concomitant congestions, more or less severe, and that so

effectually as to prevent febrile reäction, may be held to possess a power over certain forms of disease which has been accorded to no other, and to promise results which the most sanguine had never expected to accomplish by medical treatment. The discovery of cinchona and its alkaloids and salts, opened a new era in the practice of the healing art, which is familiar to the human mind throughout the world. The non-professional everywhere have learned the uses of these remedies in the prevention of chill. Everybody is supposed to know that if the life of the patient can be preserved through the chill of fever, and a general reäction established as its natural sequence, there is reason to hope for such a remission of the disease as will justify a reliance upon quinia to prevent its return. This is a great boon to mankind, which could not long remain in obscurity, and the human race has profited by it. But we have a remedy in chloroform more simple, safe and easy of administration, which, striking at the root of the matter, is capable, by a single harmless dose, which any one may administer, of curing the chill itself!

In certain localities where periodic fever prevails in its gravest forms, and especially in subjects with whom the periodic movement has become habitual, it is probable that the disease may not always be eradicated by a single dose of chloroform, although the chill, and the congestions attending upon it, be decidedly relieved. In malarial districts the intensity and persistency of this periodic movement have often been such as to withstand, for a long while, the most approved anti-periodic treatment, and it is reasonable to expect that under such circumstances preventive measures may become necessary, and even that a return of the chill may demand a repetition of the chloroform treatment. But in several cases in the adult subject, I have found the one hypnotic dose of chloroform sufficient to effect a cure; and I have good reason to believe that in a large majority of cases of infantile convulsions, the single effective dose is all the child requires, although I have often followed it with quinine as a precautionary measure. But in none of these cases has the disease returned, except in one instance, on the thirty-fifth day, whether the quinine was given or not.

It is now nearly fourteen years since I first ventured to pour a teaspoonful of chloroform into the mouth of a child dying of convulsion from chill. The feebleness of the child's constitution and the long continuance of the convulsion had caused such prostration as to afford little hope of any relief; but the child slept, recovered its pulse and warmth, and awoke in apparent health. It had no return of the disease, and from that time to the present I have not failed in any similar case, to accomplish the same result by the same simple means. Sometimes I have succeeded with larger, and sometimes with smaller doses, and in a few cases of great severity, and with the vital powers much exhausted, I have given chloroform by enema, as well as by the mouth, and always continued it until sleep was produced. This being secured, spasmodic action has always ceased and recuperation begun. Indeed, as soon as the eye-lids are closed the child may be considered safe, and only needs to be permitted to sleep quietly as long as it will.

In a notice of my publication on this subject, a medical journal remarks that "the convulsions of children are rarely fatal," and in

a monograph recently published in this city, it is stated in reference to infantile convulsions, "even in this dreaded disorder the majority will recover, even if no interference be practiced;" but the mortuary reports of New York show a frightful amount of mortality for this disease, such as might convince the most inveterate *expectanic*, who ever waited upon nature to cure a fatal disease, that it is inexpedient to entrust any one case to its remedial agency. Certainly, many of the cases which I have cured with chloroform in hypnotic doses must have proved fatal without it; having resisted all the usual remedies, and in some instances been abandoned as hopeless.

The following is a brief description of these much dreaded cases of infantile disease: The child is seized, often quite unexpectedly, with all the symptoms of chill, as it occurs in the first stage of a febrile paroxysm, but in many instances the chilly sensation is not great or much complained of. In very young children it comes on unnoticed. It does not continue long—sometimes not more than fifteen minutes—before convulsive movements are observed about the mouth and face, extending quickly to the eyes and limbs, until the whole muscular system appears to be involved. The eyelids are stretched wide open, the eyeballs are bloodshot, and twitch with continual spasms, the pupils are dilated, the fingers and toes are drawn in and convulsed, and a quick succession of general convulsions, from which the arteries do not appear to be exempt, continue for one, two or three hours, during which the pulse becomes enfeebled, the vital powers exhausted, the throat and bronchial tubes filled with mucus, and the spasms cease only to be followed by speedy dissolution.

In spite of the remedial powers of nature so strong in the young subject, and in spite of all the artificial remedies heretofore in use, this is the course and the issue of a majority of the cases of infantile convulsions proceeding from the effects of congestive chill; but my experiments with chloroform prove beyond all question that a hypnotic dose of this remedy given in any part of the course of this alarming and dangerous disease, is certain to afford prompt and permanent relief. The quantity required depends, as in other diseases and remedies, upon the age and constitution of the patient, and the intensity and duration of the disease; but to obtain its full curative effects, it is always necessary to administer such doses as will produce sleep. This alone is evidence of its constitutional influence, and the rule holds good with new-born infants and with older children alike.

The remedy is equally efficacious, also, in chills and congestions in the adult subject, in concussion, sunstroke, hemorrhage, cholera morbus, pneumonia, delirium tremens, and all other diseases dependent upon, or accompanied by severe congestion, as a prominent pathological condition. Indeed, it has in no case failed, in my hands, to relieve congestion, whether proceeding from the febrile cause, local irritation, or concussion. After having observed its wonderful power in cases of infantile convulsions, I have, from analogy alone, been led to use chloroform internally in a variety of kindred affections, and with uniform success. From the same analogy I infer its efficacy in Asiatic cholera, in the treatment of which it has, so far as I am informed, not yet been tried in hypnotic doses. In various

parts of Europe chloroform has been used in cholera, both by inhalation and in small doses by the stomach, as it has been, in some parts of this country, in congestive chill; but I have not been able to ascertain that in any case reliance has been placed upon its full physiological effects, as evidenced by sleep, which alone insures its curative power. It is not enough that anæthesia is produced by inhalation, or that partial influences over the nervous system in congestive chill, convulsions and cholera are to be overcome: it is only by placing the patient under the full physiological influence of chloroform, through the medium of the stomach and bowels, as evidenced not by anæsthesia, but by sound and healthful sleep.

The largest quantity of chloroform I have given, was in a case of pulmonary hemorrhage, in which, under urgent circumstances, half a fluid ounce was swallowed in the course of half an hour, with prompt relief to the patient, and without disagreeable or untoward effects. In some cases of infantile convulsion, relieved by full doses of chloroform, the sleep produced, although calm and healthful, was followed by temporary nervous restlessness which subsided without remedies. In pneumonia and delirium tremens, I have given chloroform for several successive days in doses of a fluid drachm and upward, with the invariable effect of producing sleep, and sometimes when large doses of opium had failed, always affording relief to the irritations and congestions of the lungs and brain. In these and other cases, the wakefulness produced by opium has always been relieved by chloroform, and I have sometimes suspected that there was a happy concurrence in the action of the two remedies. In no case have I observed injurious effects upon the mucus tissues, whether the chloroform was administered unmixed or in combination with mucilage or syrup; and my own firm conviction is, that we have no other remedy which is powerful for good, that is less objectionable on account of evil results. I do not hesitate to recommend its use in the treatment of cholera, both by the stomach and by enema, depending, as I have done in other cases, upon the force of analogy; but I have little confidence in certain relief, unless the remedy be used in such quantity as may be required in each individual case to produce sleep, or, in other words, its full physiological effects.—*Richmond Medical Journal.*

[With the internal use of chloroform, in the treatment of puerperal convulsions and delirium tremens, we have succeeded when other means have failed to give relief.—EDS.]—*Atlanta Med. and Surg. Jour.*, June, 1866.

Bibliographical Record.

THE following lecture has been taken at random, as a specimen, from a work soon to be issued by J. J. Meylor, A. M., M. D., entitled "Watson Abridged." This is a well digested condensation of the Lectures on the Principles and Practice of Physic by the renowned

Prof. Watson, M. D., F. R. C. P., of London, whose Practice is used as a Text-book in many Medical Colleges of the U. S. It is to be bound in flexible cover, to be portable, and to consist of about 220 pages; containing, besides the lectures, a concise account of the Properties, Uses, Doses, etc. (taken from the U. S. Dispensatory), of all the medicines mentioned in the work, with other valuable additions. The lectures are to be numbered as in the original, rendering reference to them easy; and to be divided, according to the subject, by such side heads as *Symptoms, Causes, Treatment, Diagnosis, Prognosis, etc.*, thus enabling the practitioner to glean any desired information at a glance.

Lecture LXXII.

Diarrhœa, Sporadic Cholera, Epidemic Cholera.

Diarrhœa. This consists in frequent loose or liquid alvine evacuations, and is a common symptom of different diseases. It may proceed from over-repletion of the stomach, or from the use of unwholesome food—*diarrhœa crapulosa.* This is a salutary effort of nature at getting rid of irritating matter.

Symptoms. These are often nausea, flatulence, griping pains in the bowels, succeeded by fluid stools of unnatural appearance and odor; often also furred tongue and foul breath; but little or no fever, a natural pulse and heat of body.

Causes. These are excess in the quantity or mixture of the article of food and drink; raw vegetables of many kinds, cucumbers, etc.; sundry kinds of fruit, especially if unripe; mushrooms, even when cooked; putrid or high food; fish often, shell fish, etc.; in children, other food than the mother's milk. Even wholesome food, when taken for the first time, might cause griping and purging. Another cause is certain mental emotions, especially the depressing passions, grief, above all, fear. Seasons, the hot weather of summer and autumn, and the atmosphere of the dissecting room, are predisposing causes.

Treatment of Diarrhœa Crapulosa. This diarrhœa generally ceases of itself. Favor recovery by giving diluent drinks, and forbidding food not easy of digestion. Cleaning the bowels by some safe purgative, and then soothing them by an opiate, often accelerates recovery. Or, give the aperient and anodyne together—they will not interfere with each other; as castor oil ℥ss, with laudanum m. vi or viii; or pulvis rhei gr. xv to ℈i, with half as much pulvis cretae compositus cum opio. If the diarrhœa runs on and is slight,

astringents and bitter medicines may suffice; as infusion of cusparia with the tincture of cinnamon. If it be more severe or obstinate, use chalk mixed with catachu or rhatany, which are astringent, and with laudanum, which soothes In extreme cases, give a pill of sulphate of copper gr. $\frac{1}{4}$, with opium gr. $\frac{1}{4}$, three or four times daily. The opium keeps the copper from griping.

Sporadic Cholera. Symptoms. These are vomiting and purging of liquid matter deeply tinged with, and principally composed of, bile; violent pains in the stomach and bowels; cramps of the legs and abdominal muscles; great depression of the vital powers, coldness and faintness; a tendency to syncope or collapse; sometimes actual syncope. The attack is generally sudden. There is a burning sensation in the epigastrium. Sometimes death results.

Causes. The chief of these is cold after long and great heat. The irritation of the bowels and stomach proceeds from an undue quantity of unusually acrid bile in the intestines. The causes of diarrhœa, especially imprudence in eating and drinking, may often determine an attack of cholera.

Treatment of Sporadic Cholera. Strong drastic aperients to stop the purging and vomiting, and narcotics or astringents to lock the bowels, are equally hurtful. Dilute the contents of the bowels, and thus favor their expulsion, by emollient drinks and injections, especially chicken broth ; and, when faintness or sign of sinking appears, give laudanum in full doses. If the vomiting and diarrhœa have lasted some hours before the patient is seen, give the opiate immediately. For very irritable stomachs, solid opium in pill form is better than laudanum; or an opiate clyster answers well; or an opiate suppository may be introduced into the rectum. When the skin is cold and the pulse sinking or irregular, carbonate of ammonia or brandy and water may be given by the mouth; and a mustard poultice, or a bag of hot salt, or a moist and hot flannel sprinkled with oil of turpentine, should be applied to the abdomen. Cramps are relieved by diligent friction with the hand or some stimulating liniment. In great collapse, any attempt to rise from the horizontal posture may cause fatal syncope. Opium, our sheet-anchor, sustains the flagging powers and quiets gastro-intestinal irritation. After a severe attack there is apt to be extreme feebleness, with soreness of the muscles of the trunk and limbs; and sometimes symptoms of inflammation of the mucous membrane supervene; pain and tenderness of the abdo-

men, a white tongue, thirst and fever. These may require the remedies of inflammation.

Epidemic, Asiatic Cholera. Symptoms This, like the sporadic, is attended by profuse vomiting and purging, by extreme prostration of strength, and by cramps. But the ejected matter contains no bile, and the symptoms of collapse come on early. The discharged matter is thin, for the most part whitish, like rice-water, without fecal smell, and contains small, white albuminous flakes. The evacuations, however, sometimes vary. The symptoms of collapse are a frequent, very small and feeble pulse, sometimes extinct at the wrist, even for hours; a cold and often blue surface; purple lips; blue finger nails; a leaden colored and cold tongue; cold breath; shrinking of the body; sunken eyes; cheeks fallen; a withered and ghastly countenance; white, shriveled hands and fingers; skin bathed in cold sweat; husky and faint voice; hurried and anxious breathing. The muscular cramps of the lower extremities and abdomen are attended with severe pain, and constitute most of the patient's suffering. No urine is passed or secreted during these symptoms. Even in extreme collapse the intellect is clear to the end. Death may occur in two or three hours, or not for twelve or fifteen. The course of the symptoms varies much. Sometimes the vomiting and purging soon cease, sometimes they do not exist, but rapid collapse and sinking. These are thought the most formidable cases. Sometimes the peculiar secretion is poured forth, but not ejected from the body. Sometimes the cramps are not very troublesome. The cutaneous blueness may be absent. Generally there is tormenting thirst. The venous blood is dark, thick, and scarcely moves, if it moves at all.

Anatomical Characters. Post-mortem examinations have generally found in the alimentary canal such matter as had previously issued from the bowels, also usually the glands, solitary and agminated, large; the veins loaded with thick, black, tar-like blood; and the urinary bladder empty and of the size of a walnut. The blue color often disappeared quickly after death. A quarter or a half hour, or longer after death, slight twitchings and quiverings of the muscles or movements of the limbs have taken place, owing to the spasms. The above is an outline of the cholera of 1831.

History, Causes, etc. The poison of that cholera traveled, was portable, and communicable from person to person. The malady was excited by some positive poison applied to the body; but whether

that poison multiplied and reproduced itself in the body is more doubtful. A great majority of the cases was caused by the poison in the atmosphere. The nature of the poison might be explained by the "hypothesis of insect life as a cause of disease." The predisposing causes of cholera were causes of debility, as scanty nourishment, bad air and the other evils of poverty, but especially intemperance, and more particularly the intemperate and habitual use of distilled spirits.

Modes of Attack. The cholera attacked in two ways: suddenly and without warning, which was rare; or oftener the specific symptoms were preceded for a time, even for some days, by diarrhœa.

Treatment of Epidemic Cholera. When once fairly formed, medicine had very little power over the disease; but in the preliminary stage of diarrhœa, it was easily managed. Neglected diarrhœa often ran into uncontrollable cholera, and the use of purgatives hastened or insured that catastrophe. The proper plan was to arrest the diarrhœa, especially when painless, copious and exhausting, as soon as possible, by astringents, aromatics and opiates. Sulphuric acid has been highly praised. Scruple doses of *pulvis cretæ compositus cum opio* answer well. In collapse we have no reliable drug. The patient might, perhaps, be allowed to drink as much cold water as he desires. In the severe pains from cramps, ease might be obtained by the cautious use of chloroform — to these measures, full and repeated doses of calomel might be added. For the fever which sometimes succeeds collapse, and which occasionally occurs without it, no particular direction can be given. Pay special attention to the kidneys and their functions. The thick blood which congests them is loaded and poisoned with urea, thus endangering their structure and that of other organs. The remedies are bland and diluent drinks, the warm hip-bath, and, perhaps, the removal of a few ounces of blood from the loins by cupping. Some physicians relied on timely bleeding; some, on mustard emetics; some, on hot-air baths to meet the apprehended attack: some, on introducing into the system a large quantity of neutral salts, to liquefy and redden the blood and restore the circulation; some, on diluting the blood by pouring warm water, or salt and water, into the veins; some, on brandy; some, on opium; some, on cajeput oil; some, on calomel alone. Each of these, in some cases, did or seemed to do good; but doubtless some of them sometimes did harm. The author cured some with large and repeated doses of calomel, as ℥ss.; yet it cannot be affirmed that the calo-

mel cured them. The injection of warm water into the veins sometimes restored for a time, sometimes perfectly cured, patients who were all but dead and in an extreme state of collapse.

Terminations. Some got well rapidly; some fell into a state of continued fever, which often proved fatal; some, after the vomiting and purging and cramps had disappeared, died comatose, over-drugged, perhaps, sometimes by opium. The injections of water into the veins might, and likely did sometimes, cause death by admitting air into, or by causing inflammation of, the veins or over repletion of the vessels.

A Treatise on the Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, etc. 8vo., pp. 358. Henry C. Lea, Philadelphia, 1866.

We take pleasure in recommending to the profession this valuable and practical work on the Practice of Medicine, more particularly as we have had opportunities of appreciating from personal observation the author's preëminent merits as a clinical observer. The plan of the work may be gathered from the following statement contained in the preface:

"Condensation has been necessary, and as much conciseness as is consistent with clearness has been studied. Very little space will be found to be occupied with past opinions or doctrines which have become obsolete. Discussions relating to mooted pathological questions are rarely entered into." * * * * * * *

"Subjects belonging to other departments of instruction are for the most part omitted."

As the object of this work is to present the outlines of both general and special pathology, the author has divided the work into two parts, treating of each subject separately; each part admitting again of subdivisions methodically arranged, relating to Nomenclature, Morbid Anatomy, Etiology, Semeiology, Diagnosis, Prognosis, Prophylaxis, and lastly, Therapeutics.

This work is undoubtedly one of great merit, and we feel confident that it will have an extensive circulation. E. S. L.

Clinical Lectures, by PROF. A. VON GRÆFE, *on Amblyopia and Amaurosis and the Extraction of Cataract.* Translated from the German by Haskit Derby, M. D. Pamphlet, pp. 86. Boston: David Clapp & Son, 1866.

THIS admirable work exhibits "the progress which has been made in the exploration of one of the most obscure departments of Ophthalmic science," and, to use the language of the translator, "is a specimen of clear, precise and comprehensive clinical instruction, without a parallel in Ophthalmic literature." The first and major portion of the work the author devotes to "Amblyopia and Amaurosis." Of the former, "three things," he adds, "aid us in arriving at our conclusions: first, the functional state of the eye, carefully considered; secondly, the appearance of the papilla; thirdly, the manner in which the affection has become developed."

He lays great stress on the importance of functional derangements, as prognosticating possible blindness, in many instances, by a narrowing of the field of vision, "a preponderating loss of sensibility of the peripheric portions of the retina."

The work exhibits throughout the genius and clear practical sense of the author. His remarks upon the extraction of cataract, backed by his great experience, render his work particularly valuable. He cautions the profession upon the danger of a diffuse, as well as a defined, suppurative process in operations upon marasmic patients, in whom the cornea is generally thin and but slightly elastic. He gives preference also to a lower section of the cornea, as lessening in a great degree the evil results of partial suppuration and obviating the tendency to eversion of the flap by the forcible closure of the lid. Iridectomy he does not think justifiable in all instances, as its simultaneous performance with extraction in restless patients is attended with some anxiety, and when preceding extraction it subjects the patient to a double operation, prolonging his stay in hospital and destroying his moral courage. He deems iridectomy justifiable in cases where probable suppuration is looked for, and, when decided upon, that it should precede extraction, etc. E. S. L.

A Manuel of the Principles of Surgery, based on Pathology, for Students. By WM. CANIFF, Licentiate of Medical Board of Upper Canada, etc., etc. 8vo., pp. 402. Lindsay & Blakiston, Philadelphia, 1866.

THIS work originally consisted of the lectures of Dr. Caniff upon

General Pathology and Surgery, compiled into a hand-book of principles for his class, and subsequently extended to its present size. The author admits that, in the preparation of his lectures, he consulted freely both ancient and modern authorities upon pathology and surgery, at the same time excluding whatever seemed "irrelevant or unnecessary for his purpose." The style is simple, clear and forcible, and technicalities calculated to puzzle the minds of students are avoided, as far as practicable. Too much credit cannot be awarded to the author for his undertaking, the first of the kind ever attempted in that portion of Canada West. There can be no doubt but that the work will meet with the success it deserves.

It is divided into five parts, the "first treating of inflammation; the second, of the healing process; the third, of external injuries; the fourth, of diseases of certain tissues; and the fifth, of tumors or morbid growth." This arrangement into subjects is simple and original, and embraces all surgical affections excepting such as are purposely omitted, as those of the eye, for instance. Affections of the genital organs, as syphilis and gonorrhœa, are treated of under the head of inflammation. In syphilitic affections Dr. Caniff places great reliance upon the iodide of potassium, deeming it as efficacious in causing an elimination of the poison as mercury, and less likely to produce evil effects upon the system. He therefore recommends that a trial be first made of the potash salt, and in the event of a failure, recourse can then be had to calomel.

We do not endorse the views of Dr. Caniff on the treatment of syphilis. Iodide of potassium is undoubtedly a valuable remedy, but its efficacy seems to be more particularly directed to the removal of those eruptions implicating the connective tissue of the skin, which view originated with Mr. Joubin, and with whom we fully coincide. E. S. L.

Dr. Holcombe's pamphlet, entitled "How I came to be a Homœopath," comes to us written in a soft and pleasant style, with glossy covers and pink leaves, easily "waded through," as it is sufficiently characterised by shallowness and egotism. Not heavy enough, perhaps, to engage the attention of the critic, like the butterfly it flits about in the parlors and boudoirs of his lady patients and admirers, sucking and subsisting on the praise yielded by such flowers—sweetly living out its ephemeral existence. J. T. S.

On Wakefulness. By WILLIAM A. HAMMOND, M. D., 12 mo., pp. 93. J. P. Lippincott & Co., Philadelphia, 1866.

DR. Hammond is also known as the author of "Physiological Memoirs," "Treatise on Hygiene," and "Lectures on Venereal Diseases," the last of which, was favorably noticed in the preceding number of this Journal.

The present monograph was first published as an essay "On Sleep and Insomnia," in the *New York Medical Journal*, for May and June, last year, and is published in this form as being thought worthy of permanence and a more extended circulation.

The introductory chapter is devoted to the Cause of Sleep, which he avers to be a need of repose for the restoration of matter expended during the ceaseless activity of the waking period. So imperative does this want become, that soldiers have been known to sleep on the march and in battle, and individuals have even slept while under prolonged torture. Also many country physicians can testify to the possibility of sleeping on horseback. He takes issue with such high authorities as Marshall Hall, Carpenter, Sir. H. Holland, Dickson and Sieveking, who hold that the brain is congested during sleep, and regard the congestion as the immediate cause. His opinion is borne out by his experiments on dogs, whose brains he was able to inspect while under the influence of narcotics and anæsthetics, after removing a portion of the skull by the trephine. The primary effect of the narcotic (period of excitement) was characterised by a fullness and redness of the vessels; while sleep, whether artificial or natural, was attended by a depression of the circulation. This corresponds perfectly with the fact always observed, that the circulation is less rapid during the sleeping than during the active period. The same result was observed under the full effect of chloroform in the dogs experimented on; and in individuals who had lost portions of the cranium from wound or accident, observations tended to the same conclusion, that the period of activity in the brain, as in other organs, is marked by a more abundant supply of the nutritive fluid, to repair its waste. Therefore it is, that causes which depress the circulation create a disposition to sleep, as excessive fatigue, cold, loss of blood and debility, not to mention certain medicines which have the same effect.

With this view of the Physiology of Sleep, which seems to us to be the correct one, the author's theory of the Pathology of Wakefulness, is so obvious as not to require mention.

Among the exciting causes of wakefulness, he enumerates, (1.) "Long and continued or excesive intellectual action, or any powerful emotion of the mind." (2.) "Those positions of the body which tend to impede the flow of blood from the brain, and at the same time do not obstruct its passage through the arteries, while causing hyperæmia, also produce insomnia." (3.) "An increased amount of blood is determined to the brain, and wakefulness is produced, by certain substances used as food or medicine." (4.) "Wakefulness is caused by functional derangements of certain organs of the body, whereby an increase in the amount of blood in the brain is produced."

The means of treatment he arranges in two classes: (1.) "Those which by their tendency to soothe the nervous system, or to distract the attention, diminish the action of the heart and blood-vessels, or correct irregularities in their function, and thus lessen the amount of blood in the brain. (2.) Those which directly, either mechanically or through a specific action upon the circulatory organs, produce a similar effect." He very properly draws a distinction between active and passive congestions of the brain, which are to be recognized by the general condition of the patient, as the case may be, and require a corresponding variety of treatment.

Here the author makes a statement to which we cannot quite assent, as far as it applies to this country: "As a rule, people are underfed. This is especially the case with women, who too generally indulge in what may be called 'slops,' to the exclusion of good, solid, nutritious food, derived in great part from the animal kingdom." Neither our native American population, nor the immigrants of German stock can, we think, fairly be charged with an aversion to animal food, nor many of the male population of this country, of whatever origin, to a decided distate for stimulating beverages.

Any rational treatment would, of course, imply the discontinuance of any or all of the exciting causes above mentioned. As active means of treatment, the author recommends physical exercise, the warm bath and cold to the head. The upright posture he avers to be more favorable to sleep than the recumbent, which accords with his previous reasoning. Of all the agents furnished by the Materia Medica, he places most reliance on bromide of potassium, a remedy which has lately come into use in the treatment of delirum tremens.

The analogy between this last malady and the one treated in his book, is not noticed by Dr. Hammond, but we are sure that it must have struck many of our readers. Though delirum tremens must be considered a disease of arterial depression, dependent on the withdrawal of prolonged stimulus, this state is not incompatible with cerebral congestion, which may be passive from deficiency or derangement of nervous influence. This nervous and cerebral disorder, with determination of blood to the brain, we know follows excessive hemorrhages, and the necessity for stimulation is as well recognized here as in delirum tremens. The analogy might be carried also to the delirum of fever and the mania of insanity. Of course, mere theorizing leads to no useful results in medicine, and it is to be hoped that the pathology of disordered cerebral action, especially as regards the circulation, will be more minutely and thoroughly investigated.

On the whole we consider Dr. Hammond's little book a valuable contribution on a subject hitherto much neglected, and on which he writes practically and independently. Also the mechanical execution of the book fully sustains the deserved credit of the well-known house which publishes it.

Why Not? A Book for every Woman. By HORATIO ROBINSON STORER, M. D., of Boston, Professor of Obstetrics, etc. 18mo., pp. 91. Boston: Lee & Shepard, 1866.

THIS little *brochure*, as stated in the title page, is "The Prize Essay to which the American Medical Association awarded the gold medal for 1865." The growing frequency of induced abortions, especially among married women, has become an evil of such magnitude that the National Congress of the Profession deemed it their duty to throw the full weight of the Medical body in the land in opposition to it; and this essay, which is published for general circulation, is intended to display in its true colors the criminality of such proceedings in all stages of gestation, the dangers of such a course to those who adopt it, the fallacies of the pretexts offered for the act, and to indicate the measures best adapted to the prevention of the practice. When the avoidance of the pains and duties of maternity becomes a common occurrence and a subject of familiar conversation among women in the respectable circles of society, and no longer dreads the light of publicity or clings as a peculiar reproach to the vile or the lost, there is indicated a decay in morals which

may well alarm all lovers of their race. Dr. Storer is fully impressed with the importance of the subject which he treats, and no one is probably better able to discuss it and present it in its true bearings to those who are destined to be the wives and mothers of the land. As a physician and a moralist, he speaks in no uncertain terms and in a style chaste, elegant and forcible. But for the portion of a single clause in his final summary, we might pronounce his work altogether excellent and true, so far as a somewhat careful examination shows; but here we find a verification of the inevitable imperfectibility of all things human, as he writes "the fertile savannas of the South, now disinthralled and first made habitable by freemen," and proves that no degree of culture can refine the taste where toleration is not practiced, and no amount of learning expand the mind to a full understanding of a grand subject, where Puritanic selfishness and arrogance take a microscopic view of distant objects, and demand that the world believe and adopt the opinions which suit the interest or caprice of the self-appointed teachers and guardians of their neighbors.

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. By William Roberts, M. D., Fellow of the Royal College of Physicians, London, etc. 8vo., pp. 512. Philadelphia: Henry C. Lee, 1866. We are in receipt of the work above-name from the house of Blelock & Co., Publishers, Booksellers and Stationers, 130 Canal street.

The author divides his work into three parts, in the first of which he treats of the Physical and Chemical Properties of the Urine in health and disease, and of urinary deposits; in the second, of Urinary Diseases, of which the chief characteristic is an alteration of the Urine; and in the third, of Organic Diseases of the Kidney. In this way he leads the reader by the easiest and most direct route to the study of a most interesting group of diseases, on which much light has latterly been thrown by the researches of such distinguished physicians as Christison, Frericks, Rayer, Prout, Bright, Gross, Bird and Todd, thanks to whose labors we are no longer left to grope our way in uncertainty to the treatment of a hitherto obscure and ill-understood class of maladies. Dr. Roberts writes without any flourish or aiming at effect, but as one who well understands what he is about and knows how to make his ideas clear to the reader.

In a treatise of so well sustained merit in all its parts, it is not

easy to select any portion as preëminent in excellence. We have been, however, struck with the good sense of his brief remarks on the subject of Spermatorrhœa, with which the fraternity of quacks have lately so much entertained the curious public, and which has received attention from some scientific writers. Dr. Roberts, we think, has properly chosen the middle course between the careless or ignorant slurring of this subject, practiced by most writers, and that magnifying of the malady into a hydra-headed monster, which we find in the book of Lallemand. It is noticeable that he condemns the local application of the nitrate of silver to the mouths of the seminal ducts, which is the favorite practice of Lallemand by means of his famous *porte-caustique*, as being uncalled-for and sometimes pernicious.

In this, which seems to be his first effort as the author of a systematic work, Dr. Roberts makes no apology and affects no self-depreciation, for which we commend his taste; while we are sure that the profession will appreciate his labors in giving them a good book, and thank the enterprising American publisher for bringing it within the reach of those on this side of the Atlantic.

Conseils pour se préserver et se guérir du Cholera Morbus. Par J. CL. GOUGUET, Docteur-Médecin de la Faculté de Montpellier, ex-Chirurgien de Marine en France. 12mo., pp. 32. Vermillionville, La., 1866.

THIS is in reality a short monograph on the subject of the terrible scourge of which we have begun to experience a new infliction, after so long a respite. The author observed and studied the malady at Paris, in its first visitation in 1832, both in the hospitals and in private practice, and he gives the results of his long and extended experience for the benefit of the public at the present juncture, and as a guide to his younger professional brethren.

The cause of the disease, he says, remains entirely unknown, nor does he attempt to explain its nature, unlike some other writers of the day. Of its contagiousness he is a total disbeliever. His description of the symptoms and progress is graphic, and evinces close and extended observation. In discussing treatment, his remarks on Cubebs may be of interest to our readers: "This is a remedy which deserves to be taken into serious consideration. The well-established success which it has obtained, imposes on me the duty of recommending it above every other, at the outset of cholera. Dr. Carquet,

a distinguished physician at Sezanne (Marne), is the first one who has employed cubeb pepper in cholera. He gives it in the dose of 27 grains, suspended in two ounces of cold water, reducing the dose when the first is rejected, or giving it by enema, 36 grains in 3 ounces of a decoction of starch. The resulting facts are sufficiently numerous to show that this medication has checked promptly enough all the grave symptoms; it is therefore, in our opinion, the treatment which appears most worthy of commanding attention, after the happy success obtained by this remedy."

On the whole, we may remark that this little pamphlet, without possessing originality, or presenting the charm of novelty, or touching upon the latest investigations of the subject, is valuable as representing the experience of one who met the enemy in his first campaign, and has contended with him in each successive one up to the present time.

Editorial.

THE Junior Editor of this Journal, having been necessarily and unexpectedly left in charge on the eve of publication, might claim the indulgence of the public, after the ancient, not to say approved, custom of the fraternity, for all the imperfections that may be found in the present number. This claim he waives, not in defiance of criticism, for that were a presumption unbecoming a tyro in any field of labor, but from a belief that no more will be required than is just, under the circumstances, and that for anything less censure would be deserved. At the same time, in justice to the absent Proprietors and Editors, it is well for the patrons of the Journal to know where the responsibility, for the present, rests, and not to hold them accountable for its faults.

Neither is it his intention "to define his position," since, were there no better reason, there has hardly been time yet to learn it; nor to entertain the readers of the Journal with professions and promises, for these might result in disappointment on the one hand and mortification on the other; and he certainly will not resort to the shallow artifice of affecting self-depreciation, in the hope of finding either favor with the generous or credulity with the simple. An indifference to the verdict of the professional public is not here inten-

ded, for that would be neither courteous nor true; and while submitting to the ordeal with full confidence in their candor and uprightness, it is merely asked that they be not premature in forming nor hasty in pronouncing judgment, whether it be favorable or otherwise.

Infidelity versus Quackery.

THE propensity of Medical men to infidelity in religion is a charge too old and too well substantiated to be wholly disavowed; but, like the general imputation of viciousness so freely bestowed on clergymen's sons, is probably rather overdrawn. In this connection it is not our intention to deny the charge, nor to exculpate our professional brethren, but to endeavor to account for the fact and show how its existence may be avoided.

The foundation of Medical Science, taken in its broadest application to all branches of the Healing Art, is Observation. From known effect we reason back to cause, and notwithstanding the great advance latterly made in some branches of medical knowledge, particularly Chemistry and Pathological Anatomy, the rule holds good, with few exceptions, that *a posteriori* reasoning is the only correct method in Medicine. The opposite method, from cause to effect, dooms us so constantly to disappointment and mortification, that it is found useful only in experiment and research, where the principle involved can be tested by the result.

Now this method of reasoning, which has been found so successful, and with which no other is comparable, when the lives and health of mankind are concerned, leads, when applied to Theology, to nothing more than Natural Religion, or Deism. Christianity requires all this and much more—the admission of the Revealed Will of God; of the doctrine of Atonement and of Justification by Faith; of the Divine interposition in suspending natural laws by miracles, etc., the last of which is particularly abhorrent to all scientific reasoning.

The zealous and exclusive pursuit of scientific studies necessarily produces habits of thought and a mode of reasoning not adapted to other subjects, and thus we may account for the rejection of Christianity by many of the most eminent members of the Medical profession. Some doubtless fall into the habit inadvertently, and never happen to think that an exclusive mode of reasoning is not adapted to the investigation of all subjects; but no man can lay claim to varied and extensive knowledge, sound judgment and candor, who does not admit that much of our reasoning in matters of commerce

politics and morals, as well as religion, must be speculative. Let the intelligent physician pause and reflect in his investigation of subjects which, from their nature, are not susceptible of sensible proof, and sometimes not even of comprehension; and he will find that the fault is not in the system which fails to answer his rules and tests, but rather in his mode of investigation.

We come now to another fault, occasionally alluded to but not generally recognized—the propensity of the Clergy to countenance quackery, and sometimes even to participate in it or practice it. The quacks themselves do not fail to perceive this fact, and make them their most serviceable allies, well knowing the proneness of people to put implicit confidence in their spiritual guides, even in matters of which they are no less ignorant than themselves. Thus our eyes constantly meet the names of clergymen, adorning the imposing columns of every quack who advertises his nostrums; and thus they are made to participate in nefarious schemes to deceive and defraud a credulous public. Some, not satisfied with a subordinate position, themselves turn nostrum-mongers, and do not yield in effrontery to any of the fraternity. Such instances we believe, however, to be rare and not generally countenanced among the clergy themselves; but a minister of our acquaintance, in high standing, once spoke to us of a nostrum, the secret of which he kept, to be transmitted as a legacy to his family. Without stopping to discuss the probability of its possessing any real merit as a remedial agent, we venture the opinion that he would hardly justify a physician who had discovered a short and easy route to Heaven, in speculating on the knowledge, and still less in suppressing and keeping it as a legacy to his family.

It is charitable to suppose that, in giving their testimony in favor of nostrums, clergymen generally believe themselves to be promoting knowledge and truth; but the Medical profession are agreed that the cause of science and humanity is best served by making known every valuable discovery, so that all may use it and the public enjoy its benefits unrestricted; and it is fair to conclude that the profession understand their own business *as well at least* as outsiders.

With respect to the common practice of admitting quack advertisements into the columns of religious periodicals, we shall let a penitent publisher speak for himself. The "Christian Witness," a British magazine, in the number for November, 1844, says:

"We fell into the current, and followed the bad example of pre-existing religious periodicals; but reflection has led us to see our

mistake, and we hasten to repair it, assured that we shall give satisfaction to all our readers, who properly estimate the true character of modern quackery, which is one of the vilest and foulest of all foul and vile vocations, and is sustained to an incredible extent by fraud, forgery and falsehood, and fraught with delusion, disease and death. To publish their nostrums is to partake of their deeds; to receive their money is to share their spoils, and aid them in making war upon mankind. No vehicle renders them such assistance in the work of rapine as the *religious magazines*, which, among the thoughtless masses, powerfully and naturally tend to dignify the hateful system, and to sanctify the ruthless imposture. On this point the communications of some of our correspondents are both startling and grievous, and such as show the necessity of religious men and religious magazines cutting all connection with quacks and quackery."

By way of digression, these forcible and just remarks and this example might be commended to the press collectively, which professes to be the guardian of truth, the champion of justice and the censor of public morals; but which constantly hires itself out to quacks and mountebanks. And when we behold a Medical journal prostituting itself to the enemies of the cause which it professes to maintain and support, we are constrained to exclaim, not in despair but in shame and mortification, "*Et, tu Brute!*"

Having briefly described the Clerical cachexia relative to the Medical Profession, it is proper to consider its ætiology. Like its coördinate, before discussed, the cause is to be found in an erroneous method of reasoning. The clergyman attempts to apply his theological, *a priori* mode of reasoning to medical subjects, and becomes a vague explorer, or blind follower, on a boundless field of speculation. Faith is quite out of place here, and miracles are not to be conceived of. It appears strange, indeed, that ministers of the Church Catholic and Apostolic, should imbibe heresies or countenance sects in Medicine; and set at naught the landmarks and principles of a science more ancient than the religious system which they inculcate, while running after the novelties of this, that and the other *enthusiast*, to use the most charitable appelative; but such we sometimes find. In Medical science, skepticism rules till experience gains the mastery and compels conviction. When the travail is over, Science rejoices that a principle is born.

The injury which Medicine suffers at the hands of the legion of marauders on its domain, together with their abettors and allies, is incalculable, and has been borne with some murmurs and few reproaches. The damage is not diminished from being unwittingly inflicted, but rather increased, for resentment is half disarmed and resistance enfeebled.

No intelligent physician needs to be informed of the high moral ground occupied by the profession in its various relations; but, for the benefit of the non-medical reader, the following extract is made from the "Code of Ethics of the American Medical Association:"

"It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or handbills, inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures; or publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

"Equally derogatory to professionable character is it, for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or others. For, if such nostrum be of real efficacy, any concealment regarding it, is inconsistent with beneficence and professional liberality; and, if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them."

It cannot be denied that occasional derelictions to these canons occur on the part of medical men, but it is proper for the public to know that we have a code which strongly reprehends such breaches of professional honor and propriety, and the public should aid us in sustaining it against mercenary transgressors, by withholding from them all countenance and support.

It is deplorable that Theology and Medicine, the benefactors *par excellence* of our race, should not be in accord and mutually aid, instead of retarding each other's progress towards their glorious ends of ministering to the material and spiritual parts of our existence. These views are thrown out in the hope of inducing alike those clergymen and physicians whom they may reach, to examine the grounds of their respective trespasses, to discern the predisposing causes, and to find means for counteracting them. Should they be instrumental, in any degree, to bring about a better mutual understanding, and thereby lead to a stricter rendering of justice and a greater harmony of action, our object will be fully attained.

Necrological Essay.

By Jno. T. Scott, M. D., *New Orleans:*

IT was with profound feelings of regret that we heard of the death of Dr. J. L. Riddell. This regret after death is retrospective affection; and this feeling prompts us to make an offering to his memory, as a tribute from the hand of affection, desiring to embalm that name in the records of this Journal.

Dr. John Leonard Riddell departed this life on October 7th, 1865 His death was apparently sudden and unexpected, but to his more intimate friends it did not appear in that light. He had given evidence, some months previous, that the deplorable event was approaching — that the "silver cord was loosening," and the "golden bowl" about to be broken. During his whole life his brain had been an active one, but during the few brief months preceding his dissolution, his mind, which had already given signs of failure, was greatly agitated on political subjects, and the excitement seems to have contributed in hastening the fatal result.

The natural desire which attaches to men, to lift their individuality from the unknown mass and write their names on the immortal scroll, continually demonstrates that law of our being which teaches us to abhor annihilation, and manifests an instinctive love of a future life beyond the grave. It is pleasant for us to observe those who, though physically dead, are still living in the memory of men and influencing their actions — having wrought out for themselves an imperishable name among their fellows. But what painful feelings attach to the idea of those who have gone down to the grave "unwept and unsung;" engulphed in a perpetual oblivion. How powerfully this stimulates the wish in ourselves to emulate the glory of distinction. How strongly this immortality in the records of men shadows forth that immortality of life which has been revealed — that life in another world beyond the tomb. This principle is the life-giving spirit of the world, and furnishes its main progressive agent; as it also stamps with its powerful analogy the truth of a future existence; and how transcendent is the hope of that eternal life, which will be measured and adjusted on the scale of infinite and infallible Justice hereafter.

Some men, by an inborn genius, have raised their names to immortality; others, in the midst of convulsions, have been cast up to

eminence by attaching themselves to uprearing circumstances, and thus, as beacons of the storm, have acquired an enduring life. But the larger class have handed their names to posterity by a constant and indomitable purpose traversing a life of industry, developing results so useful to civilization as to secure for them an abiding and honorable record. These form that large class, who are the *practical* benefactors of mankind; blending their numberless names in a sheen of glory, forming that brilliant galaxy stretching over the *dark* firmament of human history. Dr. Riddell belonged to this latter class of names, who, by a persevering effort, have been in some measure the architects of their own fortune. During a life of fifty-eight years, he devoted himself with a persistent energy to scientific pursuits, with a palpable reward; directing its whole course with a conscientious desire to do what was right; and adorning it with continual acts of kindness, which won him numerous personal friends.

The records of his genealogy, which seem to have been preserved with care, reach back to the mother country and to a remote age. A thought here interweaves itself with this obituary narrative, suggested by that natural desire in man, of tracing back his ancestral line and knitting his history with the most remote antiquity. It is considered honorable and distinguishing thus to trace back the family descent, to reveal its *strong vitality*, and *firmly root* it in the mass of the great Brotherhood of Humanity; and through whatever channels and crossings it may run; into whatsoever depths it may plunge, or whatsoever heights it may ascend, the balance is preserved, and the purifying influence of antiquity sanctifies it, and it is with pride and satisfaction that we preserve the record. This law of our nature, inclining us to link ourselves with the race of man, would indicate not only an instinctive self-love, but the existence of a higher and more abstract love we bear for the race in its totality. Here is *philanthropy*, pointing with this analogy, and combining with other philological proofs to confirm the truth of the teaching of Revelation, that we are indeed a great brotherhood, descended from the same parentage; and if it were possible to trace back the lineage of each individual of the race, they would converge to a common centre, developing a powerful demonstration of our common origin.

The human race, subjected through ages to the ceaseless grinding and degrading action of sin and misery, has been disintegrated, almost losing its coherence and fellowship, the floods of time depositing them stratified into races, whose *types* seem to be permanent

and unalterable. It is the duty of philosophers to coöperate with Christianity, bringing civilization under its guidance and perfect control, restoring this lost fellowship and unity of the human race. The life of every virtuous man coöperates in bringing forward this great result; obliterating the dreadful cleavage of sin.

Dr. Riddell was born in Leyden, Mass., on the 20th Feb., 1807. He was the son of John Riddell, of Preston, N. Y., and Lephe Gates. His great-grandfather came to this country in the year 1737, from the North of Ireland, and the family claim to trace their genealogy through Scottish channels as far back as the year A. D. 727.

He obtained his degree of A. B. and A. M. at the "Rensalaer School," of Troy, N. Y., after which he was engaged in lecturing on scientific subjects for some time. In 1835, he was appointed Adjunct Professor of Chemistry and Professor of Botany in the Cincinnati Medical College, and it was here he received his degree of M. D. In 1836 he was appointed Professor of Chemistry in the Medical College of Louisiana, at present the Medical Department of the Louisiana University, and under the patronage of the State. This chair he retained until his death.

In 1838 Dr. Riddell was engaged in a scientific exploration in the State of Texas, creditable to his energy and scientific attainments; and when he returned to New Orleans, he found that the President of the United States had appointed him "melter and refiner" in the branch mint of this city. This office he held until 1849.

The scientific contributions from his pen have been of a varied character, evincing great industry and perseverance, and a close observation of nature—untiring as he was in his endeavors to unlock her stores of knowledge, and interpret her mysteries. In 1835 he published a catalogue of plants, entitled "A Synopsis of the Flora of the Western States," and constituting one of the pioneers of the botany of the West. Subsequently he published a catalogue of the plants of Louisiana, and was the discoverer of numerous new species; and one *genus* of plants, called for him "Riddellia," has indelibly impressed his name in the science of botany.

He was the author of numerous contributions to the "*New Orleans Medical and Surgical Journal*," on subjects correlated to the medical and chemical sciences, and on numismatology.

In 1844 he was appointed one of the commissioners by the Governor and Legislature of Louisiana, to devise some means to protect this city from overflow.

Immediately after this period, Dr. Riddell began to devote assiduous attention to microscopy, and the invention of the binocular microscope was the result of his researches in that branch of science. This invention stands recorded to his credit in that great work, entitled "The Encyclopædia Brittanica."

It would be impossible, as well as useless, to narrate all that would redound to his credit as a faithful laborer in the field of science. But

enough has been recorded to refresh our esteem for his memory; and it should form an incentive to every thinking mind to emulate the zeal he displayed, and to join hands in the glorious work of contributing to the advancement of human knowledge — unfolding and perfecting our civilization, and bringing it under the dominion of Christian Morals.

Notice to Subscribers.

THE Proprietors are happy to express the high degree of confidence which they feel in the success of their endeavor to revive the *New Orleans Medical and Surgical Journal*, and believe that nothing is wanting to restore it to its former prosperity but the renewal of postal accommodations. These are gradually being reestablished, and in the same degree our subscription list, already respectable, is swelling.

We have to express also great gratification at the commendatory notices bestowed on us by the press generally, and especially the kind greetings and words of encouragement from our professional brethren. Not only is all this pleasant, as indicating a kind feeling towards us and an appreciation of our labors, but it will serve as a stimulus to endeavor to make our work more acceptable and valuable.

Since our last issue Dr. Chaillé has departed for an absence in Europe, which may be prolonged, and which, it is hoped, will promote the interests of the Journal; as he will engage correspondents in several of the principal cities, besides furnishing the most valuable of the foreign journals and other medical literature of the day, and affording the result of his own observations. In this way we shall soon be reëstablished on our old footing, as regards foreign intelligence.

We are gratified to be able to announce that meanwhile Dr. S. S. Herrick, of New Orleans, will be associated in the editorial management. Dr. Herrick not only brings to the Journal a mind well acquainted with general literature, but is a ripe classical scholar and well versed in medical and scientific knowledge. During his brief connection with the management, he has already exhibited a zeal and judgment that are highly satisfactory to the proprietors, and they feel no hesitation in predicting that he will commend himself in an equal degree to all friends of the Journal.

It was intended to include in this number some remarks upon the present visitation of cholera, as well as the health of the

city during the last two months, and a consolidation of the weekly mortuary reports. Owing to the very recent establishment of the existing health regulations and the imperfection of the returns from the various places of interment, this has been found impracticable. In the next issue we hope to be able to offer a history of the present invasion of cholera, together with an exposition of the health ordinances lately adopted by the municipal government, and some account of the success of their working.

List of Journals Received.

Atlanta Medical and Surgical Journal—July and Augnst. Edited by Drs. J. G. and W. F. Westmoreland.

The Cincinnati Journal of Medicine—July and August. Edited by Drs. Geo. C Blackman, T. Parvin and R. Bartholow.

The Cincinnati Lancet and Observer—July and August. Edited by Drs. E. B Stevens and Jno. A. Morphy.

Medical and Surgical Reporter (Philadelphia)—July 7, 14, 21, 28; August 4, 11 S. W. Butler, M. D., editor.

Medical Times and Gazette (London)—July 7, 14, 21, 28; August 4.

British Medical Journal—July 7, 14, 21, 28; August 4.

The Medical Reporter (St. Louis)—July 1, 15; August 1, 15. Edited by Drs. J. S. B. Alleyne and O. F. Potter.

The New York Medical Journal—July and August.

American Journal of the Medical Sciences—July. Isaac Hays, M. D., Editor.

The Richmond Medical Journal—July and August. Edited by Drs. E. S. Gaillard and W. S. McChesney.

The Medical News and Library—July and August. Henry C. Lea, Phila.

The Boston Medical and Surgical Journal—July 19, 26; August 2, 16. Edited by Drs. Samuel L. Abbott and Jas. C. White.

Southern Journal of the Medical Sciences—August. Profs. D. W. Brickell, C. Beard and W. S. Mitchell, Editors; Drs. D. P. Fenner, A. W. Perry and Jos. Holt, Assistant Editors.

The St. Louis Medical and Surgical Journal—August. Drs. M. L. Linton and Frank W. White, Editors; Drs. Jas. W. Clemens and Gust. Baumgarten, Associate Editors.

The Druggists' Circular (New York)—August.

Gazette Médicale (Paris)—July 7, 14, 21.

Chemist and Druggist (London)—July.

American Journal of Science and Art (Silliman's)—July.

The London Lancet—July and August. W. C. Herald, N. Y., Publisher.

Buffalo Medical and Surgical Journal—June and July. Edited by Julius F. Miner, M. D.

The Chicago Medical Examiner—July. Edited by N. S. Davis, M. D.

Pamphlets Received.

Why Not? A Book for Every Woman. By Horatio Robinson Storer, M. D., Prof. of Obstetrics, etc. Pp. 31. Boston: Lee & Shepard. 1866.

Conseils pour se Conserver et se Guérir du Choléra Morbus. Par J. Cl. Gouguet, Docteur-Médecin de la Faculté de Montpellier, ex-Chirurgien de Marine en France. Pp 32. Vermillionville, La. 1866.

Record of Facts in relation to the Dismissal of the Faculty of the Medical Department of the University of Louisville. Published by the former Faculty. Louisville, 1866.

University of Nashville—Medical Department. Catalogue for the Session, 1865–6, and Announcement for the Session of 1866–7. Nashville, Tenn., 1866.

Eighth Annual Announcement of the Chicago Medical College, for the Session of 1866–7.

THE

New Orleans Medical & Surgical Journal.

NOVEMBER, 1866.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays

Art. I.—FEMALE DISEASES:

Read before the Mobile Medical Society, May, 1866: By F. E. Gordon, M. D., Professor of Obstetrics, Medical College, Mobile, Ala.

It is a pleasant thought that civilization, which has elevated woman from the mere servant to be the companion of man, has interested in the study of her sexual maladies, once thought degrading, some of the best minds of the medical profession. Witness such men as Kiwisch and Scanzoni, in Germany; Paul DuBois and Cazeau, in France; Robert Lee, Tyler Smith and Simpson, in Great Britain; and in the United States, Hodge and Meigs, of Philadelphia; Bedford, Gardner and Gaillard Thomas, of New York; Byford, of Chicago; Miller, of Louisville; and in our own city our distinguished President, whose matured judgment and skillful hand are ever ready in her behalf. It is but a meet tribute to that sex who, like Florence Nightingale, have braved the poisonous effluvia of typhus and erysipelas, and dressed the wounds of thousands of brave men, who have fallen in this fratricidal war.

> "Oh Woman! in our hours of ease
> Uncertain, coy and hard to please,
> And variable as the shade
> By the light quivering aspen made,
> When pain and anguish wring the brow,
> A ministering angel thou!"

I propose to make a brief summary of my experience in some of the more common forms of uterine affections, and hope to be excused for the too frequent use of the pronoun I, which is inseparable from a narrative.

In the first place, let us take a case of acute inflammation, such as we often see in a washerwoman who subjects herself to severe straining in lifting heavy tubs, even during her menstrual periods, not to mention the wetting of the clothes incident to her occupation. Here we have the heat, pain and increased weight of the engorged organ, with distress in the loins and in micturition; and superadded to all these we have constitutional disturbance enough to produce fever. Now what is the most rational course to pursue in subduing the fever and inflammation? If you turn to any treatise on the subject, you will find the first direction is to bleed your patient, if she is vigorous enough to bear it; next, abstract blood from the uterus by leeches or scarification; then purge, use emollient and anodyne injections, and apply poultices. Rest in a recumbent position is indispensable under any form of treatment. This reiteration of bloodletting, as the leading remedy, is confined to no particular disease, but is common to all the phlegmasiæ and to many fevers; but, in point of fact, it is a precept "more honored in the breach than in the observance." The topical abstraction of blood, but for its inconvenience, would be attended with much less danger to the patient, depleting the organ directly, with a small waste of the pabulum vitæ. But when we consider the repugnance of women to the exposure necessary for the application of leeches, the horror of the animal entertained by most females, and the pain of the bites, we can very well understand how little favor attends this procedure in private practice. Besides, our country friends are entirely cut off from this form of local depletion. Scarification is also liable to many of the objections above alleged. It does not relieve the vessels so freely, and by leaving wounds to be healed invites a renewed flow of blood to the parts intended to be disgorged. That this train of reasoning is insensibly adopted by most practical men, I think is proved by the manner in which they avoid these remedies and substitute less disagreeable means. For my part, I do not see why a metritis may not be treated like an orchitis or conjunctivitis, with tartarized antimony and sulphate of magnesia in decided doses. Who cares to waste time, to say nothing of the trouble and expense, in applying leeches to the testicle, or what is more objectionable in the neighborhood of

the eye? On this hint I have sometimes acted, and with the best results; and another remedy in orchitis, the value of which I learned from Dr. Nott, might be pressed into service in violent cases: I mean the tobacco poultice; but it would have to be used with more care on the abdomen than on the scrotum. Really, we know so little of the *modus operandi* of medicines, that some of our best practitioners still are in doubt whether the advantage derived from the local abstraction of blood is anything more than the effect produced on the nerves of a part; and I have not observed any great difference in the success of country practitioners, who use cold epithems, sinapisms and poultices, and our city doctors, who have had the run of the hospitals of London and Paris, and come home profoundly impressed with the inestimable advantages of cups and leeches. Still there are cases where leeches prove of good service, and may be occasionally resorted to with advantage to the patient.

Warm hip-baths, by their revulsive effect, are a great relief to some, and a dose of calomel, by unloading the portal circulation, is at times very beneficial. Anodynes, especially morphia, are great favorites of mine in all cases of pain, irrespective of fever.

In chronic metritis you have a more decided change in the structure of the organ. There is, according to some pathologists, extravasation of blood in the intermuscular cellular tissue, besides the usual lymph deposits of inflammation. I sometimes try the careful exhibition of mercury in alterative doses, and prefer the bi-chloride, 1-16 gr. three times a day. I have tried the tr. antacrida, so much lauded by Dr. Fenner, but most persons complain of the taste of the Canada balsam and oil of sassafras. The effect is the same, being due to the mercury in it. Iodide of potassium in five gr. doses two or three times a day, in comp. syrup sarzæ, has answered well in my hands, with the addition of vaginal injections of Lujol's solution in water. I may say that I have thus succeeded, better than with any other means, in combatting these troublesome cases. Warm hip-baths and medicated injections are also useful here, and are praised by Seanzoni, as liquefying the deposits preparatory to absorption.

Displaeements of the uterus are a great vexation to the physician, and they are far more distressing to the patient. Anteversion does not produce as much constitutional disturbance as the opposite condition, for the neck being smaller, exerts less pressure on the rectum, and defecation is less interfered with; while the vesical tenesmus seems common to both affections, and is produced by the dragging

on the vagina, independent of the increased bulk of the uterus resting on the bladder.

Retroversion interferes with the regular distribution of the blood through the womb, deranges menstruation and provokes leucorrhœa. It lessens the chances of impregnation, and, if complicated with pregnancy, endangers life. It gives rise to a host of maladies, called sympathetic disturbances. It is very easy to diagnose these two affections by the finger alone, and in doubtful cases by the sound. In the great majority of them it is likewise easy to replace the organ in position, but it will remain thus only so long as the instrument is in the cavity.

What means have we, then, at our disposal to retain the uterus when replaced? If it be engorged or hypertrophied, it is well to counteract this condition by appropriate treatment. Indeed, some writers think that this is the secret of the whole matter, and that there can be no displacement without an enlarged womb. Dr. Hodge seems to think that, even if this view were the true view, his plan of treatment is the best—"place the uterus in splints," and it will get well—just as a broken leg. But, unfortunately, in many instances the vagina is relaxed and the ligaments elongated and flaccid. Perhaps the womb, after labor or abortion, has not undergone involution or a proper contraction, and simply lapses by its weight or falls backwards. In this latter condition ergot acts well, and as it is usually accompanied by hæmorrhages, I am in the habit of giving it with iron, according to the following formula: ℞.—vini ergotæ, ℥ii.; tinct. mur. ferri, ℥ij. m. s.; teaspoonful three times a day in water. In endeavoring to increase the tonicity of the vagina and ligaments, I have used with the best effects a pill thus composed: ℞—Pulv. ferri, ext. cinchonæ, ää. ℥ss.; strychniæ, gr. 1. m.; ft. pil. No. xxx.; one three times a day. Injections of sulphate of zinc or alum prove useful by their astringency, and should not be neglected in addition to general remedies.

With regard to the vexed question of pessaries, I may say that I set out with strong prejudices against them, but ultimately determined to try them fairly. I soon found that in my hands none of them would hold the organ in position, except the intra-uterine of Simpson or Valleix, the latter being more easily introduced. But I found that, in spite of the assurances of these gentlemen, but few women could tolerate the instrument, and that they had to be subjected to confinement and deprived of exercise; and that, even with

these cautions, there was some hæmorrhage or leucorrhœa induced by its irritating effect on the cavity of the uterus, and, after all, the discomforts attending the wearing of it for a month or two, upon its withdrawal the displacement returned. Dr. Hodge's horse-shoe, which is a modification of the elastic ring pessary, is a great favorite here. I confess that, after many trials, I have not been able to succeed with it; it either presses up too much on the bowel and impedes the passage of the fœces, or down towards the pubis, the end of each leg being an irritating point. The hard-rubber bow pessary, a new form of the closed lever, is the fashion at present, but is liable to the same objections. The yielding nature of the elastic ring allows the unloading of the bowels, and yet distends the vagina enough to push up the uterus. I have, however, seen it embedded in the vagina, granulations having entirely closed over one-half of the circle. The name of pessaiers is legion, and each has its advocates and its advantages — the soft sponge and air cushion, in irritable conditions; the globe, for anteversion; the pessary of Dr. Heard, which came near amputating the neck of the uterus for one of my patients, but which I find figured by Moreau in his atlas, looks as plausible as any other. There are also pessaries like Schilling's, for dilating the posterior wall, and some attached to an abdominal supporter, a good way of support in extreme prolapse. This latter instrument, after having been tabooed by the profession for many years, seems to be gaining ground once more, and is favorably mentioned in the two most recent works on Gynecology that I have seen. It was one of the few jokes ever told of professor Hodge, that he had dubbed it before his class "the abominable supporter." The pressure of a pad over the pubis takes off the weight (super-incumbent) of the abdominal viscera, and, by fixing the uterus, prevents the pain of jolting it. It ought to be more useful in anteversion than in retroversion, as the pressure reaches more readily the front. I have used lately an improvement on the bow pessary, which has the power of elongating or shortening itself, to suit the changes of position. It is very ingenious, and I think, from a trial of it in several difficult cases, worthy of attention.

I think I have derived benefit from swabbing out the cavity of the uterus with perchloride of iron. By winding a dossil of lint or cotton around the sound and saturating it with the solution of full strength, it will be found easy of introduction. Probably the greater portion of the iron is lost in the cavity of the neck by the

compression of its orifices, but a small part of it remains on the cotton, even after its withdrawal, and from its constringing effect on the cavity must be of service. It is very noticeable that the irritable condition of the organ is lessened by this plan, much as we see in stricture of the urethra after bougies; and uterine colics are less severe and frequent, probably more from the dilatation than from the topical medication.

I have cured two cases of extreme prolapsus of recent origin; in both cases the womb protruding between the thighs, and one of them menstruating in this condition while confined to the hospital, by the use of the ring pessary. In one of them I used Sims's flexible metal, and kept it in until pregnancy was three months advanced. I have very little encouragement to give from my experience with old cases. Operations on the vagina by neither knife nor caustics have given satisfaction, and they are painful and hazardous. Amputation of the cervix has been tried by Hugnier and Chassaignac, and with good results. Dr. Nott has operated for me on two cases with enlarged necks. One of them was much benefited for a time, say six months, but the hypertrophy is returning; the other is a confirmed case of hysteria.

Flexions of the uterus are still more unpromising than versions. Late investigations seem to show that a softening of the tissue takes place at the angle formed by the bending of the organ. All the symptoms of version exist, and the interruption to the circulation is greater, and the egress of the catamenia more difficult. The body of the uterus is enlarged, and contains fluid—often blood or a thin mucus amounting to hydrometra—though I have never witnessed the immense distention that obtains in other forms of uterine disease. It has been proposed, in cases of confirmed flexion where it is impossible to straighten the womb, and when, if practicable, the force exerted would rupture the fibres and produce metritis, to divide the internal os; and some have gone so far as to practise an operation for making a new channel more direct and open than the old one. It is consolatory, in view of the hopelessness of a radical cure of this affection, to record the opinion of Scanzoni, that "flexions of the womb do not acquire any importance, nor are followed by any serious dangers, save when they are complicated with an alteration in the texture of this organ." His recommendation is, to apply a few leeches every week or two, in hope to relieve engorgement and the pathological changes that result, and by subduing in-

flammation to keep the patient comfortable. He cites several cases, where the autopsy proved the existence of this condition, and where patients dying of other diseases had never been seriously incommoded by this mal-organization. I had an instance lately, of a lady who came to this city for advice, which strongly corroborates this opinion. She has been married twice, and, as one would naturally suppose from her history, sterile; but she is now upwards of thirty, and though delicate, has menstruated scantily, but regularly, and enjoyed a fair share of health, with but two exceptions — one about six years ago and again recently — both probably inflammations produced by cold or fatigue, to which the flexion predisposed. This is the most extreme case of anteflexion I have ever seen, and conveys to the touch the feeling of a tumor along the anterior wall of the whole vaginal canal. Besides attempting to subdue inflammation, I divided the posterior lip freely, as the external os was impervious even to a small sound. She now menstruates with more ease, and I hope may become pregnant.

There occurred some months ago quite an interesting discussion before the Obstetrical Society of London, on the subject of dysmenorrhœa. Drs. Sims and Bennet had previously discussed it in the *Lancet*, the former contending for its purely mechanical origin, and advising free division of the neck of the uterus by the scissors, as the remedy. In this form of difficult menstruation, Dr. Simpson's mode of operation, by a mere linear incision through the strictured parts, seems to be free from the dangers of hæmorrhage, and equally successful as the other. In the course of the discussion very few of the surgeons present, and they were the ablest obstetricians of London, were willing to admit that they had divided the internal os. In the few operations that I have performed of this character, I introduced the uterotome an inch and a half before cutting, and thought that I had failed in completing the cure, when the instrument did not penetrate to this point. I have had two striking instances of the benefit of this operation, in ladies who had been subjected to treatment for years under the most intelligent physicians. In both of them impregnation took place a few months after the incision.

But, unfortunately for the sex, dysmenorrhœa is due to many other causes, such as derangement of the digestive organs, gouty or rheumatic diathesis, hysteria or neuralgia, inflammation of the os, and from ovarian irritation. It is very plain that nothing less than an appreciation of the cause and an attempt by constitutional and

other remedies to remove it, can prove efficacious. We have all had our tilt with the "irritable uterus," and few of us have come off any better than Don Quixotte with the wind-mills. Some women are so constitutionally nervous, that as soon as the period approaches, they become chilly, with cold feet and clammy hands; pain reaching along the ligaments to the ovaries; distressing nausea and retching. Again we have others with expulsive pains and contortions like those of childbirth, in which patches of membrane of greater or less size are forced out with temporary relief. Tyler Smith suggests that, during the monthly nisus, the epithelium lining the cavity of the uterus slowly melts away, and the blood gently flowing from the denuded surface constitutes the catamenia. If this be the physiological condition, anything that interferes with this periodical moulting and causes it to come away irregularly and in flakes, may give rise to the pain and attendant phenomena. In such cases the plan of swabbing the uterine canal, in the manner alluded to above, I can safely recommend. It is equally useful when menorrhagia succeeds the dysmenorrhœa—a thing of not unfrequent occurrence. Iodine and iron are the substances preferred, according to the effect desired, whether alterative or astringent.

Uterine leucorrhœa has for its source of supply the glands of the cervix. It has been abundantly proved that these glands, in a normal condition, secrete a bland fluid like the white of an egg, just enough to plug its canal. Inflammation, from whatever cause produced, excites a greater flow of this secretion, and it becomes more highly colored and sometimes tinged with blood. If this is allowed to go on, the discharge becomes more acrid, and excoriates the os as it trickles over it, removing the epithelium and causing those abrasions called ulcers, more or less superficial according to the time of their duration. The blood vessels which supply the lining membrane of the cavity being in communication with those of the parenchyma, we often find the two structures simultaneously affected. It is in this affection that caustics, such as nitrate of silver, acid nitrate of mercury, and the like, have gained a deserved reputation. There is no other plan by which you can reach the diseased surface with equal facility and accuracy. Some prefer the silver in substance; some in solution; some in ointment; while others like nitric acid or the acid mercury. The mode of applying these substances, whether lightly or more severely, will make one answer nearly as well as the other. In inexperienced hands, certainly the nitrate of silver is the

safest. Perchloride of iron, where there is a feeble and lax state of the parts, is equal to any of them.

In controlling metrorrhagia resulting from intra-uterine fibroids, I wish to record my decided conviction of the value of bromide of potassium: that it also lessens the pains attending this condition, I have satisfied myself from the observation of several bad cases. In the reäction which must follow the present tendency to overrate the value of a new remedy, I hope its usefulness here will not be overlooked. I observe that in Germany, where this practice originated, from the success attending the use of waters containing bromine, both internally and for baths, Scanzoni classes bromide of potassium with the iodide of the same salt, and does not rely on it in these tumors. There is one remark that he makes which deserves attention, and that is to this effect — that the enlargement of the walls of the uterus which attends fibroid growths, is influenced by alteratives, but not the tumors themselves.

With regard to such tumors as are developed in the parenchyma of the womb (interstitial), or such as crop out on the exterior (subperitoneal), I have seen no operations attempted. In two cases of large fibroids attached to the fundus of the uterus, I have attempted operations. The first was a lady from the interior, of naturally fine organization. She was reduced to extreme anæmia, from the long continued and excessive hæmorrhage, and had waited a long time for the tumor to descend into the vagina, so that it might be ligated; but as she was nearly exhausted and longed for relief, her physician gave her Meigs's chapter on the subject, in which he says he sent a patient home, with the assurance that she must prepare to meet death with equanimity, for an operation within the uterus was hopeless. By means of a double canula, like Gooch's, with a screw attached to tighten the thread, the tumor, about the size of a medium pear, was strangulated and dropped off on the third day. During the time between its ligation and expulsion, the lady was hovering between life and death, with a flickering pulse and ghastly countenance. Our chief reliance was brandy and opium. She afterwards reäcted, and is now a stout and rosy-faced woman. The other case was not so fortunate. She had been for years suffering with menorrhagia, and metrorrhagia latterly. She had not been examined for years, and generally used her own domestic remedies for checking the flow. At last she assented to the request of her daughter to have an examination made, and I found a very large intra-uterine

fibroid. As death was imminent, I advised her, as her only chance, to submit to an operation. Dr. Nott very kindly assisted me in the attempt to remove it. The pedicle of the tumor was so short and broad, and its attachment so high up the fundus, as to make it one of the most difficult manipulations to throw a ligature of any description around it. We tried annealed wire, thread, etc., and finally, upon tightening the wire, when we thought we had included the tumor, the ligature snapped. The *écraseur* was tried a second time, after a few days' rest. A larger wire was with difficulty applied, and upon attempting to cut through by steady traction, it gave way. Here we abandoned the operation. Great constitutional disturbance ensued, with deadly pallor and nausea. The discharge from the vagina became darker and more offensive, and about the third day I found the tumor detached and decomposing. But before I had the means of extracting it, she was sinking so rapidly that I thought it advisable not to disturb her. I forgot to say that the tumor was as large as a small cocoanut, and the *cervix uteri* had entirely disappeared by expansion; but we were compelled to make an incision about two inches in length from the *os*, in order to facilitate the operation. In this case, and perhaps in both cited, the knife would have been safer, for the hæmorrhage might have been controlled by plugging with perchloride of iron, and we could have avoided the stench and poisonous influence of the decomposing mass.

The more I have been called on to treat diseases of this character, the stronger has grown my conviction that organic diseases, involving a change of structure, admit too often of only partial relief. He must be a bold man who promises a cure under such circumstances. In acute diseases, especially of the self-limiting kind, nature is competent to relieve the system, if you wisely assist her efforts, or even refrain from mischievous interference.

ART. II.—SYPHILIZATION:

By S. S. HERRICK, M. D., New Orleans.

THOUGH all agree that genius is, and must be, a rare endowment, and the wisest know it to be a dangerous gift to its possessor, its brilliancy makes it generally coveted, and the wish often runs away with the judgment. Hence the incessant aim of every

ambitious mind after some great creation, or search after some great discovery, in the hope that the world will recognize the inspiration of genius and spare from impending oblivion. The test of these claims to immortality is success, and as "Time tries all," the great majority sink into merited forgetfulness, while a few live to perpetuate the fame of their authors. The subject now under consideration is still too recent to have been already decided before this tribunal, but as it is one of considerable interest and receives frequent attention from medical writers, I purpose briefly to discuss its merits.

It is rather more than twenty years since experiments were made by M. Auzias-Turenne, to test the dictum of Hunter and Ricord, that syphilis is not communicable to the lower animals. It is a matter of dispute whether he succeeded in inducing the usual consecutive symptoms; but he attained results on which he built a new theory, and founded a plan of treatment which is termed *syphilization*. On repeated inoculation of animals with the virus of venereal sores, he found that the artificial ulcers first in order exceeded the second in size, virulence and duration, and that in successive inoculations the severity of the results gradually diminished till no effect was produced. His reasoning was, that at each inoculation a fresh portion of the poison was absorbed, and he ascribed the acquired immunity to a saturation of the system with the poison. He naturally inferred that the same results could be produced in man, and in 1850 he was ready to propose to the French Academy to employ repeated inoculations not only for the cure of syphilis, but as a prophylactic means, whereby mankind might be as effectually protected against syphilis as against small-pox by vaccination. His plan of prophylaxis, however, met with no favor, even in France, but the practice was imitated by Sperino, of Turin, in 1851, and has been extensively employed by Bidenkap and Boeck in Norway, and by the latter introduced into Great Britain.

Dr. Boeck, of Christiana, has become an enthusiastic believer in the efficacy of this plan of treatment, and has made use of it more than any other individual. From his high standing as a man of integrity and scientific attainments, his authority on a subject to which he has devoted so much attention possesses great weight; and as the best means of affording a clear understanding of the new system, the following quotation is presented from a paper published by him in the *London Lancet*, in 1865:

"My treatment of the primary sores is very simple. I cover them with lint dipped in sulphate of zinc solution (two grains to the ounce of water), and now and then I touch them with nitrate of silver, just as I would treat common ulcers. To use mercury is of course quite out of the question, and as a general rule I do not undertake to treat persons by syphilization who have been treated with mercury for their primary ulcers.

"To commence syphilization, I take some matter from a primary syphilitic ulcer, usually from an indurated chancre, or else I take it from an artificial ulcer on some one who has been treated by syphilization, and on whom the ulcers result from an indurated chancre. I inoculate this matter on both sides of the chest in a similar manner to that in which vaccine matter is inoculated, being, however, more careful to bring it into the skin, because it does not take with such facility as does vaccine matter. I apply three inoculations on each side; not that I would not have the same result from one inoculation alone, but it sometimes happens that single inoculations do not take, and therefore I generally make three. However, if it is decided to avoid having too many cicatrices, one inoculation may be made at a time at first, and afterwards more, when the pustules and ulcers have become smaller, and when also the matter will take with less facility by reason of its being a later period of the treatment.

"After three days I inoculate again, taking the matter from the pustules that were developed from the first inoculation, and being careful to apply the second inoculation at a good distance from the first one, in order to avoid the possibility of the ulcers running into one another, and thus causing large cicatrices. This precaution ought to be observed for the six or seven earlier inoculations.

"At the end of three days I make the third inoculation with matter from the second one; and so I continue inoculating every third day, always using matter from the last pustules until it will take no more. Then I employ fresh matter, generally from another person who is being treated by syphilization, and now continue with this matter to inoculate both sides in the same way as with the first. This second matter will bring forth smaller pustules and ulcers than the first, and the series of inoculations will also be shorter. When this matter also refuses to take any longer, I use a third one, and go on in the same way, still inoculating at the sides. This third matter will produce but very little effect at the sides, and only take for a short series of inoculations. When it takes no longer at all, I begin with a new matter to inoculate on the upper arms, where the pustules and ulcers will not be very small; and at the same time I go on inoculating at the sides of the chest, where the effect will be quite indifferent. It will not be possible, however, to make so long a series of inoculations in the arms as were made at the sides. When the first matter that was inoculated at the upper arms will take no longer, the inoculations must be continued at this place with a new matter, in the same way as I have described for the inoculations at the sides; and when the same result is attained on the arms as at the sides, I go to the thighs, and proceed there just as in the other places. Most frequently it will still be possible to get some well-developed pustules and ulcers in this last place, but it will not be long

ere a negative result is obtained, and new matter required. As general immunity is approached, it will be found that every fresh matter will take for a shorter series of inoculations than the last. At length it will perhaps just take once or twice. On the thighs it will generally be possible to inoculate several times with fresh matter, and with such a result. When no matter whatever will take any longer on the thighs, general immunity has supervened, and even if it should prove possible to get a positive result from inoculation in some place or other after this time, it is of no practical significance.

"Before concluding my description of the way in which I make the inoculations, I must insist on the absolute necessity of the treatment being carried through with scrupulous regularity. Inoculations must be made every third day, and, in case they do not take, a new matter must be tried. The treatment is easy enough, but if the strictest regularity is not observed, and if one does not carry it through until immunity is obtained, the treatment ought not to be called syphilization. I cannot insist too strongly upon this point, because some people have commenced syphilization in order to cure syphilis, but have discontinued it after having made a certain number of inoculations, and afterwards complained of their syphilization being a failure.

"These continued inoculations will have occupied a period of three, three and a half, or four months. The time will occasionally vary, partly owing to the difference of intensity in the virus, partly to the individuality of the patient. Virus taken from the simple chancre or from the suppurating bubo has the greatest intensity. It may be inoculated through a longer series, and the time occupied by the treatment will be longer. It has occurred to me several times when I was using that kind of virus, that the phenomena continued unchanged for weeks, but this still remains to be more closely investigated.

"The artificial ulcers that will come forth in consequence of the inoculations must be dressed morning and night with cerate, or else during the day with linen dipped in water; or, if there is any smell from the ulcers, in chlorine water. The patient can be out of bed during the whole course of treatment, and may move about in the open air as much as he likes, temperature making no difference—that is to say, he can stand 17° (Fahr.) below zero, and 86° of heat in the shade without any inconvenience to his ulcers; whether he might be able to stand a still higher degree of cold or heat without its doing any harm has not yet come within my experience.

"With respect to the diet, I let the patients in the hospital have full allowance, and in my private practice I let them eat whatever they choose. As to their drink, I make some restriction: of wine I only let them have a mild claret in small quantity, and of the stronger liquors and of ale they are likewise allowed but a small quantity. Tobacco, for smoking or chewing, is not allowed during the syphilization, and for some time afterwards, because the irritation of the mucous membrane that it occasions will call forth and maintain ulcers.

"It sometimes will happen during this treatment that mucous tubercles of the anus, etc., do not vanish very quickly. I then have to

touch them with nitrate of silver, and the nearer the case approaches completion the more speedily will these phenomena disappear. It will not unfrequently happen that a new exanthematous eruption will take place during the syphilization; but this is of no consequence. You go on inoculating quietly as before, and so you do also even if iritis occurs, the only thing that is requisite besides the inoculation being to drop a solution of atropia into the eye; leeches, cold-water cataplasms, etc. are quite superfluous. I never even till lately used to drop in atropia, but in one case I had such excessive exudation in one pupil that the sight suffered from it. Even now exudations sometimes occur, but they are so insignificant that they can only be seen with a magnifying glass, and do not at all hurt the sight."

The general health, whenever impaired during the previous progress of the disease, he avers to improve under this plan of treatment, and to be quite restored by the time the specific symptoms disappear. Should these symptoms recur, he observes that a second course of treatment terminates in a much shorter period, for "the organism never returns to the same point, with respect to the reaction against the syphilitic virus, as it exhibited before syphilization."

In what way the use of mercury in the primary stage interferes with the success of his treatment, Dr. Boeck does not attempt to explain, while he maintains that his own is the most efficient plan in relapse after the mercurial treatment. The inoculations sometimes take effect only with great difficulty, and in these cases advantage is derived from the use of iodide of potassium.

It is claimed by the advocates of "syphilization," that the percentage of relapses is far lower by this treatment than by any other, and it is asserted that Prof. Boeck has met with none since he commenced using the virus of indurated chancres. Why the difference should be in favor of the latter virus might be difficult to explain upon any theory of syphilis, since the partisans of the new method maintain that the poison of the soft sores differs from that of the hard only in being more intense in its action. If so, it would seem that it should be more efficient as a curative agent.

Here it is to be remarked that the practice of "syphilization" is entirely at variance with the idea of a duality of poisons producing venereal sores, and sets at naught the observations and teachings of the most distinguished writers on the subject at the present day. The modern doctrine of the indurated or true chancre, almost invariably single, never autoinoculable, to which the system is but once susceptible, is incompatible with the theory of Auzias-Turenne

and his followers. If they and the other "unicists" can find arguments to overthrow the dual theory, based upon pathological reasoning, they have yet to meet some notable facts in history. Venereal ulcers, attended with suppurating buboes, frequently becoming phagedenic but never followed by the symptoms classed as consecutive, have been known and described by medical writers from Hippocrates to the present time. The description of Celsus is remarkably particular and exact; and the identity of the disease then existing with the modern non-infecting sores cannot be mistaken. But until 1494 European writers were entirely silent on what is now known as constitutional syphilis, and we have no reason for believing that it existed in Europe previous to the return of Columbus from his first visit to America. The remarkable outbreak of this disease at the siege of Naples, in 1494, which rapidly extended through Europe, and spread consternation on every hand from its strange and terrible consequences and from its intractability under any known treatment, is too well known to require more than a passing allusion. It is certain that the writers of that day recognized in this a disease with which they were previously unacquainted, but within fifteen years the minds of writers began to get unsettled, and from that time the unity or duality of the poisons has been a matter of dispute. It is not essential to the present subject to discuss this point further, nor to attempt to decide whether constitutional syphilis originated in the New World, or whether those Chinese records are to be credited, which trace its existence in that empire to a period many centuries before the Christian era.

The efficacy of these repeated inoculations to remove the consecutive symptoms of syphilis, is supported by proofs too numerous and well attested to be denied; but it is not necessary at the same time to adopt the theory of the "syphilizers," that it is due to a saturation of the system by the poison, whereby it loses all susceptibility to its influence, nor to admit that there is any specific action in the virus. As to the fact that susceptibility to the virus is gradually lost, it is nothing more than has long been observed by those who have often exposed themselves to gonorrhœal infection, and who gain an immunity more or less complete from repeated attacks. It is proper also to make some allowance for the sanguine impressions of those who are evidently enthusiastic in carrying their newly fledged theory into practice. Their results have been, of course, carefully scrutinized by disbelievers, and it is well to observe that the averages and

percentages vary materially with different writers. Hence it is evident that, even if we are to be guided by statistics, these are yet far from complete.

It was Prof. Faye who first suggested that the disappearance of constitutional symptoms was not due to any specific action of the repeated inoculations, but to a depurative action set up by the irritation and discharge from the sores. This view has been borne out by the experiments of Daniellsen, of Bergen, who has gained the same results by repeated and long continued pustulation with tartar emetic. He also observes that nature often makes an attempt at cure by deep ulcerations, under whose prolonged suppuration the secondary symptoms disappear, provided the strength of the subject be sufficient to bear the drain. The popular impression, that crops of boils act as natural purifiers of the blood, is not without foundation, nor is its reality refuted by the fact that art may supply a better means of purification. The various eruptive diseases also furnish examples of the elimination of febrile poisons, specific in their nature, through the skin.

It is claimed indeed by the advocates of inoculation, and statistics are adduced to sustain the claim, that its results are attained in considerably less time than those of the antimonial pustulation, and that the tendency to relapse is much less. The editor of the *British Medical Journal*, in the number for January 28, 1865, says: "In comparing the average of relapse after the different methods of treatment, we see that after mercury thirty-two per cent. relapse; after iodide of potassium, twenty-one per cent.; after syphilization, only nine and one half per cent. Prof. Boeck, however, since he has confined himself to inoculating with matter from indurated chancres, has not had to record a single relapse. The two modes of treatment which claim our chief attention are syphilization and tartarization. After tartarization twenty per cent. relapsed." The same writer adds: "Moreover, syphilization does not act as a prophylactic, as one or two cases, after having been cured by the treatment, have subsequently contracted a fresh chancre, which has been followed by constitutional syphilis." He, of course, belongs to the school of "*unicists*," and it did not occur to him that these cases could have relapsed after treatment. The "*dualists*," of course, could not admit that the subsequent sores were infecting chancres.

In the *London Lancet* for April 14, of the present year, Mr. Henry Lee gives a comparison of the duration of the different methods of

treatment for consecutive syphilis. Of 252 patients treated by Prof. Boeck, the average time was rather more than nineteen weeks. Of 85 patients treated with antimonial plasters by "derivation," the average time was twenty-six weeks. Of 537 treated with calomel internally, the average time was eighteen and a half weeks. These statements are all given on the authority of Prof. Boeck. Other authorities hold that "tartarization" is more prompt in its results than "syphilization," and refer to the experiments of Hjort and Lindwurm, to sustain their position. In the same paper, Mr. Lee gives the result of his treatment of 160 cases of constitutional syphilis by the calomel vapor-bath, in which the average duration was about six weeks. The same treatment applied to the primary stage occupied about five weeks. He gives no estimate of the relapses. On this point, however, there must be great inaccuracy, from the manifest impracticability of observing patients after their discharge from hospital, as well as the want of reliability in their statements in regard to previous treatment. The classes of people most subject to venereal complaints, mariners and prostitutes, are too migratory and possessed in many cases of too little intelligence and integrity, to render such investigations of much value. If equal credit be ascribed to Mr. Lee and to Prof. Boeck, we must admit that the treatment of the former has a great advantage in point of duration, while it is free from the natural repugnance which most people must feel for a practice so painful, filthy and disgusting as the repeated production of venereal ulcers.

Whether these repeated inoculations really produce anything beyond local sores, and whether the practice deserves the term of *syphilization*, may be a matter of dispute as long as the question of a single or double virus remains unsettled. It is plain that the "dualists" never can admit these postulates. But the practical issues will be decided apart from all theoretical reasoning, which is of little use in medical science, and will in due time be settled by the test of experience. On the ground of success alone will the method of inoculation stand or fall, as compared with other methods of treatment, making due allowance for its disagreeable features. The present indications do not point to its adoption in this country or in Great Britain, but rather to its early abandonment, even where it now enjoys so much favor, as the wild chimera of a few ambitious and enthusiastic, though probably honest, minds.

It does not appear that the theory of Auzias-Turenne has attract-

ed the attention of the homœopaths, though this might have been expected from its decided leaning towards their fundamental dictum of *similia similibus curantur* and their doctrine of specific remedies. Indeed it speaks ill for their sagacity, that they had not long ago enunciated the theory on *a priori* reasoning. As to the application of the remedy in the approved infinitesimal dose, the writer regrets his inability to furnish any advice, but trusts that the homœopathic public will be duly grateful for a suggestion of such importance in a theoretical point of view, and that their medical body will proceed without delay to put in practice. In view of the salutary results that might flow from such a development of "syphilization," the writer already fancies himself, indirectly indeed, but certainly in a homœopathic degree, a benefactor of a very unfortunate portion of suffering humanity.

ART. III.—PHARMACEUTICAL JELLIES:

By W. H. LASTER, *Chemist and Apothecary, Charity Hospital.*

M. FRÉMY has shown that pectin is produced from pectose, by a peculiar fermentative change in a principle called pectase. Pectin is the gelatinous base of most vegetable juices, and is especially abundant in the juice of the currant, raspberry, celery, parsley, and white beet. This principle, when long boiled with vegetable acids, albumen or sugar, is changed to pectic acid, which is the basis of several varieties of commercial jellies. The sugar appears, during the boiling process, to change to the uncrystallizable variety. Other principles, say starch, carrageenin (considered a peculiar variety of pectin), lichenin and lichenic acid, also form gelatinous combinations with water. This group comprises most substances forming vegetable jellies. The solidifying base of the second class, or animal jellies, is gelatine, a principle obtained in commerce from a variety of sources.

From what has been said, jellies may be pharmaceutically termed a combination of the above principles with water, of a tremulous consistence and sufficient cohesion to preserve the solid state. This class of preparations are principally employed as articles of food, and but one or two need be noticed as possessing any pharmaceutic

applicability. Of this number the jelly of M. Émile Mouchon, for disguising the unpleasant properties of cod-liver and castor oils, may be considered the most important. The following is M. Mouchon's recipe for gelatinizing cod-liver oil:

Take of gelatine.....10 drachms;
boiling water..... 8 ounces;
syrup..... 8 ounces;
cod-liver oil.....15 ounces;
oil of lemon.....30 minims, or Q. S.

Dissolve the gelatine in the boiling water, add the syrup, and finally incorporate the cod-liver oil, aromatized with the oil of lemon; then immediately place the vessel in cold water and allow it to remain until the jelly solidifies. Should a portion of the oil separate, triturate the mass until it becomes uniform, and immerse the vessel in boiling water until the jelly becomes transparent. Castor oil and copaiba may be suspended, but with more difficulty, in a similar manner.

A second method of gelatinizing the various oils, depends upon the fact that arabin forms with sesquichloride of iron a gelatinous mass. The oils in this class of preparations are only retained in a state of mechanical suspension, and in this respect are circumstanced similarly to the oily matters of an emulsion, but with this difference: in the emulsion the oils are suspended in a fluid, and with the preparations under notice they are suspended in a gelatinous mass. In preparing these compounds, the most ready method is, first to emulsionize a portion of the oil by means of mucilage of gum arabic; to the remainder of the oil the solution of sesquichloride of iron is added and completely incorporated by agitation, and this mixture is triturated with the emulsion until the whole becomes homogeneous. After the trituration is finished, the mass gelatinizes completely in several hours. The sesquichloride of iron employed for the purpose should contain no excess of acid, and should be in every instance mixed with a portion of the oil, before incorporation with the emulsion, otherwise the mass will be granular, or not of uniform consistence.

A formula which I have used in preparing this compound is the following:

Take of gum arabic..... 5 drachms;
" water..... 3 drachms;
" syrup.....10 drachms;
" castor oil..... 6 drachms;
" oil of lemon..... 5 minims;
" tincture of chloride of iron.....50 minims.

Dissolve the gum arabic in the water, and emulsionize 5 drachms of the oil with the mixture. Add the syrup, place the emulsion in a porcelain capsule, and gently heat it, until it becomes fluid. Mix the tincture of iron with the remainder of the oil, and incorporate the mixture with the heated emulsion ; lastly add the oil of lemon, place the capsule in ice-cold water, and stir until completely cold.

ART. IV.—AN ESSAY:

The Virtues of Nicotiana Tabacum, a remedy in Otalgia, and some forms of Prurigo ; read before the Greensborough Medical Society, on the first Monday in May, 1866. By THOMAS C. OSBORN, M. D., Greensborough, Ala.

THE years 1839, 1840 and 1841, as may be remembered, were made memorable by a severe and protracted epidemic of fever, which prevailed extensively throughout the United States. That this wide-spread and prolonged scourge was of malarial origin, cannot at this time admit of any well grounded doubt. Beginning in the spring of 1839, in the form of tertian intermittents, it soon shortened its intervals to the quotidian type; and increasing to greater intensity as the season advanced, it had by early autumn become almost continued in its exacerbations; the morning remissions being so contracted and incomplete as barely to afford diagnostic grounds for the name of *remittent fever,* which was, by common consent, applied to it by the profession. Not that it assumed an identity of likeness in all sections of the country. On the contrary, in many places the intermittent form remained singularly unchanged quite through the entire epidemic visitation; whilst in others, especially in the Gulf States, its malignancy and peculiar symptoms entitled it to the names of congestive chills and congestive fever. This form of the disease was strikingly abundant in this vicinity, in the cane-brake region, and along the courses of the rivers south of us, as I learn from the carefully prepared history of the diseases of Alabama by Dr. Lewis, late of Mobile, to whom the profession at large is greatly indebted for much valuable statistical information on this and kindred subjects. Relapses were frequent under all these varieties, and the prolonged impression of the malarial poison upon the

nerves and blood left its mark upon the health of the people, long after the epidemic had declined.

During the cold months this deleterious impression was manifested in the form of neuralgia, rheumatism and typhoid pneumonia, in a number of places where such diseases had previously been of rare occurrence; inflicting a frightful percentage upon the bills of mortality, and upsetting completely the theories and treatment of these disorders, as far, I mean, as the system of depletion was immediately concerned; and substituting therefor the only rational method which such an etiology alone had power to suggest. When we take into consideration the protracted and intense presence of the poison within the system, as well also as the depressing nature of this subtile material upon the heart and brain, our wonder ceases at the changes made in the treatment of our Southern diseases during that period, and even down to the present day. But it is passing strange that, in their blind defense of the old theories, physicians should lose sight of the great etiological chart which, varying from time to time, as new and potent causes of disease are observed, either reflects light upon the proper means of guarding against the poison, or points out the appropriate principle by which the treatment should be regulated for the cure of the disease.

It must not be forgotten that this epidemic of remittent fever followed closely in the wake of the great epidemic of cholera, which prevailed so fearfully from 1832 to 1835, sparing neither age nor sex, and leaving its livery as an heirloom to all classes of disease for a long while afterwards. Nor is this at all wonderful. In every such universal visitation as this, there are certain requisites essentially necessary for its production, as well as certain fixed laws regulating its progression and intensity. *Malaria is at the bottom of it.* I am thoroughly convinced that, until the world has advanced sufficiently in science to prevent the formation of this wide-spread agency, we shall continue to be witnesses of these terrible scourges; and that the character of other diseases, or, more properly speaking, the tone of the constitution, will undergo serious changes from time to time, under the influences thus brought to bear, making it necessary to adopt equivalent changes in the principles of treatment. Is not this, in reality, the only correct view to be taken of the often repeated expression that "diseases are constantly changing"?

But let me atone for this digression. I could not well resist its seductive invitation. The epidemic of which I am speaking, was, to

the physicians of that day, an herculean labor; and faithfully did they improve the time by removing much of the Augean rubbish, and replacing it with remedial principles better adapted to the cure of diseases. I was then just starting upon my professional career. My location was upon the bank of Suggs's creek, Wilson county, Tennessee. This small stream meanders sluggishly north-west and empties into the Stones river, some twenty or thirty miles above its junction with the Cumberland river. The face of the country being but slightly undulating, there was, of course, a large share of the grounds which, after every freshet, remained marshy for an indefinite period; and, as none of the present improvements in drainage were then in use, the people were habitually subjected to miasmatic influences, and quite familiar with the nature of intermittent fevers. It can, therefore, easily be imagined that, in this region, the epidemic attained a maximum intensity. It was not uncommon, in 1840, to see a majority of the people at the same time suffering from the disease, with good nurses very scarce, and bearing a high premium in every family. An area of ten miles in diameter, covered by a dense population of the laboring classes, constituted range enough to satisfy the most ambitious aspirant for professional honors. In the spring we had to deal with the fading embers of the winter phlogoses, as well as the bright flames of intermittent fever. In the summer the prevailing types were remittent and continued fever, which, culminating in intensity in early autumn, gradually returned, as the season advanced, to the intermittent form, and finally ended the year with the inflammatory diseases of the winter months.

Neuralgia was also a source of increasing interest to the practitioner, especially in the cold months, and during the decline of the epidemic. It assumed an endless variety of forms, but, amongst them all, no other attained such prevalence and malignancy as *otalgia*. No age or sex was exempt from its invasion, but its preference seemed mainly for children, even up to twelve years of age. In a large majority of cases its course was distinctly periodic, observing regular returns every twelve, twenty-four, thirty-six, or forty-eight hours, with exacerbations lasting from two to ten hours, inflicting for the time the most acute pain upon the patient; then passing off into the stage of intermission, it left the sufferer to regain a few hours of repose, and to become flattered with the prospect of a permanent cure. If, at this time, a sufficiency of bark or quinine was administered, the poison in the system was neutralized, and health completely re-

stored. But wo betide the luckless individual who, in a feeling of security, neglected this precautionary measure, as, sooner or later, the agony would be certain to return with augmented force, rendering life itself an almost insupportable burden. Beyond question these painful repetitions were nothing else than intermittent fevers, masked by local determination, and, of course, requiring for their cure the antidotal virtues of iron, bark and quinine, just the same as in old-fashioned chills and fever. In many cases both ears were attacked simultaneously, but these were exceptions to the general rule, which was, only one at a time, no preference being manifested for either the right or the left ear. This, in a number of instances, was so violent as to render the patient frantic and unmanageable; and, greatly to the mortification of my youthful vanity, the usual routine of applications laid down in the books, was totally unsatisfactory, inefficient and worthless. Indeed, at no time of my life have I ever witnessed a more favorable or pressing opportunity for the development of any latent genius which might be indolently reposing in the recesses of my brain. Did this necessity elicit a spark of evidence of its existence? You shall judge.

On one occasion, the happy result of which I shall always remember, whilst anxiously attending an interesting little girl, who was in the second or third hour of a quotidian paroxysm of otalgia, with as much or more time still to endure the agony, if no means could be adopted to arrest it; and feeling disconsolate over the failure of all other applications that had been tried, my hand mechanically drew from my pocket a piece of chewing tobacco — as much, I dare say, to dally with, as for any other purpose. The sight of it at once reminded me of its reputed virtues as a sedative narcotic, and set me thinking on its applicability to such cases as the one at hand. The assertion of the ghost of Hamlet's father, however, that it was this "leperous distilment" which, "poured into the porches of the ear," had caused his death, made me hesitate for a moment, fearing that this case might also result in the same way. The fear was but instantaneous. I determined to give it a trial, at all hazards, but so secretly that even the little patient should not be aware of the proceeding. Accordingly, whilst busying myself about the patient, and directing the parents to bring something from another room, I let fall from my mouth enough of the concentrated salivary solution of tobacco into the cavity of the ear, replaced the pledget of wool so quietly that the child itself was not cognizant of the operation, and

regained my composure before the others returned. I have stated that the patient was in the second or third hour of the exacerbation, and had as much or more time still to suffer, if no relief was obtained by treatment; and that it was quite certain, if the pain was allayed close upon the use of any remedy, the inevitable inference would be that the application was the prime agent in the cure. What then was my joyful surprise to find, in a few brief moments, that my little friend was not only unusually quiet, but also soundly asleep! Truly the surreptitious experiment had performed a wonderful work, even if it should prove to be only temporary in its duration. But as hour after hour passed away, with no return of the pain or other indications of distress, the conclusion grew upon me into certainty, that I had at last cut the Gordian Knot, and held at command a specific which would divest otalgia of all its frightful agonies. During the next day I gave 10 or 12 grs. of quinine in divided doses, and the cure was complete.

At this critical juncture, however, I committed the error of divulging the secret of my discovery to the parents of the child, which has fatally oppressed me from that time to the present. By so doing I lost all the practice in this family, as well as the entire district, *in the treatment of earache*. The safety, simplicity and efficacy of the decoction of tobacco, in the disease to which I had just introduced it, were speedily observed by the people; and it was henceforth not thought necessary to consult me about the matter, as the remedy was in every house, and could be instantly prepared for use, if the disease should at any time have the impudence to intrude its presence upon society. Such sad neglect upon the part of those who should have been forever under obligations to my ingenuity and generosity, inflicted on my time a large amount of leisure to reflect upon the ingratitude of mankind. The fatality of the error consisted in relieving me from the drudgery of visiting any more cases of otalgia, and also the effectual prevention of any financial plethora likely to arise through the income from this morbid speciality. Indeed I have dreaded specialities from that day to this. It will be seen that, owing to the simplicity and great abundance of the remedy, the discovery became as popular as it was valuable to the afflicted. Such, in fact, has been the invariable and immediate success of the application that, after once or twice prescribing it in the different sections where I have located, no further assistance is desired, and I have occasionally been present when a complaint was made by a child, and

witnessed the cold-blooded cure effected, without interrupting the chain of conversation, and without my assistance being worth the asking for; no mention or allusion being made to the great discovery —it being unknown perhaps that it was ever discovered at all. It has occurred to me, indeed, since my marriage, to hear the application called "Mrs. Osborn's remedy," because, forsooth, she, like the rest, used it at home, and recommends its virtues to her friends abroad. "*Sic transit gloria mundi.*"

There is another untrodden territory, over which I have pioneered this valuable agent, and to which I can refer with great satisfaction. In all eruptions there is ordinarily, as one of their accompaniments an itching sensation, more or less violent. But this symptom is, in two or three of the classes, almost the only one having any diagnostic significance. In all eruptions, however, where this condition prevails, the liberal application of the decoction, according to my observation, rarely fails to allay its intensity, if not to afford complete relief. Prurigo is one of the cutaneous disorders in which itching, more or less troublesome, is the most important symptom. Some of its varities are sufficiently prevalent at all times to attract a considerable share of our attention. Of these local disturbances I will enumerate the *prurigo preputü*, *prurigo scroti*, *prurigo podicis*, and *prurigo pudendi muliebris;* in all of which the application of tobacco seems to be peculiarly adapted, and affords to the patient the most satisfactory assurance of relief. Situated in delicate localities, these eruptions are sources of annoyance for a long while before the sufferer will consent to apply for assistance, and there is reason to believe that many cases of moroseness and other symptoms of melancholia can be traced to the neglect of the proper treatment of this local distress, especially in persons of a leucophlegmatic temperament.

Having been myself a sufferer for many years from hermorrhoids, owing to inveterate constipation, I am often warned of an approaching attack by *prurigo podicis*, of such great fury that nothing short of my acquaintance with the nature of the disease would prevent my committing some silly but desperate act of violence to the parts. In one of these paroxysms, after having vainly tried all the remedies which had previously relieved the itching, I thrust a piece of moistened tobacco within the sphincter ani, and threw myself upon a bed in sheer desperation, awaiting the result. But, to my agreeable surprise, the distress was immediately soothed, and, retaining the rem-

edy *in situ* until morning, I enjoyed the happiness of having a large natural evacuation of the rectum, with no return of the itching for many days afterwards. Here I had made another valuable discovery which, if the relief it promised should prove only of short duration, possessed the advantages of simplicity and convenience, as well as safety from injurious consequences. This occurred several years ago, and although it has since been my custom to resort to the use of tobacco as soon as the distress appears, I have not, up to this moment, had occasion to seek the assistance of any additional means, for the reason that this simple expedient is always successful, painless and convenient. Within the past few months I have adopted, in my own case, the use of the concentrated extract of tobacco, procured from the deposit chamber of a Dutch pipe, a fluid ounce of which I have secured and keep ready for instant application. A serious objection to this form of administration consists in its disagreeable odor, which, you are aware, is due to the oil, and inseparable from it, however procured. I find also that this preparation, unlike the substance or decoction of tobacco, causes, when applied, a severe stinging sensation to the parts, thereby rendering it unsuited to those cases that have been severely chafed by friction for the relief of the itching. Neither, I am persuaded, would it be applicable to the *prurigo pudendi muliebris*, for the reason that the sensitive membrane lining these parts would, in all probability, inflame under the application, and add to, instead of allaying, the suffering.

Since my individual experience with this remedy began, I have prescribed it to a number of persons, male and female, similarly afflicted, and always with the most satisfactory assurances of its complete efficacy. In three cases of *prurigo pudendi muliebris*, attendant upon gestation, the liberal use of the decoction of tobacco, as a vaginal injection, has afforded immediate relief, and elicited the thanks of the patients for putting into their possession a remedy as safe and painless as it is convenient, economical and effectual. I trust sincerely that, in future observation, a larger field may be opened for the application of this remedial agent, and that more attention will be given to its merits by the profession.

In concluding my labor upon this paper, it is, perhaps, nothing more than due that I should tender an ample apology for asking attention to objects so trifling as this one might with much justice be considered. It is true, in casting about for a subject for this occasion, I had before me several fields of greater magnitude and richer

pasturage, with which, no doubt, my speculative abilities would have indulged in a much wider range of thought, and, by so doing, elicited your interest in a more satisfactory manner. But, in such an effort, it would have been necessary to deal freely in theoretic materials, embodying just enough of facts to spice the mental repast; and as I am a poor caterer at best, there is no actual certainty that my success would then have been better, or, may be, not so acceptable, as the dish which is here respectfully presented. Indeed I was, whilst writing this paper, several times of the mind to cast it into the flames, as too insignificant to offer to your intelligent appreciation; and but for the courteous encouragement of one of your number, to whose excellent judgment it was submitted, there is every reason to believe that my doubts would have prevailed. But being kindly urged by him to go forward with the work, I did so, on the principle that every fact, however small, which proposed relief to human suffering was, or should be, acceptable to the profession, of which we constitute an integral part. These generous ideas so perfectly tallied with those which had actuated the selection, that my hesitation disappeared, and I now leave it with you to dispose of as your mature intelligence may candidly determine.

After all, gentlemen, it is but by actual comparison that the differences of magnitude become appreciable. Those appearances which we are swift to pronounce insignificant, are, perhaps, important links in the chain of nature's grandest operations. That invisible crustacean animalcule, the cypris, in its individual capacity, seems to be a mere nothing by the side of the gigantic elephant or mastodon; but when seen in its collective habits, it impresses the conviction upon the mind that the monsters of the land and of the deep are mere pigmies, as far as terrestrial importance is concerned. It is with such atoms Omniscience performs his greatest operations. The habits of the cypris are now pretty well known. They are wonderfully gregarious, many millions of them dwelling securely upon a spot no larger than a finger nail, and once a year they cast their carbonaceous shells, which, by cohesion with the finest particles of silex and alumina, form crusts of marl no thicker than the twentieth part of an inch. These marl beds, in some regions of the earth, attain many hundreds of feet in thickness, and must therefore require in their formation vast ages of time, as well as immense quantities of solid materials in their construction. In Auvergne, in central France, there is a valley some sixty miles in width, created by volcanic erup-

tions; the lava having been thrown across a great river, perhaps millions of years ago. This valley, or river bed, has been filled to the depth of one thousand feet by the labor principally of this trifling insect, and by counting the layers of the cast shells, twenty to the inch, the age of that part of the earth amounts to two hundred and forty thousand years. This calulation is made by geologists with much certainty, and as the cypris is a fresh-water inhabitant, it is also rendered certain that for that length of time no Noachian deluge has submerged that quiet burial surface. The *works* of the Almighty are immutable, and science is daily proving that his revealed *word*, in the Mosaic history, is the inspiration of truth, and only gives a more satisfactory construction to its language.

As the dimunitive seconds of time are the all important ingredients in the composition of an age, so likewise are the infintesimal grains of sand and frail shell-coats of the little animalcules to the aggregation of our habitable and teeming globe. Mutation is, beyond doubt, in mundane matter the active agency by which the Architect of the universe increases and vivifies the dimensions of the solid earth. The divinely inspired Solomon, King of Israel, thousands of years ago said, "The wind goeth toward the south, and turneth about unto the north; it whirleth about continually; and returneth again according to his circuits." "All the rivers run into the sea, yet the sea is not full; unto the place from whence the rivers come, thither they return again." How beautiful, and how true! The rain drop, drawn up as vapor from the surface of the ocean, rides upon the wind in his circuits, and becomes charged with carbonic acid gas, which, having fallen upon the solid limestone, unites with and decomposes the rock, whilst its watery companion takes up the detritus and conveys it to the sun. Thence, with its precious burden, being heavier than the upper stratum, it sinks to the bottom of the great deep, and the hungry coralline takes off the carbonaceous load, and with it builds up those magnificent coral islands, which stand as imperishable monuments of the operations of nature. The rain drop, released from its rich freight, rises again to take its place amongst the great company of its kind, awaiting another aërial passage in the ceaseless round of events. But this is not all that it does. The rising and sinking in the sea of these insignificant particles, constitutes an endless current of circulation in the mass of water, and serves in this way to equalize the temperature, as well as the saline composition, both of which are essential to the health and habitableness of the great ocean-world.

Through the aid of Brooke's deep-sea plummet, the deepest parts of the ocean are found to have a cushion of *still water* next the bottom, which fixes immovably any solid matter that finds its way there; and the bottom itself is composed of animal remains. constituting it a vast and desirable cemetery. Chemistry teaches that there is a certain degree of pressure which forbids the formation and evolution of the gases which distend, soften and disintegrate animal tissues after death, and therefore the deep-sea must be of all places the most desirable of grave-yards. Bodies deposited feet foremost upon that unchanging region, there is every reason to believe, will so remain, in the likeness of the hour of death, until the great resurrection, when the souls will again revisit them, and ascend to final rest in eternity.

Again, when the great furnace in the centre of the earth becomes surcharged with heat and melted lava, the superincumbent crust heaves and trembles until an eruption occurs from some volcanic vent, and the material thus ejected adds sometimes enormous elevations upon the surface; or failing to vent its fury upon the external world, mountains and islands are upheaved in one or more places, whilst in others a corresponding depression occurs, to counterbalance the disturbance in the equilibrum of the globe. In this way the Mountains of the Moon in Africa were erected; and the depression of the valley of the Jordan, 1300 feet below the level of the sea, occured at the same time, causing that memorable deluge from which Noah and others were preserved by the aid of the ark, as directed by inspiration from Omnipotence. Heat upon a large scale can thus accomplish the most wonderful phenomena, and the great fire thus made is but the aggregation of infinitesimal sparks.

Let us not then be deterred from observing and signalizing insignificant appearances, for the labor spent in this may ultimately accumulate in such grand proportions as to astound the world with its magnitude, and result in the diffusion of incalculable benefits to the race which we represent. It may be that in animalcular decomposition, upon those tracts of country favorable for their habitation, is the *fons et origo* of those pestiferous miasms which prove so destructive to human health. If so, aided by chemistry, we shall yet be able to detect their nature, and neutralize their poisonous influence on a larger scale, and thus remove the odium from our beloved profession, that we are a mercenary class. The great valley of the Mississippi is known to be a vast cemetery of this order; and another

century will not pass away before the desired knowledge will be obtained, and then this beautiful region of the globe which we inhabit, teeming as it does with animated nature, will become the resort of health, the abode of beauty and the centre of civilization.

ART. V. CASE OF DISEASE OF SUPRA-RENAL CAPSULES AND PANCREAS: *By* J. C. NOTT, M. D., *Professor of Surgery, Medical College, Mobile.*

THE subject of this case, who died in the early part of June of the present year (1866), was one of the most esteemed and useful citizens of our town, and will long be remembered with painful regret. The case was one of a rare type, presenting many curious complications and combinations, and affording me an interesting study for several months. It involved organs whose functions are little understood, and whose diseases are not usually revealed by well-marked diagnostic symptoms.

There is a large class of what is generally regarded as *blood diseases*, of whose pathology we know little or nothing—such as fevers, the exanthemata, gout, etc. In these the whole system is thrown into commotion by the morbific cause; the functions of all the organs are more or less disturbed; but when, after death, the anatomist comes to look for the broken wheel or spring that has stopped the motion of the machine, it is not to be discovered.

There is another large class of diseases which have *local* habitations, and by spoiling directly the organ attacked, stop the working of the machine and cause death. In diseases of this class we not only discover palpable pathological changes in the cadaver, but in most cases we can anticipate, with reasonable certainty, the nature and seat of the lesions to be found, from the course of symptoms of the disease. In this category may be placed most diseases of the brain, heart, lungs, liver, kidney, stomach and bowels.

There is still another large class, belonging mostly to the nervous system, to which I wish to draw attention in connection with the case under consideration. I do not include those affections immediately depending on the brain and spinal marrow, but desire to designate particularly that mysterious class of affections which seem to owe their origin and symptoms to a morbic condition of some

portion of the great *sympathetic nerve*. We know that this complicated department of the nervous system presides over the functions of organic life, connects together the various organs, and regulates the actions of the viscera. But of the *quo modo* we know nothing—what is the special function of this ganglion, or that plexus—how they act separately or conjointly—what the effect of the disturbance or destruction of a single nervous fibre may be—I say of all this our knowledge is exceedingly imperfect. The anatomy of the trisplanchnic nerve is so complicated, so delicate, so covered up and involved in other tissues, that its dissection is exceedingly dificult. The symptoms, too, attending its disorders being almost infinite, it is not to be wondered that, up to the present time, we have made little progress in connecting symptoms with the lesions of sympathetic ganglia, plexuses or nerves. What do we know, for example, of the seat of epilepsy, hysteria, hypochondria, nervous palpitations, neuralgic pains in the abdomen, functional disturbances of the viscera, etc., etc.?

There is another set of organs intimately connected with the sympathetic system, to which too much importance cannot be attached, and I ask attention to them particularly, in connection with the case of Goodman: I allude to what have been denominated *blood glands*—those vascular, glandular structures *having no excretory ducts*, but which are intimately related to both the vascular and nervous systems, and which doubtless influence greatly the composition of the blood and the actions of the associated nerves. Such are the spleen, the supra-renal bodies, the thyroid gland and the uterus. Addison's disease, Graves' disease or exophthalmic goitre, chlorosis, anæmia and leucocythæmia must, in the present state of our knowledge, in many cases be referred to the combined influence of these two sets of organs. I have placed the uterus in the category of blood glands, its action being analogous in some respects. We see chlorosis, which is but a form of anæmia, resulting as often and in as great a degree from amenorrhœa as from menorrhagia or other hæmorrhages. When the secretory function of the uterus (if I may so term menstruation) is arrested, in amenorrhœa, the red globules of the blood diminish, and the relative proportion of the white is greatly increased; while, on the other hand, dysmenorrhœa with menorrhagia is not incompatible with florid complexion and even plethora. The case of Mr. Goodman is one well calculated to illustrate the difficulties to which I have alluded, and

to embarrass the most accomplished master of diagnosis. I will proceed to give a brief history of it.

He was a man of fifty-five years of age, over six feet in height, and in ordinary health weighed two hundred pounds or a little more. He was rather inclined to corpulency, and though temperate in other respects, was a full feeder, with good appetite and fair digestion. His complexion was never florid, but on the contrary pallid, and he had over the limbs and body some ten or twelve small fatty tumors, about the side of pigeons' eggs.

I had been his family physician for fifteen years, and although he led a very active life (being an owner of town property, houses, wharves, etc., which required out-door exercise), he was rarely sick enough to go to bed, but very often complaining of not feeling well. He almost daily complained of some sense of oppression about the abdomen, often of decided neuralgic pains in some part of this region, sometimes of neuralgia in the spermatic chord and testicle, and once, if not oftener, of severe orchitis. He not unfrequently, too, complained of some oppression in breathing, and often had irregularities and intermission of pulse, which were clearly nervous, as he was always better for active exercise and travel. As the functions of all the leading organs seemed to be formed sufficiently well, I could only attribute these floating symptoms about the abdomen and chest, during ten or fifteen years, to some hidden and incomprehensible derangement of the ganglionic nervous system.

About six months before his death, during the winter of 1865-66, he was attacked with a severe cough, which much alarmed himself and his friends. A careful examination satisfied me that the attack was nothing more than subacute inflammation of the lining membrane of the larynx and trachea, and that he would recover from it, as he did. The cough and expectoration were troublesome; he had light, irregular fevers, with debility, but was never confined to the house with it for more than a day or two at a time. He gradually threw it off, and at the end of three months ceased to cough and was regaining his health.

About this time he went out to the funeral of a friend, acted as pall-bearer, was fatigued and exposed to damp, came home exhausted and complaining, and a new train of symptoms set in, which in about three months more brought him to the grave. The prominent symptoms were dull, heavy, deep-seated distress and pain in the region of the stomach and kidneys, but more particularly in the region

of the pancreas. It was a sense of great weight, with more or less pain, but the pain could never be said to be acute. This feeling was always worse as night approached, and accompanied by more or less oppression in breathing, which was sometimes so great as to oblige him to sit up in bed for a few minutes, to inflate his lungs fully, and the difficulty in breathing always commenced with a sense of weight about the region referred to. These symptoms increased gradually, until the oppression and restlessness became so great that he found little relief in any thing but morphine, without which he could not sleep, but did sleep invariably well when he took from half a grain to a grain, hypodermically, at bed time. He was nervous, fretful and very hypochondriacal. These symptoms were, to a great extent, nervous, for when I came in the evening I found him in this condition; he would, during half an hour of cheerful conversation, forget himself and breathe pretty comfortably. I would then inject the morphine; in ten minutes he would be perfectly comfortable, and I would leave him with the assurance that he would have six or seven hours of tranquil sleep. He complained a good deal of palpitation and sense of oppression about the heart, but said this feeling always "commenced below and worked up." Percussion and auscultation revealed dilatation of the heart, with enlargement and slight insufficiency of the aörtic valves. There was also an abnormal impulse in the heart's action; my opinion, however, throughout was, that the heart was not a primary, but a secondary point of disease, resulting from disordered nerve force and probably some obstruction in the circulation of the abdominal viscera. The skin was pallid; as the disease advanced towards its termination, it became slightly dusky or bronzed, and, to my eye, of a very faint greenish tinge. This discoloration was confined to the face, and the part of the abdomen on which a large blister had been placed became of an unusually dark, smoky bronze. The eyes were prominent and pearly, and he often complained of a sense of choking, as in hysteria. He became much debilitated, and was greatly fatigued by attempting to walk about the house. Walking up a flight of stairs distressed him very much, and he attempted only two or three times during the last month to ride out. The sense of weight across the abdomen was always increased by a meal, and particularly of the dinner. His digestion and appetite were good, and he seemed to suffer more from the weight of the food than from indigestion; but, as before stated, this oppression was always relieved by the morphine. He lay almost constantly

on his back, and did not at any time require his head to be elevated.

There was no material change in the symptoms for several weeks before his death, and so far from any aggravation which would lead to the expectation of speedy dissolution, his symptoms had so improved, for a week or ten days, as to give me strong grounds to hope for a recovery. I left him at nine o'clock at night, feeling well and in high spirits. He slept well through the night; woke up bright; washed his face and hands; sat up by the bed-side; ate a mutton chop, tea and toast, with great relish; said he could have eaten as much more, if he had thought it prudent; and, a moment after, he was seized with difficulty of breathing and fell back dead!

The diagnosis in this case was one of extreme difficulty to me. It presented some of the symptoms of *Addison's disease* — some of of *exophthalmic goitre* — some of both and some of neither. In reviewing the symptoms I was compelled to resort to the *logic of exclusion.* By careful examination, I satisfied myself as to what organs *were not* diseased, and then concluded that the disease *must be* in other organs, whose condition I could not satisfactorily determine.

The brain was clear, as were the lungs; the heart, though somewhat enlarged and dilated, revealed no symptoms which would account for the combination of symptoms, and was probably but secondarily affected; the urine was not albuminous and, though not otherwise tested, was healthy in quantity and appearance; there was no œdema and no evidence of disease of the liver, spleen, stomach or bowels; the appetite was good, and the digestion remarkably good for one in his condition; his stools were well digested, of healthy color and consistence, being moulded as in health — occasionally they would be rather clay-colored, but a single blue pill corrected this for a week or ten days. There remained, then, only the *suprarenal bodies* and *pancreas*, and upon these I fixed my attention, as the only organs in which disease *could be*, and the result justified the reasoning.

He died suddenly, as above stated, at eight o'clock in the morning, immediately after eating breakfast. I was summoned forthwith, and was at his bed-side within ten minutes after he breathed his last. It is worthy of remark that, when he died, his face was pallid, but soon became dark, from venous engorgement. This engorgement increased after my arrival, and he presented the appearance of one dead from asphyxia.

Post Mortem.—On opening the body, the first thing that attracted

attention was the deposition of fat, to an extent not ordinarily seen in chronic disease. The kidneys, heart, omentum and cellular tissue of the abdomen were heavily loaded, while the extremities were a good deal emaciated, and I have already mentioned that he had, scattered over the body and limbs, fatty tumors. The right kidney was enveloped in a mass of adipose tissue (as was the left), and there was no remnant of supra-renal body connected with it. It was either congenitally wanting, or had been entirely removed by absorption. I thought it might be the result of fatty degeneration, but the fat was all of healthy appearance, and no vestige of the organ remained. The left supra-renal body was greatly atrophied and reduced to a small mass of fibrous tissue, in which were four or five small sacs, about the size of a half-ounce pistol ball, containing a coägulum of blood and resembling closely a hæmorrhoidal tumor. The whole capsule would not have weighed one dram. The *pancreas* was firmly adherent to the surrounding tissues, requiring a troublesome dissection to get it out. It was a little larger than natural, and so much *indurated* as to excite a doubt in my mind whether it was not a case of incipient scirrhus. There was nothing in its appearance, to the naked eye, to attract attention, but its weight and density. The *kidneys* were perfectly healthy, except a superficial cyst on the upper end of the right one, about the size of an English walnut, situated beneath its fibrous covering and containing serous fluid. It did not involve the glandular structure, was smooth on the outside, and could have had no connexion with the missing capsule. The *liver* and *spleen* were of natural size, and in every respect perfectly healthy. The stomach and bowels were not examined, as we were pressed for time, and there was no reason to suspect disease in these organs.

Chest.—On opening the thorax, the left pleural cavity was found to contain about two quarts of serous fluid, in which were floating a good many soft, *oyster*-looking coägula. There was no effusion on the right side, and none in the pericardium. The *heart*, as anticipated, was dilated, I think a little hypertrophied, and surrounded with fat. The commencement and arch of the *aörta* were evidently dilated, and there was an insufficiency of the semi-lunar valves, though they were perfectly healthy in themselves. The mitral and tricuspid valves were normal, as was the heart in every respect, except as above stated. The left cavities were empty, but the right were engorged to the utmost, and the right ventricle con-

tained a recent coägulum. I should mention that the examination was made one hour after death, while the body was warm and the blood fluid. I should also mention that the blood, to the unaided eye, did not seem to be wanting in red globules, but was a good, rich looking fluid.

The *post mortem* examination was necessarily done in haste, and there were several interesting points that should have been investigated. The cause of the dilatation of the heart and aörta was not satisfactorily explained. My friend, Dr. Gilmore, who saw the case frequently with me and assisted in the dissection, very ingeniously suggested that the dilatation might have been produced by compression of the aörta from the diseased pancreas, and this solution is a very plausible one. The lungs were perfectly healthy, and not at all engorged, and there was no appearance in any organ of tubercular deposit.

Now the question arises as to the immediate cause of his almost instantaneous and unexpected death. Although I omitted in our haste to examine the pulmonary artery, there can be little question that he died from the arrest of the circulation, *through the pulmonary artery, by a coägulum of blood.* The reasons for this conclusion are—1st, there was no other apparent or probable cause of death. 2d. He died with a pallid face, which became more and more congested for ten or fifteen minutes after breathing ceased, until it was as black as venous blood could make it. In sudden deaths of this kind, where the blood has not been fully decarbonized, the heart will continue to act for some minutes after respiration ceases, and drive the blood over into the venæ cavæ. 3d. The right cavities of the heart were found enormously distended, and a clot in the ventricle. 4th. The lungs were not only found free from engorgement and mucus, but unusually dry. Thus the blood, being arrested by a clot in the pulmonary artery, was prevented from entering and engorging the lungs, and from the same cause was made to accumulate in the right cavities of the heart, head, etc.; hence the change from pallor to venous engorgement in the face. The effusion into the left pleura was not detected before death. I often percussed the sides of the chest, as he lay in bed, and found the sounds very clear, and the respiration in the whole of the front and sides of the chest was so clear as to be almost puerile. He generally, through the day, breathed well, lying on his back, with his head low, and at night, when his oppression, anxiety and nervousness came on, the morphine

always relieved him, and I therefore looked upon the action of the heart and oppressed breathing as principally nervous. Not only was the oppressed breathing removed by the morphine, but the heart's action was often perfectly steadied by it: the pulse would become slow, regular and normal in every respect, though a great part of the time it was irregular and intermitting, and was never very frequent or feeble.

Treatment. — This consisted, until the last few weeks, of quinine, iron, and vegetable tonics, gentian, cinchona, etc., none of which benefited him. I tried also the bromide of potassium without effect, and finally gave an occasional mercurial purge and thirty to forty drops of tincture of digitalis three times a day. Under this treatment he manifestly improved. The urine became more abundant and limpid, the heart's action more regular and natural, and the breathing much more comfortable. He was so much relieved a week before his death, that I thought it most prudent to withhold the digitalis, as well as all other remedies except morphine, without which he could have no sleep or comfort at night. He frequently through the day would take a natural tranquil sleep of an hour, without any morphine.

During the treatment of this case, though wanting in the group of symptoms which mark either, it presented so many points of resemblance to Addison's disease and Graves' disease (exophthalmic goitre), that they were constantly in my mind's eye; and as these diseases are of rare occurrence and little studied, it may not be uninteresting or unprofitable to the younger members of the profession, for me to give a *resumê* of what is known of them. I am satisfied that they are often overlooked, and deserve more attention than they receive in our country.

In Addison's disease of the supra-renal capsules, *bronzing* of the skin and other tissues is a prominent and well-marked symptom, while in the case of Goodman it was almost wanting. The extreme feebleness of the pulse and heart's action were not present in this case, and it corresponded in this particular more with the *maladie de Graves;* and lastly, though the renal capsules were destroyed by disease, the morbid appearances on dissection did not correspond, as we shall see, with the lesion described by Addison and Wilks, in that specific form of disease called Addison's disease, and which is always marked by bronzing.

The structure and functions of these capsules have given rise to

much investigation and discussion; but while we have abundant evidence that they do possess important functions—functions essential to life—yet, to the present time, these have eluded investigation. They have no excretory ducts, and from their remarkable supply of blood-vessels and nerves, would seem to have important connection with the blood and ganglionic nervous system. The nerves of the supra-renal bodies are, according to Bergamann and Kölliker, extremely numerous, arising from the semi-lunar ganglion and renal plexus, and to a small extent from the vagus and phrenic nerves. In man, Kölliker counted in the right supra-renal body *thirty-three trunks*, and found that, without exception, they were constituted of dark bordered, finer and medium sized, or even thick, fibres; were whitish or white, and furnished with isolated larger or smaller ganglia. It would therefore seem to be an apparatus appertaining to the *nervous system*, and not to the glandular, proper. It has been supposed that they have a relation to the ganglia of the sympathetic nerve, similar to that of the pituitary body towards the brain. From its extreme vascularity, we also infer that it has an important connection with the *composition of the blood.*

M. Brown-Séquard has removed the supra-renal bodies from some fifty animals—dogs, cats, rabbits, guinea-pigs and mice—and states that they died on an average in twelve hours. He concludes from his experiments that these organs are more necessary to life than the kidneys, as animals live two or three days after the removal of these.

On the other hand, the experiments of Dr. Harley furnish different results from those above stated. He infers that "they are not absolutely essential to life;" "that when death follows upon the extirpation of the supra-renal bodies, it is in most cases in consequence of the injury done to the neighboring tissues, perhaps more frequently the mutilation of the ganglionic system of nerves;" "that the absence of the function of these bodies is not proved to have any special effect in arresting the transformation of hæmatin, or in increasing the formation of blood crystals;" and "that the suppression of the functions of these bodies is not attended by any increased deposit of pigment in the skin or its appendages in certain of the lower animals."

It may be stated, in reply to these objections, that the injury done to surrounding tissues by Brown-Séquard, could hardly account for the speedy death, as it occurred in much shorter time after removal

of the capsules, than of the kidney itself. Moreover, according to Addison and the elaborate researches of Dr. Wilks of Guy's Hospital, it is not the disease or destruction of these bodies from other causes, but their degeneration from a peculiar form of disease thus summed up by the latter author, that produces the bronzing.

"These, then, are the changes: first, the deposition of a translucent, softish, homogeneous substance; subsequently, the degeneration of this into a yellowish-white, opaque matter; and afterwards, a softening into a so-called abscess, or drying up into a chalky mass. Occasionally also some fibrous tissue may be found round the organs, being the product of inflammation, which has united them to the kidney, liver and adjacent parts." These changes resemble closely *tubercular* degeneration, and usually are scattered through several years.

Dr. Wilks further remarks that Addison "believed at the time he published his work, that *any disease*, which affected the integrity of the *supra-renal capsules*, would be attended by the remarkable phenomena," (bronzing, etc.) "originally described by him. *This was an error;* for all subsequent observations have shown that no recorded instance of the affection has been connected with cancer, or with any other kind of disease of the organ than that found in the genuine cases of the disease which he first described, and which constitutes the true form of the malady." *(Aitken—Science and Practice Med.)*

All the writers on this affection lay much stress upon the implication of the ganglionic nervous system, and there can be no doubt that here lies an unexplored and unfathomable field of pathology, in which is concealed the proximate cause of many of those anomalous diseases which baffle our Physiology, Pathology, Semeiology and Therapeutics.

"Viewing the structure and connections of the supra-renal bodies as altogether similar to those of the pituitary gland, and considering those organs as very intimately connected, anatomically and physiologically, with the ganglia and ganglionic plexuses, I have been induced to view them as organs contributing or subsidiary to the organic nervous force, or influence exerted by the ganglionic nervous system. Thirty-two years ago I published this opinion of the function of the pituitary gland, in my *Physiological Notes, etc.* (in 1824), and stated that this gland reinforced the ganglionic nervous influence, endowing the brain by means of the ganglionic nerves distributed to the cerebral organs; that it *was a portion of the ganglionic nervous system*, contributing to the nourishment and functions of the brain, *imparting a unity of development, of permanent nutrition and of function, to the double organs composing the cerebral mass.*

It appears very probable that similar offices are performed by the supra-renal bodies, as regards the ganglia and ganglionic plexuses of the abdomen; these bodies contributing to the functions of the organic nervous or ganglionic system, as displayed by the abdominal organs, whether digestive, assimilative or generative. That both the pituitary body and the supra-renal bodies perform these important functions — important not only as regards the performance of their respective functions, but also as regards the life of the individual — appears to be manifest from the nature and character of the nervous communications existing between them and other parts of the ganglionic nervous system; for instead of describing these communications merely as branches of nerves detached from ganglia or parts, it would be more correct, taking the size and appearance of these branches into consideration, to describe them as *branches sent* from the medullary structure of those bodies *to those ganglia, plexuses and nervous trunks, in order to convey to these the special influences or functions of those bodies;* or otherwise, to reinforce and confine the influence exerted by these several ganglia and parts, with which they are anatomically connected. That these bodies are of the greatest vital as well as functional importance, is evinced not only by the consequences following their structural lesions and by the presumed nature of their functions, but also by the manner and position of their lodgements; both the pituitary and supra-renal bodies being so located as to render them, in their respective situations, further removed and better protected from injury and even from structural or other disease, than any other part of the animal organization."

In the absence of more precise knowledge, the above remarks of Dr. Copeland are interesting and suggestive, as to the nature and importance of the functions of these bodies. There can be no doubt that many and important disorders which elude diagnosis, have their point of departure in the complicated machinery of the tri-splanchnic nerve.

As a "Supplement" to his Dictionary, Copeland has given a very good *resumé* of what is known respecting the history of "Addison's disease," and I give below his description:

"*Symptoms.* — Generally the patient at first complains of weakness or more marked debility, of languor and of indisposition to bodily and mental exertion." (Such were the facts in the case of Goodman.) "The appetite is impaired or lost; the pulse is soft, weak and often frequent; the whites of the eyes pearly; the body is sometimes more or less emaciated, or, if not emaciated, leucophlegmatic, or cachectic, or discolored and generally anæmied."

In Mr. Goodman the appetite was well preserved, and he ate a mutton chop, tea and bread with relish a few minutes before his death, and said he could have eaten more; corresponding in this point better with the *maladie de Graves* or *exophthalmic goitre*, than with *Addison's disease*. There was not much weakness of pulse, and

the action of the heart was tumultuous, irregular and intermittent, striking the ribs with unnatural force; and percussion and auscultation gave evident signs of dilatation and insufficiency of the aortic valves. The whites of the eyes were pearly, but though he had gradually lost bulk, the emaciation was not great, as he would have weighed at death about one hundred and seventy-five pounds, or thirty or forty pounds less than his full weight. He was leucophlegmatic, with a slight bronze tinge, particularly about the face, and it could hardly be said that he was anæmic, as the blood, to the unaided eye, looked normal on *post mortem* examination.)

"Uneasiness or pain, often severe, is referred to the region of the stomach, epigastrium, back or loins,"

(Goodman complained of almost constant, dull heavy pain, extending across in front from the region of one kidney to the other. The sense of weight and oppression was often great, coming on in paroxysms, particularly in the evening, and always accompanied by difficult respiration, all of which symptoms were relieved by a good night's sleep, secured by a dose of morphine.)

"Nausea, sickness, retchings, frequent vomiting, often occur, especially as the prostration, anæmia and discoloration of the skin advance."

(In Goodman there was little nausea, but the tendency to it was increasing. If, instead of terminating abruptly from an intercurrent cause, the disease had followed its usual protracted course, there is no question that the nausea, vomiting, feebleness of pulse and anæmia would all have increased.)

"In some cases, complicated with disease of other organs, especially when such disease is acute and disorganizing, the *discoloration may be absent or overlooked.* In other cases it is slight or in patches, consisting of a murky hue; but in others it amounts to a bronzed tint, and is general all over the whole surface, but is commonly most marked on the face, neck, superior extremities, penis and scrotum, in the flexures of the axillæ and limbs, around the umbilicus, etc., varying in deepness from a dingy or smoky appearance to a chestnut brown, or color of a mulatto."

(Now in the case of Goodman there was simply an unnatural darkness of the skin, particularly of the face. We have no certain proof that the disease in this case had been of more than a few months duration, and the bronzing, we are told, is usually deepest in the more chronic cases. Moreover, the morbid appearances revealed in this case by dissection did not correspond with the specific disease of the supra-renal bodies, so well described by Wilks in his

Pathology. The bronzing does not necessarily attend other lesions of these bodies, such as cancers, etc., and it should be remembered that our case was complicated with disease of pancreas, which probably hastened the termination. My impression is, however, that the disease of the capsules had been slowly progressing for years, and that the early premonitory symptoms alluded to are attributable to this cause.)

The *duration* of Addison's disease is very variable, extending from a few months to years, and the patients may die from gradual exhaustion (which is most common), or from complications, such as diarrhœa, pericarditis, brain symptoms, phthisis, cancer, tuberculosis, etc.

Dr. Copeland gives an interesting *resumê* of thirty-four cases, collected from all quarters, and the dissections show a great variety of morbid appearances of the supra-renal bodies—enlargement with induration; fibrous concretions; destruction and conversion into strumous deposits; waste and atrophy, both weighing only forty grains; enlargement with lobulated and tubercular deposit; schirrhus; destruction by abcess. In a word, these bodies are liable to all the acute and chronic pathological changes of other organs; and the most remarkable fact is, that in many instances they have been found, as in the case of Goodman, utterly destroyed by chronic disease, and still the patient has lived on for a time. When these bodies are extirpated by the knife, Brown-Séquard tells us that an animal lives on an average but twelve hours, and it is probable that, where the organ is destroyed in the human subject, he lives on because the chronic disease gradually destroys the parenchymatous structure, and leaves the complicated nervous structures connected with it comparatively uninjured. We have abundant examples of the adaptation of the system to the gradual inroads of chronic disease, as in the lungs, brain, heart and other organs.

The other form of disease, known by the names of *exophthalmic goitre, disease of Graves (maladie de Graves)*, to which I have alluded, is one of rare occurrence and little spoken of by American writers, but has been fully and ably treated in the recent edition of Trousseau's *Clinique Médicale*, and forms the complement of the interesting phenomena that group themselves around the case of Mr. Goodman. It was first described by the celebrated Graves, of Dublin, and afterwards by Brasedam and others, but by no one else so thoroughly as by Trousseau. It is characterized by three leading symptoms,

viz., palpitations of the heart, hypertrophy of the thyroid gland and protrusion of the eye-balls. The latter symptom is so marked in some cases, that the lids cannot cover the balls in sleep, and sometimes even the globe is thrust out beyond the lids and requires to be replaced. Either one of the three symptoms is in some cases wanting, and all three may be, in certain cases, imperfectly developed.

The thyroid gland is hypertrophied in various degrees, and, what is remarkable, the right lobe is almost always more developed than the left. The voice and breathing are often much affected, from the compression of the gland on the trachea and recurrent nerve. The vascularity of the gland is so increased that it often pulsates under the touch, like an aneurism ; and the carotids and other arteries of the neck partake more or less of the same morbid distension.

One of the earliest symptoms to attract attention is palpitation of the heart. The impulse is so violent as to elevate the ribs forcibly. (In the case of Mr. Goodman, the force of the heart was so great as to convince Dr. Stone, of New Orleans, about six weeks before his death, that there was hypertrophy.) The violence of the action is much increased by mental emotion ; the patient is unable to take exercise (as in the case of Goodman), and there is often a bellows murmur with the first sound.

According to Graves, Stokes and Trousseau, there is really, in *some* of these cases of exophthalmic goitre, some degree of hypertrophy, but it is not a *necessary* accompaniment: it is an *effect*, which disappears with the original disease, like the *temporary hypertrophy* that sometimes accompanies pregnancy. Both hypertrophy and dilatation are not, however, unfrequent complications. It is a remarkable fact that, while there is an increased action in the arteries of the neck, there is none in the radial and other arteries of the extremities.

After passing in review the three prominent symptoms of the *maladie de Graves*, viz., the condition of the heart, the thyroid gland and exophthalmia, M. Trousseau enumerates the secondary symptoms, to which much value is attached. They are very variable, as cases necessarily must be, involving so many organs and involving so deeply the complicated machinery of the great sympathetic. "Sometimes," says Trousseau, "the appetite is deficient or whimsical; at other times, on the contrary, it is ravenous; the digestion is active, though emaciation continues to progress. The patients lose flesh and color; some are attacked with diarrhœa, which hastens

emaciation; but when the disease seems to improve, the diarrhœa diminishes and ceases. The patient often preserving the appetite, takes food freely and resumes the appearance of health. Other paroxysms may come and reduce the patient, but ordinarily these become less frequent and the improvement progressive."

The malady is most common in females affected with amenorrhœa, anæmia and well-marked chlorosis; while sometimes it exists in persons of good constitution, in whom there is no trace of anæmia, but, on the contrary, the patients have "a good, rich constitution," with *embonpoint* and full muscular vigor. The temper becomes very irritable; they sleep badly, and the expression of countenance is peculiar and *bizarre;* and this expression, irritability of temper and annoying palpitations are usually the symptoms which drive them to seek medical aid.

The pathology of this disease is complicated and obscure. The hypertrophy of the thyroid gland, of cellular tissue and fat which cause the eyes to protrude, and the activity of circulation about the head and neck, together with the palpitations of the heart, are all referred by Trousseau to one common cause, viz., a morbid condition of the ganglionic system, or vaso-motor nerves. These local congestions all fluctuate with the rapidity of other nervous, or hysterical symptoms. At one moment the thyroid and eyes will both protrude, and at another subside, the blood being thrown forward as in blushing, or in the brain during strong emotions. The blood is directed by certain nervous influences to particular organs. We have abundant facts to prove such actions in nerves, and M. Claude Bernard and other physiologists give some curious dissections, in proof of such functions in the different parts of the sympathetic nerve. The circulation of certain organs is controlled by certain ganglia or plexuses.

The treatment of these cases throws some light on their pathology. The activity of all the circulation above the diaphragm, according to Trousseau, is the cause of the distressing symptoms, and is all attributable to the partial action of a portion of the ganglionic nerves. The indication is, to overcome these local congestions, viz., the swollen, congested and pulsatory condition of the thyroid gland, the exophthalmic eyes, and the tumultuous action of the heart. The indication is met by venesection in some, to prevent impending suffocation and to relieve the engorged right cavities of the heart; by the application of ice to the bloated thyroid gland; and

in all, by the administration of digitalis, to control the over-action of the heart.

I omitted to remark, in the proper place, that there was no appearance in the stools of undigested fat, as is common in diseases of the pancreas.

In conclusion I may say, notwithstanding the obscurity which attaches to the subject in the present imperfect state of our knowledge, and the want of that thoroughness of examination which a professed pathologist might have brought to bear upon it, that I hope this case is not devoid of interest and instruction. It at least adds a few more simple facts to the history of diseases of the renal capsules, and shows the value of the *logic of exclusion.*

Art. VI. TWO CASES OF SEVERE WOUNDS OF THE BRAIN: *By* C. H. Mastin, M. D., *Mobile.*

THE following cases of severe injury done to the brain, with the remarkable length of time which elapsed from the reception of the wounds until the death of the patients, may not prove wholly uninteresting. They add others to the already published list of severe wounds done to the anterior portion of the brain, and I offer them as cases of speculation, to both the physiologist and phrenologist. To the latter they must prove an additional stumbling-block in the way of their doctrine, that "the anterior portion of the brain is the exclusive seat of the intellectual faculties, the throne of the understanding." It may be contended that, in one of the cases, the injury was done to only one half of the cerebrum, and that consequently the other half was left, as in the instance of the double organs, to perform the functions of thought and intellect. Even admitting this doctrine, which has been taught by Gall and Spurzheim and promulgated by their followers, the second case comes in to combat the theory, and leaves them to seek another more rational explanation. Without, however, entering into a phrenological dissertation, or even inviting discussion upon this subject, my intention is simply to record them, as they have fallen under my personal observation, and as they were noted at the time, and from the bed side, in my case books.

CASE I. — Peter Peterson, a German by birth, a seaman by profession, aged 25 years, entered the United States Marine Hospital in this city, on the morning of the 20th of April, 1850, having received a severe wound of the head on the 19th inst. The particulars of the case are as follows: He was a seaman belonging to the British ship "Alberta," then at anchor in the lower harbor of Mobile Bay. An altercation having arisen between some of the ship's crew, when he was sitting upon the deck of the vessel, being approached from behind, he was stricken over the head with an axe, in the hands of one of his shipmates. The axe is one of those known as the Collins axe, and by measurement was found to be five inches in width at the edge, and about the same in depth from the edge to the eye. The blade was thin, not exceeding half an inch in thickness. Upon the reception of the blow, he fell backwards, and for several minutes was insensible. Consciousness having been restored, which was in less than an hour, he was placed in a boat and sent to the city for admission into the hospital. An examination, upon his arrival, established a diagnosis. The axe had penetrated the skull alone, and no serious injury had been done to the brain. This was founded upon the fact that he evinced no symptoms whatever of any serious lesion of the brain. His pulse, breathing and skin were apparently in a healthy and normal state, his vision unimpaired, tongue clean, and intellectual faculties undisturbed; he answered questions with perfect clearness, and expressed the opinion that he was "not much hurt." Having cleared away the hair and spiculæ of bone (fragments of outer table of skull), the wound was drawn together with adhesive strips. Cold water dressings were applied, low diet ordered, a saline purgative administered, and he placed in bed.

Until the fourth day not an unpleasant symptom occurred, and even then a very slight strabismus only was noticed in his right eye. Toward midday a little febrile action set in, which soon passed off. The wound had perfectly cicatrized, and no fears whatever were entertained of the result. This state of things continued until the morning of the 13th of May. Up to this date he had been going around the hospital, from ward to ward, having been placed on the convalescent list! Now, twenty-four days since the reception of his wound, it was observed that he had become restless and apparently uneasy. At 9, A. M., he was seized with a slight rigor, the first unpleasant symptom since his admission; his pulse was feeble and intermitting; strabismus was fully developed, and complete; to

all appearances he was sinking rapidly, and about 11, A. M., a decided convulsion closed the scene.

The autopsy, which I made with great care, immediately after the death, revealed the following appearances:

The calvarium being removed, it appeared that the blade of the axe had penetrated the left side of the frontal bone. Crossing the coronal suture, it passed through the entire length of the parietal bone, passed parallel with the sagittal suture, and about half an inch from the longitudinal sinus, extending to the lambdoidal suture, across which two fissures extended into the *os occipitale*. Crushing through the frontal and parietal bones, it had penetrated the left hemisphere of the cerebrum, through which it had passed, until arrested in its downward course by the petrous portion of the temporal bone on the same side, upon which was seen a deeply indented cut, caused by the edge of the axe, after having passed through the entire depth of brain. Large fragments of the internal table were depressed on either side of the cut, and pressed upon the *dura mater*, which was congested, thickened and covered with patches of organizing lymph. When the *dura mater* was opened, it was found to contain a decomposed mass of brain, almost as fluid as cream, and a fragment of the inner table rested against the *crista galli*.

From the disorganized condition of the brain, the entire left hemisphere being softened, it was impossible to note exactly the precise path of the blade, or to say at what point in their form the different structures were cut; still, by taking the line of wound in the scalp, through the scull, and the point of arrest in the temporal bone, we can easily see that the axe-blade had penetrated through the following cerebral formations: passing through the skull close alongside the longitudinal tissues, it had entered the hemisphere of the brain, incised the fibers of the *corpus callosum*, through which it entered the lateral ventricles. Here it must, as a necessary consequence, have divided the *corpus striatum* in its entire length, the *tænia semicircularis*, the *thalamus nervorum opticorum*, the choroid plexus, and thence onward to the base of the brain, as the deep cut in the temporal process certainly shows. The brain, or more properly speaking, the remnant remaining, was turned out with care, and the right ventricle opened, in which I found a small quantity of pus, or disorganized brain, which apparently had just trickled from the opposite side. A few drops of the same morbid matter had just begun to find their way from the fourth ventricle toward the *medulla oblongata*.

The above is a concise and truthful report of the case, as observed from the moment of entrance into the hospital until the autopsy was made. Through three weeks and three days, after having received this most terrible wound, until the morning of his death, it is astonishing that he should have shown no unpleasant symptoms, had no pain, no paralysis, no aberration of mind, with a brain one-half of which was a putrid mass of disorganized cerebral structure. I offer no speculations: as a witness, I record simply the facts as they were, and leave the rest as food for reflection to the physiologist.

CASE II. — On the 13th of April, 1858, I was requested by my friend, Dr. Geo. A. Ketchum, of Mobile, to visit with him a patient, to whom he had been called on account of a frightful wound of the head. Geo. Bastobel, an Irishman, aged 32 years, a ship-carpenter by occupation, had just been caught by a revolving circular saw, and had received a severe wound of the head and arm. Upon an examination, I found the right arm had been ground up by the saw, and from near the head of the humerus nothing remained of this extremity, save a mingled mass of broken bone, and lacerated flesh filled with saw-dust, chips and dirt. So completely had this arm been crushed and ground up, that scarcely a drop of hœmorrhage had taken place. His skull had been opened from temple to temple, across the frontal bone and parallel with the coronal sutures. The longitudinal sinus had been completely severed, yet gave out no blood: the *écraseur*-like effect of the saw had completely sealed up the opened mouth of this great canal of the brain. The whole anterior portion of both hemispheres had been sawed through, and downward to the orbital plates of the frontal bone the brain was severed. With appearances like these, we very rationally concluded that nothing could be done—that the patient must die, and that within a few hours at furthest. He was perfectly rational, although excessively prostrated from the shock of the accident; yet we had no idea that he would, even for a short time, rally. Apprising his friends of our opinion, and with the suggestion, "keep him quiet and occasionally give him a little brandy," we left, thinking little more of the case.

To my surprise, the next morning about 12, M., we were requested to visit the case, with the assurance that the man was still alive, perfectly rational, and anxious that something should be done for his relief. I called on Dr. K., and in company we again went to

his house. He had fully rcäeted; was perfectly rational; his pulse was one which, under ordinary circumstances, would have been called good; he had rested quietly the night previous; and when we entered his room, we found him propped up in bed and smoking his pipe! He was urgent that something should be done for him, that his wounds should be dressed, and expressed a hope that he would recover. Yielding to his entreaties, we concluded to dress the wound in his head, and if he should bear that well, we would dress the arm; unable to offer him any encouragement as to the results, we hoped at least to render him more comfortable. A quantity of saw-dust, clotted blood, tangled hair, spiculæ of bone, together with lacerated brain, was cleared away from the wound, and the fact revealed, that the whole anterior portion of the brain had been eompletely severed by the saw. A broad ehasm, into which the ulnar edge of the hand could be placed, extending from the zygoma on one side to the zygoma on the other, showed that the frontal bone had been completely severed from its attachments with the parietals, and its cavity emptied of brain, with the exception of a thin stratum lying just over the orbital plate, and which was proteeting, as it were, the chiasm of the optic nerve, where it rested in the *sella turcica*. The olfaetory bulbs were not exposed, but had probably been destroyed, as he had no sense of smell. The anterior portion of the skull was an empty spaee.

With eare sufficient integument was gathered and stretehed over, with which we were enabled to cover the opening. The soft parts were united by silver sutures, and cold water dressing was applied to the sealp. As he appeared to have suffered no pain, had lost no consciousness, was rational, and still urged the amputation of his arm, I concluded to satisfy his wishes. Although I feared the shock of an operation would be fatal, it was equally certain that seeondary hæmorrhage, which was to be expected from the torn stump, would be also as fatal. He was, aceordingly, placed under ehloroform, his arm removed by the eircular method, near the head of the bone, and the dressing usual in these cases applied. The effects of the chloroform having passed off, he appeared in the same tranquil state as before the operation. A few drops of tr. opii were given him, and in less than half an hour he was quietly sleeping.

From this date until the morning of the 18th inst., no symptom of interest occurred to mark the case. His mind was clear, ealm, and in a measure eheerful; he engaged freely in conversation with

his friends, in whom he created even more than hope — belief in the certainty of his recovery. He constantly smoked his pipe, ate his usual food, and partook of his drinks with his accustomed zest, no restrictions having been placed upon him. He enjoyed his rest at night without disturbance, and through the day had no change in the usual calls of nature.

On the afternoon of the 18th he was somewhat restless, and complained of a fullness and throbbing pain in his head. Along the edge of the wound a little creamy looking pus was pouring out from between the sutures. Directions were given the nurse to absorb this, by gentle pressure with a soft sponge, to keep cold cloths applied, and absolute quiet was enjoined. We had no hope of life, but wished to watch the pathological changes, as they appeared.

As is usual on occasions of this kind, and with this particular class and nationality, all hands "got on a general spree." The nurse, with the best intentions, instead of gently pressing out the transuding pus and brain by the sponge, concluded that, upon the principle of pressing out the core of an ordinary boil, he would "gently press" our patient's head. Placing one hand upon the frontal, the other upon the occipital bone, he had but little difficulty in pressing backward the *os frontis*, which, without much force, was separated from its malar and sphenoidal attachments, and was driven into the rear portion of the brain. Our patient, who had sustained for six days the effects of a circular saw, revolving at the rate of 2500 to 3000 times per minute, grinding through his brain, was unable to bear this "gentle pressure" of a friendly countryman, and a convulsion was the consequence. He sank rapidly, and died on the morning of the 19th, more than seven full days from the reception of the wound. He would, in all probability, have lasted some time longer, had not the accidental pressure been made, which produced the speedy death.

We were not granted an autopsy, and can say nothing as to the appearances of the remaining brain. We know that this man lived for seven days, after having had the whole anterior portion of his brain, almost as far back as the fissure of Sylvius, removed from his skull; that his animal and intellectual faculties were unaltered during this time; and that, had it not been for an accident, he would probably have lived even longer.

It has not been my intention to do anything more than record these cases. To the surgeon they are interesting wounds of an im

portant organ; to the pathologist, as illustrating the severity of wounds done the great centre of organic life, they serve to show how much may be borne, and yet death not ensue. The physiologist may explain them—I cannot.

Art. VII.—DOUBLE AMPUTATION:

Case of Amputation of the thigh and leg of a boy five years and six months of age, and Recovery. By L. T. Pim, M. D., New Orleans.

CHARLEY, Æt. five years and six months, of leucophlegmatic temperament, son of E. J. Barkdull, Esq., residing at No. 367 St. Andrew street, Fourth District, while playing on the railroad was run over by a horse-car and injured as follows:

The knee and ankle joints of the right leg were severely comminuted, in addition to two compound, comminuted fractures of the tibia and fibula, one at the middle and the other at the lower third, with disarticulation and complete detachment of the bones of the leg from the tissues. The soft parts were completely stripped from the leg, the foot retaining its connection only by skin and a few lacerated fibres of muscular tissue. There was also a compound, comminuted fracture of the astragalus and metatarsal bones of the left foot, the metatarso-phalangeal articulations being severed from their connections by an irregular transverse laceration extending across the bottom of the foot. The ankle joint was comminuted; and the soft parts, extending above the bellies of the gastrocnemii muscles, were severely contused and infiltrated with blood.

The accident occurred at 6½ o'clock, P. M., June 19th, his general health having been impaired by a recent attack of intermittent fever. Upon attempting to raise the lower extremities after the receipt of the injury, and finding that they were powerless, pointing to them, he said to the driver of the car, "look what you have done, sir; you have broken both my legs."

Whilst being conveyed to his home, he became insensible with syncope, partly from the shock, but chiefly from the loss of blood from the right limb, which was excessive.

Dr. Stillé was summoned to the case, and Dr. Fisher, who was fortunately passing the house at the time, was also requested to see

him. Finding immediate surgical aid necessary, because of the profuse and exhausting hæmorrhage, Dr. Stillé requested the presence of my friend and partner, Dr. Scott, and myself. I had crossed the river, and on my return complied with the summons. Arriving at the house, I found the patient completely anæsthetized, and Dr. Scott, assisted by Drs. Stillé and Fisher, amputating the right thigh at the superior part of the lower third by the circular method; and I assisted in the completion of the operation. The femoral artery was the only vessel requiring ligature. After the hæmorrhage ceased, the stump was dressed with light cold-water dressings. Half an ounce of brandy and fifteen drops of laudanum were administered, and the patient put to bed with the head lower than the body, with instructions to repeat the brandy every hour during the night, or until the skin became warm and the pulse stronger. Upon taking leave of Drs. Stillé and Fisher, Dr. Scott and myself were requested to take charge of the patient.

Called with Dr. Scott next morning at 8 o'clock. Patient had been restless throughout the night; pulse small, frequent and very feeble; extremities cold; skin below natural temperature; *frequent and severe spasms of the flexor muscles of all the extremities.* In other words, notwithstanding the dependent position of the head, the hourly administration of brandy with five or six drops of laudanum during the first three or four hours, and the application of warmth to the body and extremities, reäction had not been established, and spasms had supervened. This unexpected complication determined us to wait no longer, and informing the parents of the necessity for immediate amputation, and the probability of the patient's sinking under the operation, with their consent, assisted by Dr. Scott, I amputated the remaining leg one inch below the tubercle of the tibia, by the single flap operation. The anterior and posterior tibial arteries were the only vessels ligated. There was not an ounce of blood lost during both amputations. The continuance of the spasms in the stumps and extremities, generally caused considerable difficulty in applying the ligatures. Light cold-water dressings were used, as in the former case. Half an ounce of whisky and twenty drops of laudanum were administered, with instructions to repeat the whisky — which I like better than brandy in the treatment of surgical cases — in smaller quantity every hour during the day.

Called with Dr. S. at 8 o'clock, P. M. Patient had been very restless; had not slept; pulse 120 and very feeble; surface of the body

and extremities below natural temperature; spasms continue with partial delirium, the patient often exclaiming, "take me away from the car." Ordered whisky, laudanum and fluid extract of valerian to be given every hour during the night, omitting the laudanum after the third dose.

21st. 8 o'clock, A. M. No change in the symptoms; the stumps were cold, patulous and insensible, and exuded a bloody serum. There had been no hæmorrhage. Continued treatment, substituting warm instead of the cold water dressings.

9 o'clock, P. M. No change in the symptoms. Continued treatment.

22d. 8 o'clock, A. M. Patient had slept but little; pulse 115 and stronger, with slight increase of temperature of skin; tongue furred and tremulous. No other change in the symptoms. Continued treatment, with extract of beef every three hours.

9 o'clock, P. M. But little change since morning. Pulse probably slightly increased in volume, with a corresponding increase of temperature of the skin. To combat the nervous depression and perversion, so decidedly marked in the feebleness and frequency of the pulse, the diminished temperature, the spasm and the mental aberration, and establish reäction, he was ordered, in addition to the former prescription, calomel, gr. ss. and opium, gr. $\frac{1}{4}$, to be given every three hours.

23d. 8 o'clock, A. M. Patient had not been so restless; had slept a few hours intermittingly; pulse 110 and increased in force and volume; skin but little below natural temperature; appearance of tongue unchanged; spasms diminished in severity and recurring at longer intervals; delirium less marked but continuous; bowels have been opened. Continued treatment, with extract of beef, milk punch and egg-nog every three hours alternately.

9 o'clock, P. M. Had been more comfortable during the day; pulse 102 and stronger; temperature of skin normal; tongue furred but less tremulous; spasms and delirium have subsided; bowels have been opened; surface of stumps warm and becoming sensitive. Discontinue calomel, opium and valerian; continue whisky in smaller quantity and at longer intervals, with warm dressing to stumps.

24th. 8 o'clock, A. M. Had a comfortable night; slept well; pulse, skin and tongue favorable; no recurrence of spasm or delirium; stumps exhibit the development of suppurative inflammation. Con-

tinue whisky and the prescribed nutriment. Removed sutures, discontinued water dressings, and applied adhesive straps and roller.

On the evening of the 29th there was a recurrence of intermittent fever, with acidity and diarrhœa, which were speedily arrested with quinine, bismuth and opium. The ligatures came away on the tenth day, and no hæmorrhage ensued.

Notwithstanding the soft parts preserved were ample to completely cover the extremity of the bone in the thigh, the constantly recurring spasms and the perpendicular position of the limb, which could not be remedied, caused a protrusion of the femur to the extent of half or three-quarters of an inch, which I removed with the saw on the sixteenth day. Afterwards the process of granulation progressed rapidly and without interruption to the completion of cicatrization, on the thirty-second day, except immediately around the bone, which cicatrized on the forty-fifth day.

The points of interest in this case are so numerous and apparent, that I have thought proper to publish it without comment. These are the age of the boy; his temperament; his previous ill health; the severity of the shock from the extensive injury; the comminution of joints; the compound fractures; the contusion and laceration of soft parts; the profuse hæmorrhage, as the immediate result of a lacerated wound; the amputation of the thigh during collapse; the supervening spasms and delirium and the period of their development; the amputation of the second limb before reäction had been established, rendered necessary because of the existence of spasm; the subsidence of spasm and delirium under the use of calomel, opium and whisky; the complication with intermittent fever and diarrhœa, and the rapid and complete recovery of the patient.

ART. VIII.—CASE OF NEURALGIA RELIEVED BY TREPHINING: *By* J. T. GILMORE, M. D., Mobile.

DURING the latter part of March last, an elderly lady, about fifty years of age, applied to me with a neuralgia of some eight years' standing. The pain on the right side occupied the branches of the fifth pair, and the spinal nerves of this side were more or less affected to a point as far down as the lower angle of the scapula. On the left side it was confined to the branches of the fifth pair. Her

suffering was not continuous, but in paroxysms, recurring every few seconds. Pressure on the branches of the fifth pair of both sides would produce a paroxysm in these nerves. Both temples were considerably puffed, and there was some swelling at the lower angle of the scapula. In an investigation of her case, I found that she had enjoyed unbroken good health until the commencement of her neuralgia. She had never suffered from any uterine derangement, rheumatism, gout, or any of those diseases that are so frequently productive of or associated with an intractable neuralgia. About twenty-five years since she was kicked by a horse, which fractured the skull. The physician who attended did not deem any surgical interference essential, and therefore left the repair of the injury to nature. This resulted in a marked depression of the skull at the junction of the right parietal and frontal bones, about two inches to the right of the suture of the parietal bones.

The first indication of trouble from this was about eight years since, when she commenced to experience a burning and throbbing sensation at this point, and in a very short time neuralgia appeared, first in the branches of the fifth pair of the right side, and subsequently, probably in the course of some five months, in the branches of the same nerve of the left side. At these points it remained for more than a year, and then gradually extended down as low as the point before indicated on the right side. On the right clavicle there was an eccentric enlargement, situated about two inches from its sternal articulation, that approached in size a pullet's egg. This I supposed to be a mere coincidence, but future developments revealed otherwise. Her appetite and digestion have remained unimpaired. The only thing about her out of joint was this neuralgia, and all the indications pointed plainly to the depressed portion of the skull as its cause.

At the time that this patient presented herself, I had just finished reading M. Trousseau's articles on nervous disorders, in his recent work, *Clinique Médicale de L'Hotel Dieu*. He devotes a separate article to a form of neuralgia which he designates "*Nevralgie Epileptiforme*," of which there are two kinds. The most common is a neuralgia of the fifth pair, occurring by paroxysms, without any convulsive twitchings of the muscles in the region of the part affected; the other, with that convulsive twitching ordinarily termed *tic douloureux*. He calls these forms of neuralgia epileptiform, from the fact that the pain occurs by paroxysms, and that it is accompanied

or preceded by feelings of giddiness or dizziness assimilating the *aura epileptica*. He goes on to mention two cases of this neuralgia that suffered likewise from epilepsy. He also maintains that this form of neuralgia and other nervous troubles, such as ataxic hypochondriasis, certain forms of hysteria, lunacy, etc., are not concomitants or results of epilepsy, but are referable to the same causes. Trousseau speaks of this form of neuralgia as confining itself to the fifth pair of nerves; yet the unmistakable evidence that the neuralgia owed its origin to this depressed portion of bone—one of the common causes of epilepsy—caused me to think that it was purely this form of disease, notwithstanding its extension to the lower portion of the right scapula. She had been subjected to medical treatment from the commencement of her trouble, and the resources of the Materia Medica had been exhausted. I advised at once the removal of the depressed portion of skull, which I did on the 14th of April last, using Galt's trephine, which covered the external depression. After the removal of a button about the size of a silver quarter of a dollar, I found that I had gone through nearly an inch in thickness of a bony mass, and around the internal circumference I had created with the trephine, there remained a ridge that tapered off into the thickness of the healthy skull. I had bored through an internal exostosis. I at first attempted to remove the ridge with a rasp, but found it so hard that I could do nothing without using a great deal of force, and therefore determined to rely upon the absorption and thinning of the edges that would likely result from the operation. Not an unpleasant symptom occurred after the operation, until she was able to be about. The neuralgia immediately subsided, and everything went on favorably until three weeks after the operation. The soft parts had entirely healed, and she expressed herself as feeling better than she had for many years.

She lived in the suburban portion of the city, and had to go about two miles to market. On the 12th of May I was sent for in great haste to see her. I found her extremities cold and almost pulseless. Her breathing was very much oppressed, and she complained of great pain and a feeling of constriction in the region of the heart. There existed also considerable nausea and some vomiting. In the morning of the above date she had gone to the market, and went about town attending, to some other business. The day was warm and sultry, and the exhaustion resulting from over-exertion brought on this condition. I forgot to mention that the bellows-

murmur was distinctly audible at the apex of the heart with both sounds, during this paroxysm. The heart's action was irregular and intermittent. I immediately gave her, hypodermically, a half grain of morph. sulph., and used mustard and warm bricks to the extremities. In a very short time the heart's action was restored, and she complained only of an occasional darting pain in the region of the heart, extending down the left arm. In about twelve hours the same symptoms suddenly reappeared, and I employed successfully the same means, keeping her partially under the influence of morphine for forty-eight hours. There occurred no more of these paroxysms. Before operating I examined several times her heart, and am fully satisfied that no disease existed there. The disturbed action of her heart, and the alarming condition in which I found her on the 12th of May, were evidently due to a translation of the neuralgia to the cardiac plexus. She is now entirely well. The puffiness about the temples has disappeared, and thus far the operation seems to be a success. The enlargement of the clavicle commenced disappearing after the operation, and of it there scarcely remains a trace. This tumor, which was hard and bony previous to the operation, I think resulted from excessive nutrition, produced by neuralgia at that point, for it was very painful and tender to the touch.

Trousseau declares that he has never yet seen or known a patient suffering from this form of neuralgia permanently cured. He says that temporary relief can be produced by a section or removal of a portion of the painful nerve. Nelaton mentions a case permanently relieved by the removal of a considerable portion of the diseased nerve. I am inclined, however, to believe that the relief in my case will be permanent, notwithstanding the almost universal testimony of experience to the contrary. There was far more than the ordinary vascularity at the point affected, but, so far as I could judge, there was no structural change, either of the brain or its membranes, at the point of depression. The neuralgia, evidently due to depression at this point, will, like its fellow disease, epilepsy, when due to the same cause, I think probably be permanently removed.

Trousseau mentions another symptom as always existing in neuralgia, which I have not met elsewhere, viz., that there is always a tenderness upon pressure of the spinous processes at that portion of the spine from which the neuralgic nerve emerges, and when there is neuralgia of the fifth pair, that there is always tenderness over the first and second cervical vertebræ.

This markedly existed in my case—so much so that a paroxysm could be produced by pressing upon the spinous processes down as low as the neuralgia extended. It gradually disappeared after the operation, and is an additional reason to induce me to think that my patient is permanently cured.

ART. IX. LAMINARIA DIGITATA (SEA-TANGLE) AS A DILATING MEDIUM: *By* A. H. CENAS, M. D., *Emeritus Professor of Obstetrics, University of Louisiana.*

THIS admirable and extremely economical tent dates back only four years, and has in that time rendered such signal services to the surgeon and obstetrician, that its superiority is justly acknowledged, and in a short time it will take the place of all others in use. It was first used by a Scotch physician, Dr. Sloan, of Ayr, who claimed for it the following properties: "It is abundant, cheap, and can be easily worked; is cleanly, and possesses very considerable dilating powers; can be used in extreme narrowness of os and cervix, where sponge cannot, and is free from the offensive smell that attaches to the latter."

My limited experience with it justifies the above, and in two cases of dysmenorrhœa and one of atresia vagina, it answered fully my expectations.

CASE I.—Mrs. H., aged about twenty-six years, married (sterile), and suffering from dysmenorrhœa from date of marriage; monthly paroxysms so severe that she has to go to bed and take large doses of anodynes and anti-spasmodics. She had just recovered from a more than usually severe attack when I saw her, April 20th, and expected to be quite well and entirely free from pain or distress until the next period.

On examination with speculum, I found the cervix somewhat more elongated than natural, and the os uteri so narrow that a silver probe was introduced with great difficulty. After considerable trouble, I passed a stem of laminaria, very little larger than the probe, and left it in for eight hours, during which time its dilation caused so much pain and nervous irritation that I had to remove it, but it had already swelled to at least three times its natural size, and the speculum showed a very considerable enlargement of os uteri.

My patient suffered for nearly a week from a nervous and hysterical irritation, the result of the operation, and required a good deal of treatment therefor; on recovery from which, being loth to suffer a repetition of trouble, I had to wait until next period, which, to our great satisfaction, passed off easily and naturally. Another has followed equally easily, and she considers herself now in better health than she has been since her marriage.

Case II. — Mrs. J., aged twenty-four years, six years married (sterile), and in excellent general health, has suffered with dysmenorrhœa since her girlhood, and has to go to bed and take large doses of anodynes at every monthly period; flow scanty and clotted, and is preceded by sense of weight in pelvis, extending to loins and lower extremities; headache, nausea, and often severe vomiting, besides a good deal of mammary engorgement and distress; discharge at first guttatim, but gradually increases in quantity, when relief follows in the course of forty-eight hours.

Examined with speculum, May 25th, and found cervix somewhat elongated, and os uteri a mere slit, admitting with difficulty a small silver probe; sensibility normal.

Introduced with difficulty a small stem of laminaria, which I had whittled down and smoothed to the size of the probe, and suffered it to remain about eight hours, as it caused very great suffering. On being removed, it was found enlarged to about four times its dry size. As the uterus had not suffered from its sojourn, I inserted another and somewhat larger stem, and so on from day to day for five days, at which time the os uteri had attained a size that readily admitted a bougie.

My patient at this time, May 30th, thought herself obliged to return home to the country, much against my wishes, but promised to come back after her menstrual period, should no improvement have taken place in its behavior. As she has not done so up to this time, July 24th, I am inclined to think that the treatment was successful.

Case III.—*Atresia Vaginæ, result of Instrumental Labor.*—Mrs. H., aged twenty-eight years, was delivered of her first child about five years ago, with forceps, and child lost; after which, inflammation and sloughing of the vagina took place, which terminated apparently favorably. But the courses did not return for more than six months, and when they did, were preceded by severe pains in loins and abdomen, with sense of weight and bearing down, discharge took place

guttatim and continued for more than a week. After tolerating her sufferings for nearly six months longer, she consulted her physician, who made a careful digital examination and pronounced all right, but that she was suffering under nervous dysmenorrhœa, the result of her severe labor, and that if she had another child she would be well again. Reässured by this opinion, she tolerated her sufferings for nearly three years longer, when finding that no child came to her relief, she consulted me about 1st June.

A digital examination discovered the vagina terminating in a shut sac, about three inches from os externum, and cervix uteri could be felt on making firm pressure through the septum, but no orifice could be detected through which the catamenia issued. Examination with speculum discovered a mere slit in the bottom of the sac on the left side, which was no doubt the orifice to the parts above. But as I failed to penetrate it with the small probe used in the former cases, I made up my mind to wait until the next monthly period that was on the eve of occurring. When it did occur, a few days afterwards, I saw through the speculum blood oozing through the slit, and I was then able to pass the probe without much difficulty to the depth of about one and a half inches.

The course to be adopted was now plain. With laminaria stems, pared down and smoothed, I dilated the slit day by day more and more, until by the time the next monthly period was due, I could introduce the end of my index finger. The flow now came on suddenly, freely and without pain for the first time in four years, to the great satisfaction of every body.

I might now have considered my patient well, as far as her catamenial health was concerned. But as it is probable that she may become again pregnant, I deem it proper to avoid all future trouble and difficulty resulting from parturition, to endeavor to dilate the vagina to its original size, which I expect to accomplish with sponge tents, not having at hand stems of laminaria of sufficient size.

ART. X.—FRACTURE of the INFERIOR MAXILLA:

Use of the Interdental Splint of BEAN. *Case reported by* WARREN STONE, *Student, Charity Hospital.*

JOHN H. was admitted into Charity Hospital on May 10, 1866, with the inferior maxilla fractured in three places—one on right side of symphisis, line of fracture running between the canine and

bicuspid teeth of that side; one on left side of symphisis, line of fracture running between canine and incisor teeth of that side, and the third involving the ramus immediately above the angle of the right side. There was considerable displacement of the fragments, as might have been expected, and much tumefaction of the soft parts, the patient having been subjected to the brutal pummeling of a burly Irishman. It was determined to try the use of the "interdental splint," invented during our late war by J. B. Bean, D. D, S., of Atlanta, Ga. In consequence of the inflamed and painful condition of the tissues involved, the splint could not be immediately adjusted, but a temporary bandage was applied to keep the parts at rest, and the ordinary means resorted to in order to reduce the swelling. This end was obtained in a few days. To Dr. Kells, who kindly volunteered his services, we are indebted for the splint which was used with so much success.

On the 14th May the patient was taken to the office of Dr. Kells, and a wax impression was made of the crowns of the teeth of the upper jaw, and of each fragment separately of the injured jaw, by means of the ordinary "impression cup" of the dentist. From these impressions casts of plaster of Paris were accurately prepared, faithfully representing the teeth. These models were then carefully adjusted, and placed on the "maxillary articulator," an instrument in the use of all practical dentists. These model jaws having the exact mechanism of the natural jaw, were separated for the distance of from a quarter to half an inch, and upon them was constructed a wax splint. From the surface of this wax splint, corresponding with the indentations of the innermost incisor, canine, and first biscuspid of the upper jaw on left side, was removed a portion, including at least half its thickness. The object of this was to provide an opening for the cleaning of the mouth and the introduction of nourishment. From this model a plaster cast was procured. The plaster mould was then filled with the gum, and subjected to the necessary heat for vulcanization. This gave a smooth and inflexible splint, corresponding minutely to the patient's jaws. It was introduced into the mouth, the teeth were made to correspond to the indentations upon it, and there maintained by a common double-cross roller bandage, a piece of surgeon's pasteboard having been fitted to the under surface of the jaw. The necessary manipulations required in adjusting the instrument gave the patient considerable pain, but this soon subsided, and the next day he was doing finely, with the fractured extremities in perfect apposition.

The splint was worn for three weeks, the patient experiencing perfect ease. At the end of this time it became displaced, owing to the accidental loosening of the bandage, and was removed, that the jaw might be examined. The antagonism of the teeth was found perfect, and a sufficient degree of union to justify the removal of the splint.

A firm bandage, with the same pasteboard splint that had been formerly used, was applied. Two weeks later a fistulous opening formed in the left side; several pieces of exfoliated bone were removed, and in due time the fistula closed. A few days afterwards the left lower canine tooth was found loosened from its attachment, and removed with gentle force. Shortly afterwards the man was discharged, with a face exhibiting no deformity whatsoever. Some thickening of the tissues surrounding the ramus and general weakness of the organs of mastication interfered with the free use of the jaw, but the natural configuration of the bone was perfectly preserved.

There is no doubt that the "*mental compress*" and "*occipito-frontal*" bandage contribute much to the ease of the patient, and render more certain the gaining of the end for which the instrument is intended.

It certainly would have been used in this case, but for the difficulty of securing one in proper time. In its absence constant attention was necessary to preserve the integrity of the bandage and maintain the splint in place.

It will be observed that the opening in the splint in this case was so made as to allow the continuity of its lower surface embracing the crowns of the teeth of the lower jaw. The inventor has his extending from the molars in each side, with a connecting strip running behind the upper surface of the superior incisors, leaving a horizontal opening between the cuspids. The nature of the fracture in this case required the above mentioned modification.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

Art. I.—*On the Treatment of Granular Ophthalmia by Pressure:* By William Stokes, Jr., M. D., Ch. M. Univ., Dub.; L. R. C. S. I.; Surgeon to the Meath Hospital and County of Dublin Infirmary, etc.

I HAVE little doubt that, in this country, at least, one of the most frequent causes of incurable blindness among the poorer classes is that form of granular inflammation of the conjunctiva described by oculists under the various names of "granular lids," "conjunctivitis granulosa," "trachoma," etc. One cannot but be convinced of this on visiting some of the remote districts of this island; and it is truly melancholy to see what vast numbers of otherwise healthy men and women are to be found in the Union workhouses and the various blind asylums of the country, deprived of all means of self-support in consequence of this distressing affection, or of some of its numerous sequalæ. Whether it is that the humbler classes of this country are not so well housed, clothed or fed as those of our wealthier neighbors at the other side of the channel, or that there are some atmospheric or geological peculiarities which tend to induce the disease, it is impossible to say. But as far as my experience goes, the disease, as observed in Ireland, is of a more formidable type, and is more intractable to treatment than in England and many of the other European countries, excepting perhaps Bohemia. The surgeon engaged in practice in Ireland, especially, should give a careful consideration consideration to any suggestion based on a sound surgical principle, for the improved treatment of this grave disease; and the method I wish to advocate is, I think, founded upon such. Let me not be understood, however, to advocate this treatment to the exclusion of other methods which surgeons have adopted for the cure of this disease. But I hope to be able to show that pressure—which has nothing in it antagonistic to other therapeutic measures, which may be simultaneously adopted—applied in the manner I shall describe, should be allotted a high rank among the therapeutic agents which are made use of in the treatment of granular ophthalmia.

In this communication I shall not enter into the question as to whether this affection depends on any constitutional dyscrasia, or is merely the product of some local irritation. The anatomical nature of conjunctival granulations, which are not new formations or growths, but merely an abnormal or pathological condition of previously existing elements, and the facility with which, under certain injurious influences, the disease can be induced, point much rather

to its being a local affection than, as is generally held, a mere expression of a strumous diathesis. Professor Stellwag is also of this opinion, and observes that the injurious influences which induce trachoma are the same which induce catarrh, blenorrhea, pyrorrhea, herpes, etc.; and that among them impure air, dust, smoke, acrid vapors, exhalations, etc., are the most prominent. "Why these influences," the Professor observes, "in one case produce one form, and in another case another form of conjunctival inflammation, is not explained. With regard to trachoma, we cannot be mistaken in assuming that the more frequent or uninterrupted influence of such pernicious agents, and the long-continued maintenance of a certain condition of irritation in the conjunctiva, constitute a predisposing condition. It is natural, then, that large barracks, poorhouses, houses of refuge, educational institutions, lodging houses, large sleeping rooms for workmen—places, in fact, in which a large number of men live together, and where the cleanliness and ventilation is defective, serve as niduses for trachoma ; while individuals who are subject to such influences only occasionally, after long intervals and for a relatively short period, suffer less frevuently, and become affected in stead with a catarrh or a blenorrhea."* Such are the views of Professor Stellwag with regard to the etiological conditions which produce this affection. I shall, however, refrain from discussing at greater length this part of the subject, but proceed to consider what I believe to be the most rational method of treating this formidable affection.

Every practical surgeon must at once acknowledge the very great importance of pressure in surgical therapeutics. The beneficial effects ef it in the treatment of urethral stricture, in many forms of chronic articular disease with thickening of the synovial membrane, also in the treatment of exuberant granulations on unhealthy ulcerated surfaces, are familiar to every one of even limited hospital experience.†

The physician, too, has occasional opportunities of observing the beneficial effects of pressure in arresting morbid local action. I allude here particularly to the interesting fact, as observed by my father, of the arrest of the constitutional symptoms of pulmonary consumption in certain cases of pleural fistulæ, and consequent empyema and pneumothorax. This circumstance has been observed in several cases in the Meath Hospital, and seems to be attributable to the pressure exercised on the diseased and collapsed lung. Certain it is that, as in several cases observed in Dublin, the patient, after having recovered from the shock produced by the accident, and

* Kehrbuch der practischen Augenheilkunde. Von Dr. Karl Stellwag von Carion, s. 391.

† The treatment of anthrax by pressure, first suggested and practised by Mr. O'Ferrall, of St. Vincent's Hospital, in this city, has engaged the attention of many distinguished surgeons, and amongst them are still found many warm advocates for it From inquiries in to the pathology of this affection, I am inclined to the opinion that the old system of crucial incisions, provided they are sufficiently deep and complete, appears to be the most rational mode of treatment. The distinguished French surgeon, M. Neleton, who had abandoned the treatment by incisions, now recommends it as being the only one likely to be of real benefit. It is, however, by no means necessary that all cases of anthrax should be so treated, the free use of the bistoury being only advocated by M. Neleton in the cases where the anthrax has an indurated base. Mr Hugh Carmichael has advocated the use of pressure in certain cases of venereal phagedenic ulceration (*Dublin Journal of Medical Science*, September, 1838) Not having, however, an opportunity of witnessing the effects of this practice, I am not in a position to verify or disprove Mr. Carmichael's statements with regard to the efficacy of this procedure.

the consequent effusions of air and liquid into the pleura, may experience a gradual improvement in general health, and ultimately so far recover that all constitutional symptoms of phthisis disappear for a length of time.*

Cases, too, have been observed of the disappearance of splenic tumors under continual pressure. The late Mr. Kirby, of this city, used to detail a remarkable example of this. Atrophy of the lung, to the last degree, has been noticed by Andral, in his *Clinique Médicale*, as a result of pressure by a mediastinal tumor; and the termination of cases of aörtic aneurism and intra-thoracic cancer, by sphacelus of the lung, is an example of the effects of pressure in modifying normal organizing processes.

There seems some reason to believe also that, even in essential diseases, the production of the secondary organic effects—as, for example, the development of pustules in small-pox—may be prevented by early modification of the local vascular action by pressure. The following case, already noticed by Dr. Stokes in his paper on the prevention of pitting in small-pox, is of such extreme clinical interest that I shall make no apology for quoting it :

"A man who had been under treatment in the surgical wards of the Meath Hospital for a chronic disease of the knee joint, became affected with fever, followed by the appearance of variola of a severe type. He was transferred to the medical wards, and went through the stages of the disease in its confluent form. His knee had been strapped with mercurial plaster ; and at the period of retrocession and the falling of the scabs, the dressings came off. We then observed this singular appearance : Above and below the knee, and ending and commencing at a line exactly corresponding to that of the strapping, the integuments were covered with blackened scabs, while the knee remained completely free of any sign of eruption, and silvery white, contrasting strangly with the condition of the parts above and below it."

There can be little doubt that in this case the arrest of the postular development was due to the diminution or modification of the vascular action in the part by pressure, and I think it also probable that the treatment for the prevention of pitting of the face in confluent small-pox, which is adopted with such signal success in the Meath Hospital by the application of poultices, is, to a certain extent, due to the same cause. These observations tend strongly to show that the development of pustules may be, at all events, considerably arrested by diminishing vascular action. Does the converse of this hold good? Undoubtedly. The development of pustules is observed to be especially confluent in those places in which, previous to the pustular formation, a determination of blood has been induced. For example, in situations to which mustard poultices may have been applied to relieve pain previous to the development of the eruption.

The beneficial effects of pressure are, however, much more frequently observed in many forms of the so-called surgical diseases. "By diminishing," as Professor Stellwag observes, "the calibre of

* See article "Pneumothorax," in the *Cyclopædia of Practical Medicine*, by the late Dr. James Houghton. Similar circumstances are detailed by Dr. Stokes, in his work on *Diseases of the Lungs and Windpipe*.

the vessels, and consequently hyperemia and exaggerated production of elements," it acts as a direct antiphlogistic; and it is, therefore, of paramount importance in dealing with many forms of ophthalmic disease, and in the after treatment of ophthalmic operative procedures. Bearing these facts in mind, and those of the case I have just adduced, may we not reasonably *suggest the great probability of the pressure bandage serving as a powerful prophylactic in the ophthalmic complications of variola.?*

Von Græfe has recently discussed the subject of pressure bandages in ophthalmic therapeutics (*Archiv. f. Ophthal.* IX, 2 p. 111-152. 1864). He commences by dealing with the subject historically, and mentions that even in the early records of ophthalmic surgery we find the pressure bandage made use of in casesof exophthalmos, staphylomata, diseases of the lachrymal sac, injuries of the bulbus-oculi, etc. Among modern ophthalmists, Sichel and Arlt* have the merit of directing particular attention to the importance of pressure bandages, especially in connection with the after treatment of extractions. In addition to the cases of flap extraction, in which the pressure bandage is so valuable, Von Græfe discusses the value of it in cases of linear extraction, inter-ocular hemorrhages, partial escape of the vitreous body after removal of staphylomata; injuries such as perforation of the sclerotic, with partial prolapse of the choroid; also to promote healing in the after treatment of operations engaging the conjunctiva or lids—in cases of purulent infiltration of the cornea, corneal ulcerations, with prolapse of the iris, and in pustular or ulcerative destruction of the cornea.

Although, as far as I can determine, no mention of the treatment of granular ophthalmia by pressure, in any form, has as yet appeared in the literature of ophthalmic surgery, it has, nevertheless, been applied. In some of the Egyptian hospitals, as I have recently learned from a trustworthy authority, a favorite treatment for granular lids, which so frequently occurs as a sequela of the so-called Egyptian ophthalmia, is to strap down the eyelids by layers of adhesive plaster. This must produce a certain amount of pressure, which most probably accounts for the treatment proving so beneficial. I have also learned from Dr. Wordsworth, of the Moorfields Ophthalmic Hospital, London, during a visit which he paid to Dublin last autumn, that he has treated some cases of granular ophthalmia solely by the application of compress bandages, and with satisfactory results.

It was during a conversation with my friend, Dr. Robert M'Donnell, on the subject of granular ophthalmia, that it occurred to me that pressure would most probably best succeed if applied to the granular surface of the conjunctiva palpebrarum, without, at the same time, causing any undue pressure on the bulbus oculi. Dr. M'Donnell had already, in some cases of granular ophthalmia, inserted between the affected lids and ball of the eye masks made of glass and of the form of the ordinary artificial eyes, for the two-fold purpose of preserving, if possible, the cornea from the mechanical irritations produced by the granulations, and also to subject these to a certain amount of pressure. Owing, however, to the dif-

* *Jahrbuch der œesammten Medicin*, B. 128, P. 238.

ference in the convexities of the mask and the bulbus oculi, the amount of pressure on the latter produced at the edges of the mask prevented the patient from bearing the instrument beyond a short space of time. The problem to solve, therefore, was to devise some means by which a continued pressure could be applied to the granular surface of the conjunctiva without at the same time distressing the patient by any undue pressure on the bulbus oculi.

It consists of two highly polished ivory plates, made somewhat thicker at the upper part, corresponding to the reflected portion of the conjunctiva, at which situation the granulations are generally most abundant and of largest size; at the lower extremity of the inner plate a very delicate spring, made of gold wire, was attached, terminating in a broad button, which made slight pressure on the anterior or convex surface of the ivory plate. The outer or anterior ivory plate is removable, there being no attachment to the broad button at the end of the gold spring. This instrument I found easy of application and capable of being borne by the patient without any difficulty. The inner plate being first introduced under the eyelid, and the anterior plate then being placed on the outer surface of the eyelid, was held in its place by the spring.

One disadvantage of this instrument was soon obvious, namely: the want of power to regulate the amount or degree of pressure to be applied. To be able to regulate this is of great importance in treating the disease in different stages of its development. To rectify this deficiency Mr. W. Pearsall, a pupil of the Meath Hospital, and a skillful mechanician, devised and constructed a simple but ingenious modification of the first compressor I have described, and by which the pressure can be increased or diminished according as the surgeon thinks fit.

We may now proceed to consider briefly some cases of granular ophthalmia which have been treated by pressure in the Meath Hospital. The first of these was that of S. C., aged nineteen, who was admitted into the Meath Hospital on the 25th of last August. She had suffered from an acute conjunctival inflammation three months previously, and, at the time of her admission into hospital, the conjunctival surfaee of both upper eyelids presented numerous and well marked examples of what are recognized by ophthalmists as pure papillary granulations. There was considerable impairment of vision, in consequence of corneal opacity, depending partly on secondary keratitis, and partly on the well marked development of the superficial form of pannus, or pannus of the first degree, as described by Von Græfe in his clinical lectures. In addition to these there were several small ulcerations situated, for the most part, on the upper portions of the cornea.

I looked upon this case as one particularly well adapted for pressure, and the result showed that my anticipations were well founded. I commenced by applying the lid compressor for one hour daily; at the end of ten days, finding that the patient bore the instrument without any annoyance, and that there was a marked improvement, not only in the affected portion of the conjunctiva, but also in the cornea, the pannus having to a great extent disappeared, I increased the time of application to two hours daily. This I continued up to

the end of the fourth week. At this time the cornea and affected portions of conjunctiva began to assume quite a normal appearance, and an obvious improvement in the patient's power of opening the lids was observed.

The patient now could bear the instrument for four hours daily, and at the end of the seventh week I looked upon the case as one which had been brought to a successful termination. I did not, however, dismiss the patient from the hospital, as I wished to satisfy myself, if possible, that this signal improvement would remain permanent. At the end of three months the patient returned home.

The next case to which I shall allude is that of J. B., a young woman aged twenty-four, who was admitted into the Meath Hospital on the 20th of last September. She had been under treatment in the country for some time previously, and the surgeon under whose care she had been had repeatedly scarified the granulations, and followed up this treatment by the free application of caustics. This case, which at the time of the patient's admission into hospital presented, at and about the upper portion of the reflected conjunctiva, a large cluster of well formed granulations, I treated by combining pressure with applications of a weak solution of nitrate of silver. At the end of three weeks the patient, at her own request, left the hospital. The improvement certainly was very great, and showed, even in a more marked manner than the former case, how easily the instrument is borne.

The third and last case to which I shall now allude is that of C. H., aged eighteen, who was admitted into the Meath Hospital on the 12th of last October. This case presented an example of the highest degree of development to which pure granular trachoma may come. The palpebral conjunctivæ of both lids were thickly studded with the vesicular or "sago grain bodies," which, in consequence of their form and semi-transparency, the German oculists have not inaptly compared to frog-spawn. The swelling of the conjunctiva at its reflected portion was especially remarkable. The cornea presented all the characteristics of an aggravated form of secondary ulcerative keratitis pannosa. At the time at which this report is being made (Dec. 9) the patient exhibits in every respect a most marked improvement, both as regards the conjunctiva and cornea; and no treatment has been resorted to in this case except the application of the lid-compressors from two to four hours daily. These cases, few though they be, are sufficient to show that the treatment by pressure, applied in the manner I have described, can be adopted without discomfort to the patient, and without causing any irritation to a cornea, which is the seat of ulceration and pannus. The general improvement, in both conjunctiva and cornea, appears to proceed with more rapidity than it does under the ordinary method of treatment.

The great advantage which I claim for this treatment over the ordinary methods of scarification, and subsequent application of various caustics, is, that there is nothing in pressure which can tend directly or indirectly to the production of that most unfortunate, but too frequent result, not so much of trachoma as of its usual treatment, namely: entropium with trichiasis. I have little doubt that

this condition is more frequently the result of the use of caustics and the scarifying knife than the affection for which these are so frequently, and in many instances so injudiciously made use of. Certain it is that nothing can tend more to the development of cicatrices in the conjunctiva, and consequent contraction of that membrane and inversion of the lid, than the injudicious use of those ordinary methods of treatment to which we have before alluded.

The treatment by pressure is also quite free from all danger of the occurrence of diphtheretic and other destructive forms of inflammation of the conjunctiva, which not unfrequently supervene after the treatment by inoculation.

With these brief observations on the treatment of granular ophthalmia I shall for the present content myself, and trust, at no distant period, to be able to lay before my professional brethren the results of a larger experience in the treatment of granular lids by pressure.—*Dublin Quart. Jour. Med. Sci., Feb.*, 1866.

Art. II.—*Cases of Injuries of the Larger Joints.* By W. Colles, one of the Surgeons of Steevens' Hospital.

Case 1.—A boy, aged about thirteen, came in contact with a reaping machine, while in motion, and received the following injuries in and about the ankle joint: There were three transverse incised wounds, with intermediate oblique incisions partially connecting them. The first of these, about an inch in length, was situated on the dorsum of the foot; the second was somewhat larger and higher up, and the third about the level of the ankle joint, and exactly representing what would be the anterior incision in Syme's operation—it extended from one malleolus to the other, dividing integuments, tendons, arteries and bones, and opening the ankle joint, into which the fingers could be passed in all directions. The extremity of the fibula was deeply incised; two detached portions of bone from the lower end of the tybia were lying along with the lower flap; these were removed. On admission into Steevens' Hospital there was little or no hæmorrhage; the shock was not as great as might have been expected. Notwithstanding that the foot was flexed to the utmost, I was unable to close this wound; I therefore drew the lips together as well as possible, by means of sticking plaster, without using sutures, and maintained the flexed position by means of an iron splint, which was made in one piece, extending from behind the calf to the sole of the foot; this, along with long straps of plaster from the toes to the upper part of the leg, kept the part perfectly at rest. In three days' time suppuration had commenced; but I did not allow the dressings to be removed for nearly a fortnight, contenting myself with merely correcting the fetor by chlorinated washes, etc.

When the plaster was removed I was gratified to find a broad belt of granulations occupying the site of the extensive wound. The patient was kept at rest for a month, when he was allowed to

go out of bed, but not to put the foot on the ground; in another month he returned home with a useful foot.

In this case the prognosis at first was not very favorable, nor was the prospect of a rapid cure very encouraging; indeed, if we had followed the principles which are laid down for our guidance, we should have at once proceeded to consider the propriety of having recourse to either resection of the joint or amputation. I attribute much of the successful issue to the youth and good constitution of the patient, and to the fact that I did not allow the limb to be disturbed, nor even the dressings to be removed, for a considerable period, although the discharge was profuse and the odor disagreeable. I thereby guarded against the probability of inflammation coming on from disturbing the position of the limb, and also against the admission of the atmospheric air.

Case 2.—Mr. S., aged about thirty, a dissipated man, was admitted into Steevens' Hospital in a state of extreme intoxication, having met with an accident for which he could not account. We found a fracture of both bones of the left leg, close to the ankle; there was a small punctured wound on the outer aspect, which was bleeding freely, so much so that it was the occasion of my being sent for. Although only an hour after the accident, there was distinct emphysema of the leg as far as the knee. In a few days a black spot was observed on the outer malleolus; a slough, about the size of a crown piece, separated, exposing the joint and a portion of the fibula bare and very movable. After a few days healthy granulations sprung up, the piece of bone becoming firmer and more attached.

The case was progressing favorably, the wound being nearly healed, when a phagedenic form of ulceration seized it; it carried everything before it, nor did it cease until it had come within four inches of the knee joint. Various caustics and stimulating applications were tried—even change of air had no effect in arresting its progress; finally I covered the whole surface with brown sugar, when the ulceration ceased. As soon as the ulceration made no further progress I amputated below the knee. The wound was healing well, when a large abscess formed on the outer side of the knee, another on the inner side; the discharge was so profuse that at one time we were considering the expediency of amputating above the knee; however, after a time the discharge began to decrease. Abscesses continued to form along the thigh, causing much debility. Finally all healed up, and he left the hospital, after twelve months' treatment, with a stiff knee.

On superficial observation, we have here only an ordinary case of compound fracture of the bones of the leg, yet there were circumstances which rendered the case peculiar. The hæmorrhage was excessive, yet we could not go search for the bleeding vessel; it was to be feared that pressure would have had the effect of driving the blood into the deeper tissues of the limb. The wound was very small, and must have communicated with the joint; the presence of emphysema, occurring as it did, immediately after the receipt of an injury, indicated some serious mischief. The patient's health was none of the best, owing to his drunken habits, yet we had very little constitutional disturbance when the slough separated and the joint

opened; this latter consideration alone was sufficient to preclude the question of amputation.

When the integuments sloughed to such an extent that there was no other treatment remaining but to amputate as soon as the phagedenic action had ceased. The application of brown sugar stopped it completely. I had been reading, a few days previously, of its having been used by American surgeons during the late war, when no other dressing could be obtained; they reported so favorably that I made trial of it in this case.

Case 3.—A man, thin, but healthy, aged about thirty-two, was caught in an engine by the right knee. There was a lacerated wound on the inner side of the patella, with considerable swelling about the joint, and, as far as could be ascertained, a fracture of the patella; some serous fluid could be pressed out of the wound; there was considerable ecchymosis of the thigh.

After some days a dark patch was observed on the outer side of the patella; here a slough formed, one inch and a half long by half an inch in breadth; this was raised considerably, and gave the evident sensation of fluid underneath. I divided the slough, and gave exit to a considerable quantity of sero-purulent fluid; as an abscess had formed in the thigh, I opened it also, and let out some healthy pus. There was considerable pain and starting of the limb, especially at night.

In about three weeks the discharge had diminished considerably; but, as the wound did not close, I introduced a probe, and felt a portion of bone bare and loose; on its removal it was ascertained to be a portion of the under surface of the patella partly covered with cartilage. The knee had become stiff and rigid, but I thought I could feel some motion in the joint; I put it across my knee and gave it a forcible wrench, when I felt and heard a tearing and laceration of the tissues in the joint. Of course this gave him great pain, but was not followed by any inflammation. He would not allow anything more to be done to the leg, so he left the hospital a few days after.

Taking everything in the case into consideration, we must admit that in this case the joint was opened, yet the constitutional disturbance was not great at any time.

Case 4.—A boy, while swimming, struck his knee against some hard body. He was brought to Steevens' Hospital with an incised wound a little above the outer angle of the patella, extending outwards for about two inches; it was treated in the usual way. All went on well for about a fortnight, when, in the centre of the granulations filling up the wound, a yellow spot appeared, resembling a hernia of the synovial membrane; it increased in size, and became elevated; it ultimately broke, and gave exit to a quantity of serous fluid resembling synovia. Acute inflammation of the joint followed, as characterized by swelling, redness and pain. I at once put him under the influence of mercury. An abscess formed of considerable size on the inner side of the joint, and extending down over the tibia; I did not interfere with it locally, but allowed it to burst; it emptied itself and closed. Other abscesses formed behind, and again in front of the femur; eventually the pain subsided. The

joint is now stiff; the periosteum all round is thickened; the patient is gaining strength and appetite; he is most anxious to get up.

In this case the wound at first did not apparently reach the joint, yet it implicated it subsequently, without any evident cause, and by a process not easily explained. We had all the symptoms of acute inflammation of the joint, terminating in the formation of a large abscess; yet matters did not go to that extent that we find in similar cases. I attribute this very much to the rest, and beneficial effects of the mercury, which, whatever theoretical detractors may say, has a great influence in counteracting inflammatory action.

We may perceive that the reparatory process may go on in a joint though it be filled with purulent matter, and that anchylosis may occur without the cartilage being expelled by the profuse suppuration, as we find in disease of the same joint. The process by which the joint came to be secondarily opened is curious, and not explicable by any surgical process that I know of. In this case, also, the necessity of an operation was imminent.

Case 5.—A boy, aged about fourteen, received a contusion on the inner side of the left knee, from the wheel of a cart. He was admitted to Steevens' Hospital. Gradually a portion of the integuments in the neighborhood assumed a dark color, a slough formed the size of half a crown, the line of demarcation showed itself, and sank deeper. He had no bad constitutional symptom up to this time, viz., about a fortnight after the receipt of the injury, when suddenly, at night, he was seized with violent pain in the joint, accompanied by great constitutional disturbance; the knee became greatly swollen, and red, the tumefaction extending up the inner side of the thigh, which soon assumed a reddish blush, gradually darkening in color; on pressure at the knee a watery fluid, mixed with bubbles of air or gas, escaped; the fever continued to increase in intensity, he became delirious, and died in a few days.

On admission, this boy's case seemed deserving of little attention; yet when the separation of the dead from the living parts reached the joint, such local and constitutional disturbance was set up that the question of surgical interference was precluded altogether; in fact, to have given this patient a chance, the limb should have been removed on his admission, an operation which the surgeon would not have thought of proposing or the patient of submitting to.

In these injuries we can seldom expect a speedy and safe issue; we may perceive that there are different periods at which danger may be apprehended, and that they do not depend on the amount of injury. We may have reaction set in and inflammation run high in twenty-four or forty-eight hours after the receipt of the injury; this we may denominate the *primary period* of danger. At the end of the second or third week the separation of a slough, or some other unexpected cause, may give rise to a bad form of inflammation of the joint; we may denominate this as the *secondary period* of danger. These evil consequences may, I think, be attributed to the presence of air in the joint, and although many surgeons deny that this can set up inflammation, and even record cases where its presence has not been followed ay any bad symptom, still, when we consider that every part of the body is covered with cuticle, and that if we

remove that covering or expose a new surface, inflammation is set up, and a new covering is formed resembling the former cuticle, we may fairly reason that the presence of air in a joint is likely to be followed by inflammation. Even when the viscera are expesed, a covering of cuticle is thrown over them, as in the case recorded by John Bell. Having escaped these periods of danger, we have the exhausting discharge of pus in quantities, the ulceration and destruction of cartilage, the effusion of lymph, granulations, adhesion and consolidation into bony union, to contend with. During all this time the patient is liable to all the various diseased actions attending all injuries and surgical operations. These we may denominate the *tertiary period* of danger.

From the cases here recorded we can scarcely draw any deductions on which to form rules for our guidance in practice; on the contrary, they show us that the rules in vogue at present are liable to many and great exceptions; they compel us to go back and take up each case as a separate consideration, and to recommend a line of treatment which we think most suitable for that particular case This includes the important question of operation.

In injuries of the larger joints the surgeon has often little difficulty in deciding on the line of practice to be adopted and the dangers to be dreaded. Many cases thus die of the constitutional effect of the injury a few hours after its receipt; we may have cases in which the surgeon can see at a glance that it is at once necessary to remove the part by resection or amputation. On the other hand, there are many cases which are sources of much anxiety, as to the consideration of which line of practice he should adopt. For the solution of this momentous question he must rely on his experience—both on what he has seen and read, with the circumstances in the patient's case. If he determine to save the limb, he must look forward to long suffering, great exhaustion, and at best a termination in a stiff joint, during which at any time an attack of inflammation may supervene and destroy the patient, without being able to have recourse to any operation; or, if we must resort to operation, it must be under circumstances much less favorable than at the outset. But if the operation be proposed at the first, he may hope for recovery in a few weeks.

Having decided on the necessity of an operation, another question arises; what will it be—resection of the joint or amputation? The records of civil practice do not offer us many cases from which to judge of the probable success of resection, but we must not forget that it in general is a much more severe tax on the constitution than amputation. In military practice, where the injury is so greatly complicated, though in smaller joints, resection may succeed; yet in the larger joints we find the operations, resection and amputation, all have such a tendency to a fatal termination that it is difficult to form any opinion from the statistics at our disposal.

One thing we learn, that the usual manner of evading the difficulty by proposing to wait, and be guided by symptoms as they arise, is not to be considered always as safe and expedient. If we defer operating on the receipt of the injury, we may never again have a chance of affording even such partial relief; the attack may

be so sudden and severe as to preclude the possibility of an operation, as occurred in the last case.

Here I may allude to the weakness of some surgeons, who, in cases similar to these, say they will explain everything to the patient, and let him decide as to the expediency of an operation. This is an abandonment of the duties imposed on him, and an unworthy effort to ease his conscience by throwing the responsibility on the shoulders of a patient who is perfectly unacquainted with surgery, and at the time incapable of forming a correct judgment. The surgeon cannot always say decidedly whether or not the operation is absolutely necessary to save the life of the patient; for surgery is not perfect, nor surgeons infallible. He should, however, say, to the best of his judgment, whether or not the operation affords the best chance of recovery. Should he urge this with all the power he is capable of, he has done his duty; if the patient refuse, the surgeon must only adopt that other plan of treatment which to him appears next best; this he may pursue with an easy conscience.—*Dublin Quart. Jour. Med. Sci.*, Feb., 1866.

ART. III.—*Cases of Urinary and Anal Fistulæ, cured with and without Operation:* By ANDREW PAUL, A. B., M. B., L. R. C. S. I.

"CAN cancer be cured without the knife?" was a question asked in the leading journal of this country, some twelve years ago, by a most amiable clergyman and accomplished divine, himself a sufferer. This gentleman had been a patient of the writer, ere this, for inward piles, and got well.

A thunder-storm of professional wrath assailed this would-be doubter of scalpel supremacy. Yet *time*, since then, has modified very much professional opinion as to the almighty influence of the knife in the radical cure of cancer.

Just so may it turn out now, on the question being asked, "Can anal and perinæal fistulæ be cured without the knife." Professional echo will answer "No." Here then, reader, you have so many cases, as *naked facts*, from a dissentient voice.

Case 1.—In 1854, a young gentleman, in a government office, Whitehall, came under treatment, with five fistulous openings in right buttock, and two urinary openings midway between anus and back of the scrotum, the result of urethral stricture, caused, as he said, by strong injections.

A single waxed spring, conveyed by an eyed-probe, was passed along the main pipe of these sinuses, tied in a loose loop, and left there. The string—seton fashion—continued *in* for three weeks. Surgeons in old times found it very hard to keep a seton in nape of the neck, from ulcerating *out;* here the intention obviously is for the string to cut *out* the parts in the rear, healing as the thread advances; and curiously enough, its presence in the main tunnel, aided by water aspersion, percussion and injection, into and against

the surrounding parts—hot, when tender; cold, when not so—not only obliterated the one whereon it was, but the four tributaries as well. The enlargement of the right buttock, which, from long-continued burrowing of matter, had become twice the size of its opposite neighbor, subsided. The urethral discharge, with which the patient was literally flooded, ceased by catheterism of water percussion, and aspersion along the floor of the urethra, the stricture gave way, and, in time, the urinary fistulæ also dried up. Anal cold water injections materially helped in altering the diseased structures around. What one of us who would not rinse out his mouth after teeth-cleaning? so, likewise, the bowel, for health and cleanliness.

Case 2.—A gentleman, aged 30, called in the autum of 1855, with urgent symptoms of retention, consequent upon stricture, in a state of spasm, the result of excessive drinking the previous night. Three years before had been treated by caustic injections for urethral discharge, that had stuck to him for six months. He begged to have an instrument passed, but was put off with the assurance of a more speedy and less painful method of immediate relief. He was seated over a shower of hot poppy-head water, from douche-jet No. 1, for about twenty minutes, when, to his amazement, a stream of water flowed from him almost involuntarily. He was desired to continue this daily and nightly for a month. He has since indulged in after-dinner libations with impunity, relying upon the aspersion alone to anticipate or to meet the urgency of an attack; and has laterally been using cold aspersion with an amount of benefit such as has insured to him release from an attack ever since. This case, bearing as it does upon the previous one, is given as a proof of local anæsthesia from warmth.

By adopting this simple course, at the same time applying cold per anum, as by lavement, not only will the impression of this salutary agent be conveyed through this channel—the rectum—to the bladder, but the bowels will be kept thereby in an easy comfortable state. Let any one afflicted with incontinence of urine from catarrh of the bladder, from prostratic disease, or from uric acid or alkaline in excess—above all, from chordee—inject, were it but a wine-glass full of *cold* water, into the bowel, he will be astonished by the effects, from the instantaneous relief experienced through the agency of this powerful sedative.

Case 3.—A gentleman in a city bank, April, 1856, has had gonorrhœa thrice. The last time treated with simulating injections. A fortnight after getting well, felt uneasiness and pain in the perinæum. An abscess formed and was opened by a surgeon, but the urethra was not then explored. The abscess healed up and cicatrized. It opened again the following January, and notwithstanding caustic in substance and astringent lotions, the outlet had not closed up at the time of his call. He said he wished to get well soon, as he was to be married at midsummer. Catheters Nos. 5 and 3 failed. Having used hot water aspersion for twenty minutes, No. 10 catheter passed into the bladder with the greatest ease. On his subsequent visits, the catheter invariably passed, as at first, aided only by the hot water jet. The next step was to close the fistula, and to cure the gleet, which off and on stuck to him from the first. He was enjoined to

use aspersion, if possible, *before* passing water. On two occasions a probe, with a hole and string through its probe-end, and dipped in a weak solution of sulphate of zinc, was passed down the fistula, as far as it would go. The result was that, instead of his shirt being wetted the size of one's hand, the urine stained a surface not larger, at first, than a crown; nor, secondly, than a sixpence; ultimately, he passed water without one drop escaping through the opening.

Case 4.—May, 1864, Mr. W., from Brighton, called. Fistula in left perinæal region, leading towards the anus. Passed an armed probe, which, on reaching the lining membrane, was made to pass through into the gut, and then hooked out, the probe being unthreaded, was withdrawn, and the string tied loose. Fomentations relieved the stiffness that ensued for a few days. Mr. W. was enabled to attend to business, and occasionally to come to town. Refusing to have the string tightened, or exchanged for a new one, the time taken to work out extended over six weeks. Sea water injections were used daily. The case ended in a cure.

Mr. W. had been cut for fistula on the right side, by the late Mr. Lawrence, and had been three weeks in bed.

This case could be traced to no other cause save to regular autumnal diarrhœa, which for years he had been subject to.

Case 5.—Mr. C., aged 52, called in August, 1856; a builder by trade. He never knew what illness was that needed a dose of medicine, therefore averse to taking any.

A solid tumor the size of a marble was felt in the right buttock, with a "core" leading towards the gut, full an inch and a half from the outlet; this was tender to the touch; no evidence at this time of matter having burst into the gut, as there was no pain at or after the closet, nor was there on the stool the slghtest vestige of matter. Anal injections—warm when tender, cold after escape of matter—were the only means used during nine months; healthy action being set up, abscesses ceased to form, the opening closed, and all induration became absorbed.

This gentleman, who was seen twelve months ago, reports nothing amiss now.

Case 6.—In 1864, Mr. ——, mayor of a borough town in one of the midland counties, applied for advice. Fistula underneath the fold of left buttock, leading towards the gut, which it did not penetrate. An abscess had formed nine months before, outlet closing and opening as matter formed and ceased to form in surrounding tissues. In the centre of right buttock was a second opening, leading straightforward to a depth of three inches into the buttock cushion, but unlike the other, not leading towards the gut. His health had been impaired. Scarlatina had entered his family six months ago; had been both mild and malignant in its form. My patient had it in the throat severely; since then, health indifferent; mind depressed; was advised to have both fistulæ laid open; objecting to this, he commenced cold water aspersion, percussion and injection; in the latter the *stream* of water against the anus so relaxed the strictures as to pass in unaided by elbow-pipe, thus creating desire for stool, and to rinse out the rectum as well; this course has been pursued ever since.

For the last six months I have not seen this gentleman, though I have heard of him through the member for his borough, whose wife I have since attended for inward piles.

Case 7.—Mr. M., aged 30; strongly marked scrofulous diathesis; scars in various places, neck and chest; fistula lachrymalis of left eyelid years ago left a prominent scar; three openings in left buttock, two in right; not one leading into the gut; complained of palpitations, headache, sleepless nights, loss of appetite, occasional night-sweats; all tonics making, as he said, his head worse; nothing in the way of medicine was taken. His office-hours were light, not over-confined to the desk; still he had to breathe in an atmosphere which he found prejudicial to health—namely, that of a wholesale tobacconist. The seton healed up four of these sinuses, still fresh collections of matter formed; as a last resource, I said, "to Margate forthwith; live well, and as much on the water and in the sea-air as you can; bathe also." He did so, in three months returning, with all the sinuses dried up; health and strength restored; since 1864 has been two voyages to America and back, as purser in a steam-ship company, wherein the writer procured for him a berth.

Case 8.—In August, 1865, Gunner R. Jury, Royal Artillery, Maidstone, came under treatment. A twelvemonth before he had been in hospital, and in bed at Woolwich six weeks, having been cut three times in the right buttock for complete anal fistulæ. The string took longer than usual to work out. Why? Because of the parts being indurated through the previous operations. On the left side side there was an incomplete fistula running to, as on the other side towards, the rectum. The latter I treated with seton, in the presence of Assistant-Surgeon Boulton, to whose kindness and professional courtesy I feel much indebted. This case has got well, under the care of Surgeon B., to whom, luckily, at the time, a similar case presented, and who introduced a string, with similar results.

Case 9.—Quartermaster Sergeant G. Ripley, at same station, and in the same troop as foregoing, applied to me for fistula on the right side, and inward piles on the left verge of the anus. I passed a seton for the sergeant; duty in the saddle called him on parade next morning; stiff though he was, yet he went through an hour's drill. Was excused from similar duty but one morning all through the treatment. His *faith* in cold water aspersion and percussion was such as that he never omitted to use it both before and after saddle exercise; this has likewise been successful. The inward piles now trouble him but little. The cure of fistula will often cure piles. These cases have been reported on to "headquarters" by the senior surgeon of the depot, as evidences of treatment quite compatible both with the ordinary duties of the soldier, who is not necessitated to forego them, and as not requiring confinement to the wards of a military hospital. The attention of the military authorities has also been directed to the treatment, as the means of saving to this arm of the service many valuable men, who otherwise would be discharged.

Treatment.—1st, let us consider the *principle* on which it rest; 2d, the *process* by which it is accomplished.

The structures in an around the anus are, even in the normal state, but of low vitality, and when diseased are most prone to suppurative inflammation. It is extraordinary the extent of mischief entailed on this locality by neglect or by untimed treatment. Three such cases could be adduced, were it necessary; one, however, is given briefly as a striking instance how mind and body become victimized. In 1838 a gentleman called from Yorkshire; repeated abscesses had formed; tardy, ill-timed openings had been made; suppuration and sloughing from time to time had so destroyed the tissues surrounding the anus that a cricket ball could be buried in the gulf between the tuberosities of the ischia; the anal sphincters had been destroyed, and though all was healed over, yet on the slightest error of stomach or bowels, wind, gelatinous exudation and liquid fæces would escape. His object in calling was to procure some mechanical means of resisting fæculent escape. Though a family man, with ample means, yet so sensitive was he on the score of effluvia, as to live in a separate wing of his mansion, apart from his family, still so personally, so scrupulously clean, that the most *fastidious nose* could detect no smell. A spring bandage and lint pad, with aspersion and injection, so far obviated the nuisance complained of that this patient, on calling a twelvemonth after, assured me everything had succeeded. The pillars of the rectum had assumed the office of sphincters, and that, excepting when relaxed, he had gained complete control over the exudation, and had returned to family society. Before we met he declared he was barely passing through life; "now (on his second visit) I am enjoying it." But to return, a new and *long-continued* action must be set up. Those who fancy the knife must admit that in twenty-four hours after the operation, all irritation sinks below par, requiring caustic in substance, daily and nightly dressings, relays of poultices—in hot weather most offensive—strong astringents, chloride of zinc, Condy's fluid, all combined, caging the patient for weeks—nay, months—within the walls of bed or dressing room; whereas, with string or seton, long-continued healthy action, aided by other means, is kept up, and this at the cost of but trifling inconvenience to the patient in the pursuits of every-day life. Such is the experience of thirty years. Nor can it be said with truth that the string is much in the way during the calls of nature. Even the act of cleansing is productive of good, as the seton is moved and drawn upon so as to allow the escape of matter, should the string cause lodgment. Once the wall of the gut becomes perfect by healthy granulation, no further escape of gas, of fæces, or of the bowel's exudation, can escape into the structures around; hence a stop to suppurative inflammation. In short, after the string has *cleared* the bowel, and the slit has been filled up by granulation, the *bore* of the gut again becoming *patent*, neither gas nor fæces, nor exudations can escape therefrom. The seton enters upon its second stage, namely: to rectify and restore to health the structures *outside* the wall of the gut, which to a certainty it will do the looser it is, the longer, therefore, will it remain in the flesh. If tightened every other day, the seton will work out in ten days, quite too short a time for the object in view, viz., restoration to healthy from unhealthy structural action; the surgeon will be beat and his patient annoyed. For, what happens? The superficial parts bridge

over by too hasty adhesion, the tunnel underneath remains, the surgeon has to break up the adhesions on the surface, some stimulating ointment must be applied, a torpid state of parts sets in, just as after the knife performance, and time is lost. The writer has often noticed that some patients' flesh will *rot* the string much sooner than others. So was it in the gunner's case. The seton had to be replaced thrice; whereas, but lately, in the case of Capt. S. (fistula having followed dysentery in India), the second string, when withdrawn, was found as tough as a trout-line, which the captain, another Isaac Walton, assured me would hold a good-sized fish. In the case of Mr. W., Brighton, the seton was not once changed.

2dly. The process or method of getting the seton in. In all these cases of fistulæ, whether anal or urinary, there is invariably undue crampy action of sphincters, or of the urethral muscles; hence extreme tenderness, often amounting to torture, whether from the finger introduced, or from catheter ever so gently passed, the hot water aspersion, or, as recently, the "ether spray," for five or ten minutes, will allay all spasm; a simple silver probe or fine gum-elastic catheter, tipped with a silver bulb, having an eye drilled in the probe end, is passed along the fistula. On its reaching the gut there, the forefinger of either hand passed into the bowel will encounter the instrument and will hook it out. The eye of the probe is then threaded with an ordinary shoemaker's "waxed-end," to which a bristle has been secured. This bristle helps the surgeon vastly to thread his probe, the waxed-end is drawn through the probe eye, so as to double the string or not, as the surgeon thinks fit; the probe is withdrawn, first back into the gut; secondly out from the fistula. The probe is cut off, and the surgeon ties his loop, tight or slack, with an ordinary reef-knot, cutting off the ends of the waxed string, so as to be out of the way in cleansing.

If the surgeon wants to change his string, all he has to do is to loop on over the knot a second waxed end; the knot will keep the new string from slipping. With a dissecting forceps he draws the circle of the original loop round and round, until the knot, holding on the loop of the new string, clears either the fistulous or the anal outlet; he then cuts the old string, and with the new one makes a new loop. Should the surgeon be summoned to a case without knowing beforehand what is the matter, if he has not got his probe in his pocket, rather than probe a fistula twice, let him ask for a lady's bodkin, which, if silver, supple, and with an eye in its bulb, will answer just as well as Weiss's or Fergusson's probe, three or four strings of whity-brown thread, well waxed, will answer his purpose; thus the surgeon kills two birds with one stone—he probes his fistula, and at the same time he passes his string to cure it. If the anal fistula be incomplete—i. e., not entering the gut—the moment his finger in ano meets with the head of the probe, he can scratch with his nail an opening for the probe to pass in, making the probe a fulcrum for the finger-nail to act on.

Remarks.—Incontinence of fæces—a rinderpest plague-spot to the knife—has not followed in one single instance upon the foregoing method.

That fissure, fistula, both anal an urinary, can be cured without

the knife, has been, as it is to the present hour, amongst bygone and modern surgeons, a *vexata questio*. To this, historical surgery, both periodical and voluminous, amply testifies. The "perineal section" has been a *casus belli* amongst moderns, north, south, east and west, in the British Isles.

Indeed, one doubts whether an individual advocating, or venturing to advocate a peaceful mode of treatment, is or is not an orthodox member of the "war conference." However, the writer trusts that ere the "treaty" be signed, the working of his principle will have a further and a fairer trial. As in military, so in surgical warfare, routine must eventually give way to mishaps. Years may pass ere such may be the result. In meantime, we must be content to escape, if we can, the casualties which "system" entails upon us. Should we, like Shadrach and Co. of old, escape scatheless from the fiery furnace, fortune indeed has smtled upon us.—*Med. Press and Circ. (Dublin), Aug.* 1, 1866.

ART. IV.—*Elephantiasis Arabum treated by ligature to the main artery:* By THOS. BRYANT, F. R. C. S., Asst. Surg. to Guy's Hospital.

THE author having made some general remarks on the disease, related a case of elephas, which occurred in the person of Mary T., aged 25, a native of Carmarthen, the daughter of Welsh parents, who was admitted into Guy's Hospital under his care, October 10th, 1865. She was a single woman, of healthy aspect, and had always enjoyed good health, never having had any illness of much importance. Ten years previously she had scarlet fever, which was unaccompanied by any of its ordinary complications; and it was during her convalescence from this disease that her left leg began to swell, the swelling beginning in the calf and extending upwards towards the knee; it was unattended by pain or any indication of general disease. For two years the enlargement was gradual, when she slept in a damp bed, and after this the disease progressed more rapidly, and extended upwards to the thigh. This increase was still, however, perfectly painless. She was subsequently admitted into the Carmarthen and Swansea Infirmaries, where all kinds of treatment were tried, but without success, the disease gradually progressing. Three years since some small ulcers appeared in a deep sulcus in the calf, from which a quantity of dark fluid-like blood escaped; the ulcers subsequently healed.

On admission the left leg was found to be enormously enlarged from the ankle to the groin. To the hand it felt hard and brawny, the skin and cellular tissue being evidently infiltrated with a fibrinous material. Several deep sulci also existed between the folds of integument in the calf. The skin appeared to be coarse, but it was free from the cuticular induration and ulceration which is so frequently associated with this affection. It was also noted that the foot was perfectly sound. The measurements on admission were as follows: Round the left or diseased calf, 24 in.; round the right 15½ in.; round

the diseased thigh, 28 in.; round the right, 21 in. The temperature of both limbs appeared to be alike. The pulsation in the left iliac artery was clearly to be felt; but the femoral and tibial vessels of the affected limb could not be made out. The patient was kept in bed for three weeks, with the leg well raised on an inclined plane. In the first week the calf had diminished an inch and a half, and the thigh one inch, all œdema having subsided; but after that date no further decrease took place. On the 31st of October the external iliac artery was ligatured, the patient being under the influence of chloroform. The vessel appeared to be perfectly healthy, and of normal size. The whole limb was subsequently swathed in cotton-wool, and raised as before. The subsequent progress of the case was one of uninterrupted success. The limb rapidly became softer and smaller, the calf measuring at the end of the week 19½ in., and the thigh 24 in., being three inches less than it was on the day of operation. At the end of the second week the limb had diminished another inch; and on the fifteenth day the ligature came away from the iliac artery, the limb all this time having been free from pain, and quite warm. By the 30th November the wound had quite healed, and the patient's health was very good. By the 30th December the calf had become reduced to 18½ in.; by January 31st it measured 16⅜ in.; by February 21st it was only 15⅞ in., and on March 15th it measured 15½ in., being but three-quarters of an inch larger than the sound limb. The skin had gradually contracted, and had become natural in its aspect; all brawniness of the limb had also gone. The patient at the present date is walking about with an elastic legging, perfectly sound.

In his remarks the author referred to Dr. Carnochan's cases, which were published in 1856, and stated that it was from their perusal that he had been induced to adopt the practice illustrated by the case he had detailed. He then gave a brief outline of Dr. Carnochan's four cases, in all of which a good result was obtained. He alluded to a case of solid œdema of the foot operated upon in 1858, by Mr. Statham, and gave a brief outline of Mr. Butcher's case, published in 1863. He quoted also an example of Dr. Fayrer, of Calcutta, and of Mr. Alcock, of the North Staffordshire Infirmary. He then passed on to consider the pathology of the affection, with the microscopical appearances of the structure involved. He alluded to the theory that it was a disease of the veins of the part, and referred to the fact, illustrated by his own case, of the foot being free from the albuminoid infiltration as an argument against the "venous" theory. He quoted Dr. Carnochan's opinion, that it was due to a morbid condition and dilatation of the principal arterial trunk of the member affected, and pointed out the fact that this condition was present in only one of the cases related. He then described the pathological condition of a limb the subject of this affection, with its microscopical appearances, and pointed out that it was apparently a disease of the cellular tissue of a part, and that it was essentially due to an infiltration of fibro-plastic elements; the elementary structure of a fibro-plastic tumor and of elephas being identical, excess of nutritive material and of organizable products being present in both. Under such circumstances he asserted that the principle of the operation which had been performed must be

looked upon as rational, and the practice based upon it as scientific; for if the disease of elephas be due to an abnormal effusion of tissue-making elements, due to an excess of nutrition in a limb, the attempt to check its progress by the application of a ligature to its main artery, by which it lives, must be regarded with favor. But whatever the theory of the practice may be, he proved that the practice itself was a good one, for the success of the cases he had brought before the notice of the Society was clear and unequivocal. They tended to show that a new means had been given to the surgeon to cure a loathsome and hitherto incurable affection, and another triumph had been achieved for the science and art of surgery.—*Med. Press and Circ. (Dublin), Sept.* 12, 1866.

ART. V.—*Where and How to Amputate:* By B. FRANK PALMER, LL. D.

[The high state of perfection to which the mechanism of artificial limbs has recently been carried, renders it important for surgeons, in operating, to have reference to the future adaptation of a substitute for the member removed. The following directions from the most successful inventor in this branch of surgical art will therefore posses a peculiar interest to operative surgeons.]

IT is obvious that the artificial joints and tendons can never be made to act by mere volition, yet the well-adjusted substitute may be made to respond to the movement of the living member, and it requires no argument to show that the mechanical limb may be moved by *lever power* as readily as the natural one. The stump may be termed a lever, which, aided by auxiliary appendages attached to the thigh or body, moves the false leg. Upon the length and fitness, then, of the stump depends, in a great measure, the success in locomotion.

The rule of Chopart is no longer admissible. This operation does not admit of so perfect or so durable a substitute, and none of the various modifications of it furnishes so good a stump for locomotion as the mode of Pirogoff, which is found to be the best of all the ankle operations now practised, and commends itself to the attention of the profession.

If removed through the tarsus, and particularly if no more of the bones than the astragalus and calcis remain, the cicatrix is invariably drawn downward by the contraction of the tendo-Achillis, and the patient is rarely, if ever, able to support any considerable portion of his weight upon the heel. The support is necessarily upon a socket *inclosing the leg.* The false foot and ankle are less perfect, the tendo-Achillis does not perform its function, and an adequate artificial tendon is supplied with great difficulty. I am almost weekly appealed to by patients who, having suffered this mutilation, find that *careful treatment, for years,* will not produce a good base of support. The contraction of the gastrocnemii muscles causes such epression of the cicatrized surface that the least attempt at walking

keeps up alceration of the cicatrix, which is often followed by *caries of the bones*, involving the necessity of secoudary amputation.

Rules for Amputation.—The greatest length possible should be saved (except when variations of the rule are demanded), and if the living portion be radically defective in length, or flexibility, art, though it may mitigate the suffering, can never fully supply the deficiency.

Often, in cases which admit of most favorable amputation, a most unwarrantable portion of the leg is removed, and not unfrequently the knee is permitted to remain semi-flexed so long as to become incapable either of full flexion or extension, while in other instances a healthy joint is found fully flexed and permanently *useless* for went of a little care in healing.

First Place of Election.—The first point of election, when a portion of the foot must be removed, is obviously at the metatarso-tarsal joint, as done by Lisfranc, in which case the phalanges can readily be supplied, so as to effect complete restoration.

Second Place of Election.—Pirogoff's amputation at the ankle, after numerous trials, all of which have been most completely successful, is found to possess superior advantages, and must be classed as the second point of election in order, and the first of its *class*.

Dr. Hewson, surgeon to the Pennsylvania Hospital, Philadelphia, has performed the Pirogoff operation with perfect success in *five consecutive cases*. In all of these, bony union between the tibia and the os calcis has been readily established, and the end of the calcaucum has formed the most perfect point of support in every instance.

I have the pleasure to present extracts from the report of Dr. Hewson to the College of Physicians, of Philadelphia, published in the *American Medical Journal*, Philadelphia, July, 1864; viz:

"*Case* 4.—Morris Lammey, aged 12 years, residing in Erie street, was injured on the 10th of August, in attempting to get off a freight train whilst in motion. The wheels of a car passed obliquely over his right foot, crushing it close up to the ankle joint, literally leaving nothing but the heel. He was brought immediately to the Pennsylvania Hospital, where a Pirogoff amputation was performed within four hours after the accident occurred.

"Owing to the extent of the injury on the sole and inside of the foot, the incision had to be made further back on the sole than was done in the other cases, and the portion of the os calcis preserved was consequently less.

"The posterior tibial was preserved intact. Four ligatures in all were applied to bleeding orifices. The edges were united by leaden sutures, and a dry dressing was used with the extending weight. The wound united rapidly, having suppurated very little. The os calcis appeared to be firm to the tibia on the twenty-fourth day.

"He had an artificial limb applied by Dr. Palmer, in the month of February, and is making good progress in its use. He can already run with facility on it.

"Most persons who have undergone an ordinary amputation of the leg can *walk* on an efficient artificial limb with great ease, and

even at a rapid rate, after some practice in its use; but few, if any, can, however, undertake to *run* with such an adjunct.

"Five cases have been operated on by the author of this communication. In all a cure followed rapidly. In two, especially, the result was least to be expected.

"John Nespar, who has been walking on one of Palmer's legs for a year, has never had to use any additional covering than that originally put on his stump. He, too, runs perfectly."

Third Place of Election.—Prof. Syme's operation will (since we have made a limb to meet its requirements) now become the third point of election, but should never be substituted for the Pirogoff when the latter can be well performed. It is only in cases where *caries of the os calcis* forbids the election, that preference should be given to the Syme, since the same amount of integument is essential in both operations. The success in walking is similar to that in a Pirogoff operation.

Fourth Place of Election.—We now arrive at what may be called the *first* place of election of the *leg*, or the lower third, which is usually about ten inches below the inferior edge of the patella, though it is always advisable to amputate high enough to secure a good flap, which is very important, as it prevents unpleasant sensations, such as arise from a slight tension of the thin skin, too often found to be the only covering of a protruding bone.

Fifth Place of Election.—If a stump must necessarily be less than ten inches in length *below the knee*, amputate at the lowest point possible.

Sixth Place of Election.—This is the operation for the application of the leg *on the knee*, and should be so formed as to allow the end of the stump, when flexed, to fall *one inch* back of the thigh, to form a sort of grapple, as it fits the concavity of a socket, by which means the limb may be held securely in its place without any appendages to connect it with the waist or shoulders. The point is *just below the tuberosity of the tibia*, and an artificial joint is applied without exhibiting a protruding stump. This rule will apply in amputation for anchylosis of the knee. Perfect use of the knee joint should always be secured, if possible, even if the stump is too short for use in walking. The end of the stump is so secure from all pressure (in the hollow of this flexible socket) that use does not produce excoriation or inflammation, and I have, in repeated instances, applied my limb, in the Jefferson College, within six weeks after the day of amputation, without any danger of immediate or remote inconvenience to the wearer. Amputation *at any point below the knee* is preferable, in all cases, to any of the operations *through the knee*, and the latter should never become the point of election until the surgeon is compelled to recede from the former. If the knee be diseased or anchylosed, and the *joint fully extended*, or only *partially* flexed, in such a manner as to *prevent supporting the weight of the body on the knee*, then the knee joint or the thigh should become the point of election; otherwise *never*.

Seventh Place of Election.—Various modes of amputation through the knee joint have been tried, and in some instances, where the sixth place of election was inadmissible, with the best results. The

bast cases are those in which the patella has been preserved, and retained in *situ* as the point of support.

Eighth Place of Election.—About ten inches from the perinæum, usually, or at the lower third of the thigh, with an ample flap, well covering the bone. If obliged to operate at a point nearer the trunk, save the *utmost length possible*, as every half inch of the thigh in such cases becomes invaluable.

An ample and well-adjusted flap is, in all cases, highly desirable. The double flap of Liston is admirably suited to my uses.

The weight of the body is supported by an even pressure around the whole leg, near the knee joint, if amputated *below* the knee, and a flexible socket, attached by means of auxiliary side joints, is laced to the thigh, usually, to enable the patient to graduate the pressure as he finds most proper.

If the *thigh* is amputated, the pressure is adjusted to its conical walls *near the body*, but there must be *no direct pressure against the perinæum*, as excoriation would follow. The *end must be entirely free from all pressure*, as well as in case of application below the knee.

Treatment of the Stump.—The joint of the knee and hip should be made perfectly flexible, as soon as cicatrization will admit of movement.

The stump should be tightly bandaged for several weeks previous to the application of the new limb, to compress and solidify the cellular substance and give the stump a conical shape. The joints should be rendered capable of the fullest flexion and extension. This being done, the patient may walk with much facility at the first attempt, maintaining naturalness and precision of step.

The views now presented are such as have been derived from a practice which embraces many thousands of cases, in which no conceivable form of amputation, known among intelligent operators, could escape notice.

In such a paper as this, it is thought best to publish briefly the results of professional observation, rather than to discuss doubtful theories.

We shall make progress *surely*, if we "make haste *slowly*," in the great science of surgery and compensatory art.

Engaged in a practice now much greater than ever before, I shall find occasion soon for a more extended and interesting paper.

B. F. P.

Art. VI.—*A New Method of Treating Cancer:* By W. H. Broadbent, M. D., London. Abstract of a paper read before the British Medical Association.

THE attention of the author was directed to the treatment of cancer under the following circumstances: In 1864 he was consulted by a lady suffering from cancer of the breast. By his advice the breast was removed by Mr. Walter Coulson. The disease returned, and was again removed in August, 1865. In May of the present year a tumor was growing more rapidly than ever near the

cicatrices of the former operations. It was decided that no further removal was advisable; and, unless something could be done, a miserable fate was before the patient. The hypodermic syringe is now in the hands of every physician; and it seemed to the author that by it some fluid might be injected into the tumor which might so far alter its structure and modify its nutrition that its growth might be retarded or arrested. After considering the various substances which presented themselves to his notice, he selected acetic acid, for the following reasons: 1. This acid does not coagulate albumen, and might, therefore, be expected to diffuse itself through the tumor; and the effects would not be localized at the point injected. 2. If it entered the circulation, it could do no harm in any way. 3. Acetic acid rapidly dissolves the walls and modifies the nuclei of cells on the microscopic slide, and might be expected to do this when the cells were *in situ*. 4. It had been applied with advantage to common ulcerations. On May 18th the first injection was practised. The tumor was of about the size of a small egg, and a patch of skin of about the size of a shilling had become adherent to it. The needle was introduced through sound skin an inch or more from the part involved in the disease, and passed to the centre of the mass. About thirty minims of dilute acid (one part acid to one and a half or two of water) were injected. It gave little or no pain. Next morning a bulla containing dark bloody fluid was found to occupy the patch of adherent skin. May 23.—This portion of skin dry, hard and horny; the adjacent part of the tumor not so hard. Again injected. The patient, residing in the country, was not again seen till June 7, when the piece of skin mentioned was found detached from the surrounding sound skin; and a probe could be passed in all directions to a distance of three-quarters of an inch or more between the tumor and the healthy structures. A little discharge issued from the fissure mentioned. Injected on this date, and again on the 9th, the acid used being rather stronger. It gave a little pain, and swelling and tention of the parts around followed. On June 13, and a few days afterwards, there was a free discharge of fluid and solid portions, with relief of the swelling, etc. No fœtor whatever attended this discharge, which afterwards diminished greatly. Seen again on June 26, when, on external examination, the tumor was found to be much smaller, and on passing a probe into the opening it entered a large cavity extending on all sides. Part of the walls seemed free from malignant structure, but at several points a crust of cancerous deposit remained. On attempting to inject, it was found too thin to retain the fluid, which either entered the the tissues and gave great pain, or made its way into the cavity. The cavity was stuffed with lint saturated with dilute acid, and the case left in the care of the family medical attendant, who was to inject as he saw opportunity. July 13.—No impression made on the remaining disease, which had, in the opinion of the medical man, extended somewhat. Carbolic acid was tried for a few days as an application, but discontinued, and the cavity dressed daily with strong acetic acid by the medical attendant, and injections practised daily. This energetic trertment gave much pain, and excited inflammation all round. When again seen by the author on August 4, there had been considerable hæmorrhage, which had been arrested

by free application of tincture of sesquichloride of iron. The result, however, was apparently the entire removal of the remains of malignant disease; and when last seen a healthy granulating surface was left at every point. Three other cases were related by the author. The author further formulated certain conclusions from the experiments detailed, and stated the cases to which, in his opinion, the treatment was not applicable. Guided by his experience, he considered large quantities of dilute acid preferable to stronger acid, and he would not, without great hesitation, attempt the destruction of any tumor which had not involved the skin. His aim had originally been, as stated in the early part of the paper, not necrosis of malignant tumors, but a modification in their nutrition. The theoretical grounds for this hope were, that cancer owed its malignancy to its cellular (to use a nomenclature now almost antiquated) or fœtal structure, and that in ascetic acid we had an agent which might be expected to diffuse itself through the tumor and reach the cells, and, having reached them, to effect changes in their structure, and effect them vitally, while it could scarcely do harm. The results he had brought before the profession at the earliest possible moment. The ultimate value of the treatment he left to be decided by a more extended experience. It was important to use large quantities of dilute acid, and not to have the acid too strong.—*Med. Times and Gaz., Sept.* 1, 1866.

Medical Pathology and Practical Medicine.

Art. VII.—*Quinoidine in Animal Textures:* By H. Bence Jones, A. M., M. D., F. R. S., at the Royal Institution of Great Britain, March 23, 1866.

WHEN I last year brought to your notice the fact that "a single dose of lithium in a few minutes passes, through the circulation, into all the ducts, and into every particle of the body, and even into the parts most distant from the blood circulation, and when I showed you that it remains there for a much longer time than it took to get into the textures (probably for three or four days, varying with the quantity taken), and that then it diminishes, and finally, in six, seven or eight days, the whole quantity is thrown out of the body." I little expected that by prosecuting an investigation into this chemical circulation in the body I should come upon that discovery which forms the title for this evening's discourse.

No imagination could have anticipated that this line of research into the rate of passages of substances into and out of the textures would lead to the supposition that man and all animals possess, in every part of the body, the most characteristic peculiarity of the bark of the cinchona trees of Peru.

After determining the rate of passage of lithia and other mineral matters into and out of the body, Dr. Dupré and I proceeded to endeavor to trace the rate of passage of quinine into and out of the textures of animals.

We chose quinine because of that splendid test which led Professor Stokes to the discovery of the change of refrangibility of light.

Here, for example, are different solutions of quinine of different strengths, and by means of the production of fluorescence in the electric light, you see how we can determine which of these solutions contains the greatest quantity of quinine; and by forming standard solutions it would be easy to measure how much quinine existed in each of these solutions. Moreover, Professor Stokes discovered that when a solution of common salt was added to this quinine solution, the fluorescence entirely disappeared. Though this may be so for sunlight, it does not disappear in this electric light; and, moreover, on adding a solution of sulphate of soda to a solution of chloride of quinine, the fluorescence in great measure returns.

Still further, Professor Stokes showed that one solution of quinine entirely stopped these rays from passing into a second solution of the same substance, so that you might almost tell whether you had a solution of quinine by seeing whether it cut off the fluorescence from a second solution of quinine.

Our first object was to determine the delicacy of this reäction for quinine. We arrived at the following results, when the spark from a Ruhmkorff coil was the source of light :

Sulphate of quinine gave

Slight fluorescence	when	$\frac{1}{360000}$	of a grain	was	present.
Feeble do.	do.	$\frac{1}{330000}$	do.		do.
Distinct do.	do.	$\frac{1}{250000}$	do.		do.

One grain of sulphate of quinine in 1,000,800 parts of water showed the blue fluorescence distinctly in 20 grains of the solution. In another experiment, the same amount of quinine in 1,000,444 parts of water showed fluorescence very distinctly.

Having thus got our test, we proceed to apply it to determine the passage of quinine into and out of the textures of guinea-pigs.

A guinea-pig was given quinine, and for comparison another guinea-pig was killed at the same time, having had no quinine.

Of the pig that had taken quinine, each organ was heated in a water-bath, with very dilute sulphuric acid. This extraction was repeated over and over again. The acid extracts were mixed and filtered after cooling, neutralized with caustic soda, and repeatedly shaken up with their own bulk of ether. The residue left after evaporation of the ether was taken up by dilute sulphuric acid, filtered and tested for fluorescence.

The pig that had taken no quinine had each organ treated in a precisely similar way. To our great disappointment, at first, we found that not only had the pig that had taken quinine a fluorescent substance in the textures, but that an almost exactly similar substance was extracted from the organs of the pig that had taken no quinine. Every texture was examined, and in every one this fluorescent substance occurred.

We then endeavored, in every possible way, to find a means of

separating the natural from the induced fluorescence. And as every method failed, we were compelled to recognize the close similarity of the substance that exists in the textures to quinine itself, we for a time dropped the original inquiry, and proceeded to a more complete investigation of the natural fluorescent substance in animals.

Without any preparation this substance can be shown to exist in the living and in the dead textures. There is one transparent substance which is above all most suited for this inquiry.

Here are some lenses removed from the eyes of bullocks, guinea-pigs, and man. You can see how clear, white, and transparent these substances are; and if I take a bullock's eye, which by gentle pressure has been flattened so that the structure can be distinctly made out, there is plainly no coloring matter. As in quinine, nothing is seen until the blue rays of the electric light fall on the lenses; then look at the splendor of the reäction. Here, with the guinea-pig's lenses, the same is seen; and here, with the flattened bullock's eye. You might be tempted to think that this is a *post mortem* change, a result of decay; but here is a fresh bullock's eye—look at this blaze of bluish-green light; but still more full of suggestion is an experiment with a dilated pupil of a living animal or in man. Let me show you my own eye, for in it you can see the lens shining with this unnatural, because unaccustomed, light, looking to you like an opaque substance, a blue-green cataract, whilst my eye can hardly distinguish anything, in consequence of the bluish haze which confuses my sight.

Life and death, then, have nothing to do with the existence of this substance; here it is present in the living lens; it does not disappear from lenses that have been kept for months in glycerine.

I have already said that this substance not only exists in the lens, but that it can be found everywhere by treating any animal substance, first with dilute acid, then neutralising with alkali, and then extracting with ether: thus we obtain solutions having exactly the same properties you see in the lens. Here, for example, is such an extract from the liver. Here, from the kidney. Here, from the heart. When an acid solution of this substance is treated with ether, no fluorescent substance is obtained. First, as with quinine, the acid must be neutralized before this substance or the quinine can be taken up by the ether.

Having then obtained these solutions, we were able to compare them with solutions of quinine in their actions on the spectrum. And first, the solution of the natural substance begins to fluoresce a little before the solution of quinine; but on carrying it on through the spectrum it ends where quinine ends.

The fluorescent light of the natural substance is a little more greenish than the fluorescent light of quinine.

If a quartz cell containing this fluid is interposed between the source of light and a solution of quinine, no fluorescence takes place in the quinine; and if quinine is interposed between the light and this natural solution, scarcely any fluorescence is observed in it.

When a solution of common salt is added to the naturally fluorescing substance, it is almost entirely destroyed, as happens with quinine.

If the natural solution is boiled with permanganate of potass, it

does not lose its fluorescence, nor does quinine ; but when permanganate with excess of alkali acts upon this substance or upon quinine, the fluorescent substance is entirely oxidised.

Hence this substance, by the mode of its extraction and by its remarkable action on light, is very closely related to quinine ; and this led us to apply the chemical tests for quinine to this natural fluorescent substance, after extraction from the body.

The different tests for alkaloids like quinine, as morphine, strychnine, veratrine, atropine, you may see in the following reactions. First, quinine gives, as you see, a precipitate with iodine in iodide of potassium. Secondly, iodide of mercury in iodide of potassium also precipitate. Thirdly, phosphomolybdic acid also gives a precipitate. Fourthly, bichloride of platinum give a precipitate. Lastly, terchloride of gold causes a precipitate, and this precipitate is soluble in alcohol.

Now each and all these different reactions are obtained with these same reägents acting on the fluorescent substance that is extracted from animals.

So that here again we have chemical proof that this substance is an alkaloid, and that it is closely related to quinine.

We have named it Animal Quinoidine because we have not as yet been able to crystallize it or to obtain enough for an analysis.

Having satisfied ourselves that an alkaline fluorescent substance resembling quinine existed in the different textures, we endeavoured to determine the proportion that was present in different parts. For this purpose standard solutions of quinine of known strength were prepared, and equal amounts of substance were treated in precisely similar ways, and then the fluorescence was compared with the standard solutions of quinine. No very accurate estimations could thus be made, but comparative results could be obtained, and these are represented in the following tables :—

On the amount of fluorescent substance in different parts of guinea-pigs and of man, measured by the number of grains of quinine in 100 *litres* (=176 *pints*) *of water, that gave the same fluorescence.*

	In Guinea-pigs.			In Man.		
Liver	6 to 3	6	2	2	2	2
Lenses	3	2	2	2	—	—
Kidney	3	2	2	2	2	3 to 6
Urine	3	2	2	—	—	—
Bile	3	2	2	—	—	—
Blood	3	2	2	—	—	—
Brain	3	2	2	—	—	—
Nerves	3	2	2	1	1	2
Muscles	3	2	2	1	2	2
Humors of the eye	2	2	2	—	—	—
Cartilages	—	—	—	3	1	—
Spleen	—	—	—	1	1	3
Lungs	—	—	—	1	1	2

What, then, is the meaning of this widely diffused substance in animals which so closely resembles quinine? At present we are far from a perfectly clear answer. It is not thirty years yet since the presence of ammonia in the products of distillation of coal was

considered "curious," because nitrogen was thought to be the characteristic of an animal substance, and absence of nitrogen was considered as the distinctive mark of vegetable creation. Gradually, year by year, each substance that has been thought to be the special property of the vegetable world has been found to occur in animals. Thus sugar, starch, woody fibre, vegetable coloring matter as indigo, albuminous substances, are common to animals and vegetables; and at length we have arrived at the fact that no distinction can truly be drawn between the three kingdoms of nature. In the body, salt and phosphate of lime and phosphate of soda are animal substances as much as fibrin and albumen. Sugar is as much an animal substance as albumen is a vegetable substance, and no separation can be made by chemical analysis between animal, vegetable, and mineral.

The processes which take place in the three different kingdoms are, however, very different. The vegetable generally from carbonic acid, ammonia, and water can synthetically build up acids, neutral hydrocarbons, fats, alkaloids, and albuminous substances; whilst the animal generally from albumen analytically produces alkaloids, fats, neutral hydrocarbons, acids, and ultimately water, ammonia, and carbonic acid.

Thus the following table of synthetically and analytically produced substances common to both kingdoms may even now be formed :—

From Carbonate of Ammonia and Water. *Synthetically formed substances, by the plant or by the chemist.*	From Albumen passing down to Carbonate of Ammonia and Water. *Analytically formed substances.*
Oxalic acid	Albumen
Formic "	Casein
Lactic "	Animal Quinoidine
Acetic "	Indican
Valerianic "	Glycocol
Glycerine	Taurin
Sugar	Leucin
Starch	Urea
Cellulose	Caprylic Acid
Cholesterin	Caproic "
Butyrin	Capric "
Palmatin	Olein
Stearin	Stearin
Olein	Palmatin
Capric acid	Butyrin
Caproic "	Cholesterin
Caprylic "	Cellulose
Urea	Starch
Leucin	Sugar
Taurin	Glycerine
Glycocol	Valerianic acid
Indican	Acetic "
Quinine	Lactic "
Casein	Formic "
Albumen	Oxalic "

From this point of view, then, our so-called animal quinoidine is descended from albumen, and its ultimate progeny are carbonate of

ammonia and water, out of which substances the cinchona tree, under favorable circumstances, is able to build up quinine, $C_{40}H_{24}N_2O_4$.

From the large number of carbon atoms in quinine, it may be regarded as one of the early substances produced in the downward passage of albumen, and from this we shall very probably find the key to the question how quinine acts in the body.

When sulphate of quinine is taken, like the lithium and other substances which I brought before you last year, it rapidly passes from the blood into the textures.

Even in a quarter of an hour, after four grains of sulphate of quinine the fluorescence may rise to 75 grains to 100 litres. It is found in greatest amount in the liver and kidney; rather less in the blood, urine, and muscles; still less in the brain, nerves and bile; and is perhaps even in this time increased in the lens of the eye.

In three hours the maximum effect of the quinine may be reached. It amounts then to from 100 to 200 grains of quinine in 100 litres of water, and it occurs to this amount in the liver, kidney, urine, bile, blood, brain, and muscles. The nerves and aqueous humour showed much less increase, and the lenses showed the least increase of all the textures.

In six hours the amount of fluorescences was rather less than in three hours.

In twenty-four hours it was considerably less than half as much as in three hours.

In forty-eight hours, except in the liver and blood, there was but little more fluorescent substance in the textures than naturally exists there.

And in seventy-two hours the liver showed no trace of increase of fluorescence.

Hence, in fifteen minutes the quinine had passed everywhere. In three hours it was at its maximum, and remained in excess for six hours. In twenty-four hours it was much diminished, and in forty-eight hours scarcely perceptible.

These results were obtained by extracting the natural fluorescent substance and the quinine together from the textures, determining the joint fluorescense by standard solutions, and by comparing the numbers thus obtained with the numbers given when no quinine was taken.

The following table of the fluorescence of the different textures after four grains of quinine had been taken by guinea-pigs was made:

	Experiment 1, ¼ hour.	Experiment 2, ½ hour.	Experiment 3, 1 hour.	Experiment 4, 3 hours.	Experiment 5, 4½ hours.	Experiment 6, 5¼ hours	Experiment 7, 6 hours.	Experiment 8, 8 hours.	Experiment 9, 24 hours.	Experiment 10, 32 hours.	Experiment 11, 48 hours.	Experiment 12, 72 hours.
Liver	75	40	20 to 40	100 to 200	100		100 to 200		50	4	6	6
Lenses	6 to 3	5		3	2		3 to 1		3		3	3
Kidney	75	40	20	100 to 200	100		100		50		3	3
Urine	50	20 to 10	20	100 to 200	100		100	4 to 6	12 to 6	2	3	3
Bile	12	20	5	100 to 200	13		75	5	12		3	3
Blood	50	20	20	100 to 200	12 to 25	20 to 40	100 to 50		12		6	3
Brain	12	10 to 5	5 to 3	100 to 200	6 to 12		25		6			3
Nerves	6	5	least	6	2		6		3		3	3
Muscles	50 to 25	20	5	100 to 200	50 to 100		25		12 to 6		3	3
Humors of the Eye		5		6 to 3	2		3		6		3	least

We have been able also to find some trace of the passage of the quinine even into the lens of the eye of man.

The following table, which we owe to the kindness of Mr. Bowman, who gave us the cataracts, makes this evident :

On the Increase of Fluorescence in Cataracts after Quinine.—

Natural fluorescence of lens				=1·6	grs. of quinine	per 100 litres of water.
1 hour after, 5 grs. quinine;			cataract	=1·6	"	" "
1¼	"	"	"	=1.6	"	" "
2	"	"	"	=1·6	"	" "
2¼	"	"	"	=2·1 to 3·1	"	" "
After many days taking quinine,			"	=6·2 to 3·1	"	" "

The figures represent the number of grains of sulphate of quinine in 100 litres (176 pints) of water, required to give a fluorescence equal to that of the substances extracted.

Thus, then, the quinine goes everywhere; and wherever it goes it meets with the natural fluorescent substance like quinine, which most probably is constantly forming and undergoing oxidation. The incoming quinine causes a temporary excess of quinine in the textures. Probably it causes a stoppage of the fresh formation of quinine from albumen; a temporary arrest of the changes going on; a transfer of action probably to the quinine introduced, so that with large doses deafness and great prostration and almost imperceptible pulse are produced in man, whilst in guinea-pigs death even is caused by the extreme prostration. In small doses, quinine, probably like alcohol, gives an immediate stimulus when the first chemical action takes place; but soon the quinine retards the chemical changes in the nitrogenous substances, just as alcohol, by its secondary action, retards the chemical changes in the hydrocarbons in the different textures.

Possibly the increased resistance to changes in the textures and in the blood produced by excessive doses of quinine or alcohol, is analogous to that state well known to medical men under the very indefinite and probably incorrect name of uræmia.

From these experiments two hopeful prospects of possible discovery arise—1st, as to the explanation of the cause and cure of ague; 2d, as to the treatment of diseases in parts of the body external to the blood-vessels.

1. Assume that a substance like quinine exists, during health, in the textures, can its rapid destruction and removal through the action of marsh miasm give rise to ague? Does quinine cure ague by furnishing a substance which retards the changes which go on in the textures? and in the well-known property of arsenic to preserve organic substances have we also the explanation of its power in curing ague?

2. If the chemical circulation can carry alkaloids even into the non-vascular tissues, is it not reasonable to suppose that medicines pass through the blood and act on the textures; and is it not most probable that they take part in every chemical change that occurs outside the blood-vessels, as well as in the blood itself? Still further, may we not expect that among the multitude of new substances which synthetical chemistry is now constantly forming, some medicines may be discovered which may not only have power to control the excessive chemical changes of the textures in fevers and inflam-

mations, but may be able to remove the products of insufficient chemical action even in those diseases which affect the non-vascular textures, as, for example, in cataract and in gout?

It remains that I should in a very few words tell you what was already known regarding this fluorescent substance, and on the rate of passage of alkaloids into and out of the body, before we began our work.

In 1845, Professor Brücke stated that the lens absorbed the blue rays of light to a very great extent, and that the cornea and aqueous humor did so to a less extent. In 1855, Professor Helmholtz examined for fluorescence the retina of the eye of a man who had been dead for eighteen hours. The first experiment showed that it was very feebly fluorescent. The color of the light dispersed through the retina he found greenish-white.

In 1858, M. Jules Regnauld, using sun-light, found in man and the mammifera, that the cornea fluoresced in a very slight degree. In the sheep, dog, cat, and rabbit, the crystalline lens possessed in the highest degree fluorescent properties. In these animals, and also in many birds, the central part of the lens, preserved by desication at a low temperature, retained this property. The central portion of the crystalline of many aquatic vertebrata and mollusca he found almost entirely without fluorescence. The vitreous humor possesses only a very feeble fluorescence, due to the hyaline membrane. The retina possessed a certain fluorescence which was not at all comparable in intensity to that of the crystalline lens.

In 1859, I. Setschenow, of Moscow, a pupil of Helmholtz, at his request, experimented on the eyes of men and rabbits. The fresh retina showed the same phenomenon as the dead human retina. It diffused a greenish-white light, which, examined by a prism, gives a spectrum in which the red is wanting. The vitreous humor in a thin glass vessel showed only traces of fluorescence. The lens, on the contrary, fluoresced very strongly, the color of the dispersed light being white-blue, exactly like quinine, only the quinine was a little stronger. Examined by a prism, the dispersed light gave a spectrum in which the red was wanting, and in which the blue-tone predominated. The fluorescence begins as in quinine solutions between G and H, and is strongest at the outer edge of the violet rays, and extends into the ultra-violet to the same distance in the case of the lens as in the case of the quinine solution.

When the cornea was cut out, it fluoresced much feebler than the lens; the aqueous humor did not fluoresce at all.

The appearances in the three last media, he says, can be shown with the greatest case, even in the eye of the living man. When the eye is brought into the focus of the ultra-violet rays, immediately the cornea and the lens begin to glimmer with a white-blue light. The cornea in the living eye is much more fluorescent than when dissected out, probably from the loss of transparency, consequent on contraction of the texture, and from evaporation.

Professor Donders has carefully investigated the time in which atropine and Calabar bean act on the iris in man.

A solution of atropine dropped on the cornea in fifteen minutes begins to act, and attains its maximum in from twenty to twenty-five

minutes. In forty-two hours the pupil is rather smaller, and even after thirteen days the pupil was not quite its natural size.

The fluid extracted from the aqueous humor, injected into another eye, caused dilatation of the pupil.

A solution of Calabar bean began to act in from five to ten minutes; attained its maximum in from thirty to forty minutes. At the end of three hours it began to diminish, and disappeared entirely in from two to four days.—*Med. Times and Gaz.*, Aug. 18, 1866.

Art. VIII.—*On Epithelial Cells Conveying Cholera:* By Joseph Bullar, M. D., Physician to the Royal South Hants Infirmary.

THE invaluable researches of Snow and Dr. W. Budd, showing that the contagion of cholera is conveyed in the secretions from the intestines, gives a new interest to the microscopical examination of these secretions, for in them must the morbid poison be found. And, though it was well known that these rice-water secretions contained epithelium, the recent careful examination of these epithelial cells by so practised a microscopical pathologist as Dr. L. Beale renews attention to their importance.

In another contagious disease, epithelial cells are cast off in large quantities, and are believed to convey the contagion of that disease. In scarlatina, the epithelial cells are cast off from the whole surface of the skin; in cholera, from the intestinal mucous membrane; and the question presents itself, Are not these epithelial cells, in cholera as well as in scarlatina, the vehicles of contagion?

The common belief is, that the most contagious period in scarlatina is when the desquamation of the cuticle begins, and that the patient continues to be in a condition to infect others as long as this state of the skin lasts. According to our present pathology, this signifies that the epithelial cells of the skin from one person suffering from scarlatina, when introduced into the body of another who has not had the disease, will produce it, and that epithelial cells can be so introduced by inhaling or swallowing them.

The researches of microscopists, and especially the recent researches of Dr. L. Beale still in progress, show that so abundant is the desquamation from the intestinal mucous membrane of the columnar epithelium in cholera, that (as Dr. Beale observes) the whole of the villi, from the cardia to the ileo-cæcal valve, may be deprived of their outer coating, like the skin after a burn. This columnar epithelium is found in the rice-water stools, and more abundantly (as Dr. Parkes described many years ago) in the intestines themselves after death.

The evidence that these rice-water stools will produce cholera, if they contaminate water which is drank, is so strong as to have obtained general credence. By direct experiments, also, "Lauder Lindsay, Marshall, Thiersch, and Meyer, have succeeded in communicating cholera to dogs and cats, chiefly through the rice-water evacuations of cholera patients" (Aitken).

The analogy of scarlatina, and our present knowledge of cell physiology and pathology, point to the epithelial cells in the rice-water stools as the active agents in conveying cholera.

That the poison of scarlatina was conveyed by the epithelium of the skin, was a practical fact known and acted up to long before the true structure and physiology of cells were understood.

We now know that an epithelial cell consists of a cell, a nucleus, and granules ; that such a cell is the simplest form of gland ; and that cells so organized are the real agents in secretion. Besides secretion, such a cell has the power of producing other cells, and thus is a perfectly fit organ for containing a morbid secretion ; for secreting it, for indefinitely multiplying it, and, from its minuteness and numbers, for conveying it. The whole surface of the body is covered by epithelial cells. The whole interior surfaces are lined with them ; and they are unceasingly desquamating. New cells are incessantly generated beneath the old ones, which are thus pushed to the surface and removed in the air and in the various fluid excretions. In this way, our bodies are always moulting and incessantly renewed. The dry epithelial cells of the skin are got rid of in the air in such multitudes, that they may be caught in numbers in all close rooms where human beings congregate. "Epithelial cells" (writes Dr. Parkes) "are found in all ill-ventilated rooms. They were first detected by Dundas Thomson in the air of a cholera-ward in 1849 and 1854. I have examined the air of various barracks and military hospitals, and have detected large quantities of epithelium from the skin." (*Manual of Hygiene*, p. 70.)

We know that morbid poisons, as variola and the vaccine virus, may, in a dry state, be preserved for months, and, when moistened, regain their active power. Scarlatina seems to prove that its dry epithelial scales, retained in clothes in cupboards for weeks, preserve their vitality, and when received into a living body reproduce the disease. And there are cases of cholera of a similar kind. The last fatal case of cholera in Malta in the epidemic last year occurred some weeks after the disease had wholly ceased. The woman who died of it had secreted the clothes of a cholera patient for some weeks and had then worn them, and was attacked by cholera, which killed her.

The recent experiments of Dr. Bence Jones show how readily and rapidly the whole body is permeated with a single dose of some medicines. He finds quinine in cataracts removed by Mr. Bowman an hour after a small dose of quinine had been swallowed. It is no marvel, then, that every epithelial cell may be permeated with the scarlatina-poison, or any morbid poison affecting the whole system, and be the means, from its structure and powers, of conveying and multiplying the disease.

The poison of cholera is conveyed by the air as well as by water. The fact which struck Dr. Alison is very conclusive. A division of healthy troops going up the Ganges in boats were attacked by cholera as they passed to leeward of a village suffering from cholera without communicating with the shore. And another wing of the same regiment following them suffered in the same way. (Aitken.)

Two instances have been related to me proving the same. Mr. W. B. Shorto was acting surgeon to a passenger steam-ship when cholera

was epidemic at Alexandria last year. The vessel arrived off Alexandria at five in the morning. There was no communication with the shore; but by nine o'clock there were twenty-five cases of choleraic diarrhœa among the crew, who were previously quite free from it. Col. Rigby, who was Her Majesty's Consul at Zanzibar, informed me that, when the cholera was very fatal there, several slave-ships at sea were attacked with it at the same point sixty miles south, when the north-east monsoon was blowing. This has been explained by the dry secretions from the bowels, or cholera-dust, being conveyed by the air. Is not cholera-dust epithelium?

The double vehicle of contagion of cholera, air and water, explains many phenomena. It is well ascertained that, when cholera is epidemic in an ill-drained town, few escape diarrhœa—which has been well called cholerine. As two circumstances, at least, must meet to produce cholera—the seed and the soil—the germ and the nidus—the cholera-poison and the previous contamination of the blood by bad air, bad water, bad food—this general "cholerine" may be owing to the diffusion of the epithelial cells in the air, and the mildness of the majority of cases to the smallness of the dose.

As Nature's operations are simple and uniform, we should expect her to act by the same means in the same class of diseases; and that those contagious diseases in which the skin is affected, and those in which the mucous membranes of the lungs and of the intestines are the diseased tracts, would convey their contagion also by the epithelial cells of skin or of the mucous membranes—that measles, small-pox, erysipelas—in all of which the vital properties of the inflamed skin are highly excited, and consequently the growth of the epithelial cells largely increased—would convey their contagion by the epithelial cells of the skin; whilst influenza, pertusses. catarrh, would be propagated by the epithelial cells of the respiratory tract, and typhoid fever by those of the digestive tract. The analogies between typhoid fever and cholera, the poison of both being conveyed by the secretions from the bowels, have been proved by Dr. W. Budd. Another striking analogy would be the conveyance of the poison in both cases by the epithelial cells of the intestines.*

Thus morbid epithelial cells of the skin would produce contagious skin-diseases; of the lungs, bronchial affections; of the intestines, diseases of the intestinal mucous membrane, like cholera and typhoid fever.

To sum up. It is admitted that the poison of scarlatina is conveyed by the epithelial cells of the skin, which desquamates freely, and that these dry cells retain their active power for some time, and when introduced into the body may propagate the same disease. In cholera, as in scarlatina, a similarly abundant desquamation of epithelial cells takes place, not from the skin, but from the intestines; and as it is by the excreta loaded with these cells from the intestines that the poison of cholera is chiefly conveyed, the inference is fair that, in cholera as in scarlatina, the poison is conveyed by epithelial cells.

* In the loose secretions from the bowels of a patient in advanced typhoid fever, which I examined to-day, there were nucleated cells in abundance, with columnar epithelium. For the sake of science, may I express the hope that Dr. L. Beale will extend his searching examinations to the intestinal secretions in typhoid fever.

I am not unaware of the deficiency of this view in proof sufficient to establish a fact relating to matter; and also of the difficulties in bringing such evidence in vital processes. It is an hypothesis explaining the several facts of contagion, and in accordance with our more advanced knowledge of cell pathology. But Lord Bacon said "Prudens quæstio dimidium scientiæ;" or, as Coleridge rendered it, "the forethoughtful query is the *prior* half of the knowledge sought."—*Brit. Med. Jour., Sept.* 15, 1866.

ART. IX.—*Microscopical Researches on the Cholera:* By LIONEL S. BEALE, M. B., F. R. S., Fellow of the Royal College of Physicians, etc.

I propose to commence a series of observations upon the morbid changes which have occurred in cholera, with the aid of the highest powers and new methods of investigation.

In this inquiry, it seems to me desirable to start from the alimentary canal. Every one who has seen cholera has been struck by the remarkable characters of the matter discharged from the intestinal tube, and those who have made *post mortems* are familiar with the fact that the small intestines almost always contain a considerable quantity of pale, almost colorless gruel, rice, or cream-like matter. This has been proved to consist almost entirely of columnar epithelium, and in very many cases large flakes can be found, consisting of several uninjured epithelial sheaths of the villi. I have often found such sheaths in the stools in previous epidemics, and probably every one who has carefully observed the disease will have inclined towards the opinion that in bad cases it is probable that almost every villus, from the pylorus to the ileo-cæcal valve, has been stripped of its epithelial coating during life.

This alteration in the apparatus concerned in the absorption of all nutrient matters from the intestinal canal, and the changes accompanying it and preceding it, are probably sufficient to account for death by collapse. Most important, therefore, is it to ascertain, if possible, the several phenomena of which this denudation of epithelium is the climax, and the order in which they occur. These important organs, the villi, are, in a very bad case, all, or nearly all, left bare, and a very essential part of what constitutes the absorbing apparatus is completely destroyed. If only a considerable portion of a villus was denuded, reparation might doubtless occur by a new growth from the cells which remained, but if the villus was entirely stripped, it is more probable that it would waste, and its place be at length occupied by a new one, which would grow from its base, than that epithelium would grow anew from its bare surface. It is probable that the extent of this process of denudation determines the severity or mildness of the attack. If the great majority of the villi have suffered, it is scarcely reasonable to consider recovery more probable than it would be after a very extensive burn or scald. We

shall have to inquire what is the proximate cause of the denuding process? Why does the epithelium drop off? What circumstances cause it to become detached? The process may be due to violent contraction of the muscular fibres of the villi and the retraction of the villus within its sheath; but although, no doubt, contraction occurs, it is scarcely probable that the villi would be so generally and so completely stripped as they are in severe cases. It seems more probable that the epithelium may become detached, in consequence of the almost complete cessation of the circulation in the capillaries beneath, but the death of the cells may occur in consequence of their being exposed to the influence of certain matters in the intestine or in the blood, in which case they would simply fall off. These and many more hypotheses will have to be considered in the hope of finding the true explanation of the fact.

It ought not, I think, to be too hastily concluded that this abundant removal of epithelium is an indication of the occurrence of active *elimination* from the intestinal surface. For, in the first place, it must be remembered that the villi are not, in their normal state, organs of *secretion* or *elimination*, but active organs of *absorption*; while, on the other hand, Lieberkuhn's follicles, which open in the intervals between the bases of the villi, are secreting organs. Now these follicles, so far from being denuded, are choked with epithelium. It is possible, however, that there may have been a tendency upon the part of these cells to separate matter from the blood, but it seems improbable that the columnar cells, which form the bulk of the cellular elements of the contents of the small intestine, and which unquestionably come from the villi, should have been engaged in such an office. Secondly, I would remark that the pabulum passes through the columnar cells in a direction *from* its free towards its attached surface, or *from the intestine towards the blood*. If, therefore, it eliminates or separates anything from the blood, the flow must take place through it in a direction the very opposite of that which is constant during its life. Is is not improbable that this should be the case? In short, it seems to me that the evidence in favor of the view that the removal of the epithelium from the villi is an eliminative act is still wanting. By the denudation a raw surface becomes exposed, just as in the case of the cutaneous surface after a burn or scald, except that the villi are completely bared, which is not the case with the skin. No one would argue that the elevation of the superficial layers of the cuticle and the effusion of serum beneath consequent upon a burn resulted from elimination. We are to some extent acquainted with the several steps of the latter process, but we have not as yet learned much concerning the former.

The removal of the columnar epithelium from the villi, and the consequent destruction of the mechanism connected with absorption, are broad facts in cholera which deserve the most minute and careful study. We might well consider how this denudation may be prevented or retarded, and, having taken place, what fluids should be brought into contact with the naked surface—oily fluids, fluids containing salt syrup or glycerine, so as to make them of about the specific gravity of the serum, or ordinary serum itself, which last would probably be most efficacious—or whether it would not be

better, until we know more of the matter, to let the denuded villi remain perfectly quiet, and allow the small intestine to rest, in the hope that the damage may be repaired. But is it not reasonable to hope that a thoroughly minute investigation into the circumstances which probably immediately precede this denudation of epithelium would enable us to form a notion of its nature, and to adopt means which were likely to restrain it? A knowledge of the changes occurring after the denudation and destruction of many villi will probably teach us much concerning the nature of "secondary fever," and enable us to place the patient under conditions most favorable to his recovery. The consideration of the mere fact of there being a raw denuded surface throughout a considerable extent of the alimentary canal suggests the propriety of not introducing anything into the intestines. The question concerning the alteration in the villi is a most interesting one, and it is worth while to spend time in searching for new facts, and in trying new experiments which may help us to answer it. But the subject is a very extensive one, and has many ramifications, each of which must be carefully considered in detail.

Remarkable changes have occurred in the smaller vessels, especially in the capillaries and small veins of the villi and submucous tissue, and these changes can be readily demonstrated. The blood-corpuscles appear to have in great measure been destroyed in the smaller vessels, and in their place are seen clots containing blood-coloring matter, minute granules, and small masses of germinal matter evidently undergoing active multiplication, but the nature of which has yet to be studied. Some of the arteries are contracted, but here and there small clots destitute of blood-corpuscles may be seen at intervals. Drawings of these will be published.

On the other hand, the nerves and the ganglia, so numerous between the muscular and mucous coats of the small intestine, exhibit a natural appearance, so that I should not be able to distinguish a ganglion taken from a cholera victim from one taken from a perfectly healthy person of the same age whose life was destroyed by accident. The nerves and ganglia, and the tissues for a short distance around the smaller vessels, are, in many situations, stained with altered and dissolved blood-coloring matter.—*Med. Times & Gaz., Aug.* 4, 1866.

ART. X.—*Blood Poisoning:* By BENJAMIN TRAVERS, F. R. C. S., Eng.

THE chief difficulty about the use of such a term as poisoned blood lies in the assumption or idea of mechanical admixture, which is not consistent with those tendencies which this fluid exhibits when in contact with any matter, whether fluid or mineral, foreign to the homogeneity of its constituent parts.

The effects of turpentine and certain coloring matters, so soon making their presence known via the kidneys, the sensible evidence of the transpiratory process, as detected in certain stages of advanced urinary disease, are ready illustrations of the uses of the absorbent system, which becomes thus charged directly from the

mucous membranes of the stomach or kidneys, without any direct cognizance or intervention on the side of the blood. Certain salts, albumen, fibrin, easily become incorporated with the fluid contents of the heart and arteries ; but poisons, whether animal or vegetable, if brought into contact in a quantity and with a force sufficiently great to imply admixture, dissolve the blood or arrest its current, but there is no evidence of mixing within the body whilst the heart acts or respiration is maintained. The nervous agent has offered an apparently ready method of explaining the course and action of many deleterious compounds. The intimate and immediate power of appeal, which lies alike, both with the heart and the nerve centres, in circumstances of sudden distress, is universal ; but this conducting agency can only act on texture, not on the fluid contents of the heart and arteries. Lastly, has any reliable authority ever seen pus globules in the circulating blood? Pus, we know, may be stained or smeared with the coloring matter of the blood, *extra vasa*, but many remain entirely sceptical as to the true pyæmic poison, which is not to be wondered at when one reflects upon the elaborate arrangements which are made by the natural surgeon for the production and discharge of matter when or wherever this form of degeneration is about to take place.

There are many occasions in which albumen will be found to be present in the urine, which are marked by the purely functional character of the complaint prevailing in the system at large during the continuance of such a symptom. Mercurial remedies immediately promote the advent of albuminous deposits in the urine in some individuals. Nay, this occurrence is so frequent that some physicians hardly admit the fact to be exceptional at all.

In diseased states of the blood, such as albuminuria, there is a loss of relation and homomogeneity; but we do not find the loss of its albumen supplied by any disposition to admit the presence of other and foreign ingredients in the sense of admixture or new combinations. The objections of blood mixing within the body are both vital and chemical, and such a proposition would appear to be alike unphilosophical and untrue.

Again, take the case of the dog poison. Is it conceivable that the virus actually invades the circulation either before or after the occurrence of symptoms? The unhappy subject of this fatal disorder remains perfectly well until the restlessness and spasm commence. Thenceforward the symptoms are all on the side of the nervous system, which in vain makes its appeal in a secondary sense to the circulation to correct the incessant irritation of the nerve centres. If spasm could be allayed, the symptoms would subside. It is well known that the excision of the wounded part at any period prior to the commencement of the symptoms is efficacious. This was the opinion of Cline, Sir Astley Cooper, Youatt and others, and is still maintained by living authorities. Surely, if such be the fact, the blood cannot be regarded as slowly absorbing a poison during a long period of incubation. On the whole, it is here suggested that no poison, as such, ever becomes incorporated with the blood. The symptoms on these occasions are due to contact alone, not admixture.

The functional nature of the disease, termed cholera, is gathered

from the fact of its sudden and capricious mode of attack, from the aspect of causes which are known to promote its outbreak in localities and amongst individuals not suffering from other diseases at the time.

The state of the atmosphere, the fever, the specific form of the "flux," the symptoms recorded as uniformly fatal, even if the patient survives the period of "flux," finally, the dissolution of the blood itself, are all, in their beginning, vices of function, not of organization.—*Dublin Med. Press and Circular, Sept. 5, 1866.*

ART. XI.—*The Change of Type in Diseases.*

NO apology can be necessary in a mecical journal for ventilating the question as to the existence or non-existence of a change of type in diseases in successive epochs in human history. The question is not merely a hypothetical one, the truth or falsehood of which is a matter of utter indifference to the majority of mankind; but it is one of primary and pressing interest to every household and to every individual, inasmuch as a correct or incorrect judgment in a critical case may lead to the most important results to families and even to nations. Within our own times we have heard of great statesmen, who appeared to sway the destinies of empires, being hurried away from this breathing and living world by what has been considered the injudicious employment of blood-letting, and on the other hand, the British nation still deplores the loss of one still dear to memory, who certainly never was bled at all, but who, if he had been treated by some of our continental medical brethren, would probably have been subjected to that method of depletion.

It is a well known fact that some thirty or forty years ago it was the fashion to treat fevers and inflammations by the abstraction of blood and by other depletory measures, and according to the evidence of the medical practitioners of that period, the plan was attended with success. But since the invasion of cholera, in 1832, and of influenza in 1833, the depletory plan has been discountenanced, and, in very many instances, wholly abandoned; and for this change of treatment two entirely different reasons have been assigned, one being that disease has changed its type at or about the period to which we refer, and the other, that the practitioners before 1832 were utterly wrong in their notions as to the treatment of disease, and that those who practised since that period have been entirely right.

Now, in a case like this, every one must speak and write for himself, and those who, in the face of the epidemics of 1832 and 1833, persisted in bleeding and purging their patients, in spite of all the ill-effects which followed such treatment, must, of course, answer for their misdeeds; but as for ourselves, who happen to recollect the epidemics in question, we have no compunctious visitations on that score, because, as far as our experience goes, the depletory system was promptly abandoned as soon as it was found to be unsuccessful

and inexpedient. That cholera and influenza did not bear bleeding and purging we freely allow, but we assert that this truth was well known to those who practised at that period, and who, in presence of diseases till that time unknown in an epidemic form in Europe, immediately relinquished this course of treatment as soon as it was found to be unsatisfactory. It would have been too much to expect that the practitioners and students at that time should at once have abandoned the plans of treatment recommended in all their text books, and we deem it was a sufficient merit on their parts to examine for themselves the practical efficiency of the system then laid down for their guidance, and to give it up when they found it unsuccessful. Let any one examine the books published on "Medicine" between the years 1822 and 1832, and let him inform us as to the then existing knowledge as to the treatment of Asiatic cholera and epidemic influenza, and we shall be happy to record the facts as a matter of medical history; and we may further ask for any definite account of the nature and symptoms and treatment of epidemic diphtheria before the publication of the New Sydenham Society's volume on that subject, edited by Dr. Semple, in 1859. We do not positively allege that Asiatic cholera, and epidemic influenza, and epidemic diphtheria, are absolutely new diseases in this country. All we assert is, that the British practitioners in general were not acquainted with Asiatic Cholera in England before 1832, with epidemic influenza before 1833, or epidemic diphtheria before 1859. But it may be asked what all this has to do with the theory of change of type in disease? Even admitting that cholera, and epidemic influenza, and epidemic diphtheria, have been only comparatively lately introduced into this country, how does the circumstance prove a change in the type of diseases in general? It is the diseases themselves which have changed, and not their type. This is perfectly true, and yet, on comparing a record of patients in some great hospital for a year, say in 1820, with another similar annual record in 1860, will it not be found that in the former period there was more inflammatory croup, more sthenic pneumonia, phrenitis, congestion of the brain, etc., while in the latter period there was more neuralgia, more influenza and diphtheria, and other diseases known to be of an asthenic character? Although, therefore, it may be true that the diseases themselves are different, yet the predominance of the asthenic diseases over the sthenic ones surely proves that disease in general may be of a different character at one period than at another, or at one locality as compared with another.

With regard to fevers, there can be no doubt that they change their type at different periods, as is well known to those who have attended to the practice of the London Fever Hospital, or other large fever hospitals. The annual reports of such hospitals show a constant fluctuation in the proportion of typhoid or abdominal fever, and of typhus or low fever; and Dr. Murchison shows that in the year 1830 the prevailing fever in England was typhus, and that the inflammatory or relapsing kind of fever, although it had previously been very common, had then become very rare. It is very easy to understand that bleeding, whether judiciously or injudiciously employed, did less harm in the inflammatory than in the typhus fever. Now, we apprehend that those who argue for the existence of a

change of type in diseases do nothing more than assert what the records of fever hospitals abundantly prove, namely: that different kinds of fever prevail at different times, and may require different treatment. If such is proved to be the case with fevers, it is neither incredible nor improbable that other diseases may also undergo a change of type, or what is pretty much the same thing, that a sthenic class of diseases may prevail at one time, and an asthenic one at another.—*Dublin Med. Press and Cir., Sept.* 5, 1866.

ART. XII.—*On Melasma and Allied Affections:* By PETER EADE, M. D., Lond., M. R. C. P., Physician to the Norfolk and Norwich Hospital, etc. (Read June 29th, 1866.)

I AM well aware how valuable is our time to-day, and how few minutes can be allotted to any one communication. I have therefore sought to compress the subject matter of my paper into as short a compass as is possible consistent with intelligibility. The purport of it is, to call attention to the subject of diseased pigmentary discoloration of the skin, and the supposed origin of this in disorder of the great centres of the sympathetic nervous system of the abdomen; and, after recording two cases of such discoloration, to add a few remarks upon some forms of that obscure but intractable disorder, which, for want of a definite knowledge of its nature, we are content to designate from it most striking symptom, and to term general debility; suggesting therefrom analogies to show the possibility of the origin of this and some other diseases in disorder of the same nervous centres.

I think, sir, I may venture to assert that the profession to which we have the honor to belong now thoroughly recognizes the services which Dr. Addison rendered to the cause of medical knowledge, when he discovered and called attention to that remarkable bronzing of the skin and that special train of symptoms which accompanies this, which together are now so generally known by the name of melasma, melanopathia, or Addison's disease. No less are professional thanks due to Dr. Wilks, for the zeal and intelligence with which he has brought his great pathological knowledge to bear upon the subject of fatal disease of the suprarenal capsules—a knowledge which has enabled him to diagnose more accurately than Dr. Addison had done the special lesion of the capsules which produces the disease in question, and thereby to save us from confounding together in future disorders which, though perhaps allied in their character or source, are yet, as he has shown, inherently and essentially distinct.

The value of Dr. Addison's discovery consisted not only in pointing out a new disease and so enlarging the boundaries of our knowledge, at the same time teaching us that a pair of organs whose functions were generally believed to have almost ceased with infantile life, were capable when diseased of producing a definite train of symptoms and of exerting a fatal influence upon the processes of

life; but it consisted also, and perhaps still more, in the fact that our attention at once became thereby fixed upon those great sympathetic nervous plexuses and ganglia which lie in their immediate vicinity, and with which the capsules are so largely and intimately connected; for, from this contiguity, the probability was at once recognized that some other obscure disorders whose nature we were unable to explain, but whose general symptoms were allied to those observed in true Addison's disease, might also be due to a diseased condition of these great abdominal nervous centres, and receive their explanation from a careful study of their morbid states.

It is, I think, not only a curious but an important fact, as bearing upon such a possible connexion, that Dr. Addison should have been led to the discovery of the disease which bears his name, by an examination into the nature of some cases which had occurred in his practice of what he terms "idiopathic general anæmia," and the symptoms of which, omitting the discoloration of the skin, bore a close resemblance to those seen in the cases he has recorded of true suprarenal diseases.

But, although eleven years have elassed since Dr. Addison published his work on diseases of the suprarenal capsules; although the attention of Dr. Wilks, Dr. Habershon, and of many other thoughtful minds, both in this country and abroad, has ever since been actively directed to this class of disease, our knowledge of it is still in its infancy; and, indeed, appears to be limited to the apparent ascertainment by Dr. Wilks, that true Addison's disease with bronzing of the skin is due not to destruction of the capsules from any cause indiscriminately, but only to one particular form of disease attended with the deposit in them of some fibrinoid material allied to the scrofulous; and, further, we can still only vaguely guess that many conditions of obscure asthenia or so-called general debility which, as to their cause and origin, are still quite inexplicable by us, may yet be shown to be due to disease or disorder of the solar plexuses, the semilunar ganglia, or the adjacent suprarenal bodies.

Dr. Addison himself attributed to the suprarenal capsules the function of regulating the formation of the coloring matters of the body; or, at least, he believed that diseases of these bodies caused the production by the skin of an excess of black pigment; but subsequent research has tended to modify this opinion, and competent observers now rather incline to the belief that recorded facts are best explained by regarding such an excessive formation of pigment as due to irritation or disease of the solar ganglion, the great centre of innervation of the assimilative organs. Mr. Erasmus Wilson has expressed himself to this effect; and Dr. Wilks writes that he believes "the solution of the question is to be found in the implication of the vaso-motor nerves;" and, that "the symptoms of Addison's disease are not due to the disease of the structure of the capsules, seeing that these are totally destroyed for months or years before the death of the patient."

I will now read my two cases to you. The first one of extensive bronzing of the skin, and from which the patient recovered, is briefly, as follows:

William B., aged 36, bricklayer, was admitted into the Norfolk and Norwich Hospital, under my care, on April 11, 1863. He stated on

admission that he had always enjoyed good health until twelve month previously, when, after exposure to the weather, he was seized with pains of a rheumatic character, which gradually settled in his back and hips. From the time of his seizure he began to lose flesh and strength, and became partially incapacitated from work. For the last six months he had continued to suffer the original pain of the back and hips, and also from pain in the upper part of the belly, coming on soon after taking food, as well as from a constant sense of gnawing and sinking in this part, and occasionally from active vomiting. He had also suffered from increasing weakness, and latterly from giddiness and dimness of sight on assuming the erect posture.

It was not till five weeks before admission that any discoloration of the skin was observed; but at about this date his friends noticed that his face was getting of a yellowish color, and from that time the dark tinge had gradually increased and spread to other parts of the body, so that for three weeks there had been a dark almost bronzed discoloration of the skin of the face, of the outside of the elbows, of the axillæ, the front of the knees, the scrotum and penis, and of the sacral and ischial regions. These appearances, as well as the general symptoms, continued at the time of his entering the hospital, and in addition a number of small ecchymoses or purpuric-looking spots were observed upon the hamstrings, legs, and a few other parts of the surface.

The deepened color varied from that of a dark bilious or jaundiced tinge to that of the blackened stain produced by walnut-juice, and was quite as marked upon the face as elsewhere. The conjunctivæ were of pearly whiteness; the gums and finger nails were also abnormally white.

The urine tested was free from albumen, and contained many dark crystals of uric acid. He was treated by tincture of steel, with nitric acid, and chlorate of potash, and as much good food as the stomach would bear, and at the end of a month I made the following note. He is greatly better. The sickness and pain of the stomach are gone. A large portion of the dark discoloration has disappearad, the cuticle in some of the darkest portions, as it has peeled off, carrying the pigmentary matter with it. The purpuric spots are gone. He was discharged cured on May 27th, about six weeks after admission, the forehead being the last of the discolored surfaces to recover its natural hue.

The symptoms in my next case, one of pellagra, bear a very close resemblance to those of the one I have just read.

Julia P., aged 65, hawker, was admitted to the hospital on July 8, 1865, complaining greatly of feelings of general debility, with sensations of swimming in the head, giddiness, faintness, and general sinking, dyspnœa and palpitation on any exertion, pains in the right hypochondrium, loins, and sacral region, and lowness of spirits. The face, hands, and wrists were of a deeply browned (or rather of a dark yellowish-brown) color—a condition which at once arrested the eye, and which she said had been present more or less every summer for several years past, but was now worse than usual. She attributed it to exposure to the sun's rays in the prosecution of her business as a hawker.

She was kept in the hospital ward and out of the sun for six weeks, and treated with ammonia and the citrate of iron and strychnia. Improvement commenced at once, continued steadily, and on August 24th she was discharged, relieved of all her feelings of pain and debility, and with the color of the hands and face faded to a very light-brown tint.

With regard to the first case, however rare and exceptional it may be, I do not bring it forward as introducing an original view of the subject; for I am aware that a late French writer, M. Louis Martineau, has quoted some cases of Addison's disease, which he alleges were cured; neither do I absolutely assert that disease of the capsules was present, seeing that the patient happily recovered, and therefore I was unable to verify my diagnosis; but the very close resemblance which the discoloration bore to that which I have seen in fatal cases of Addison's disease, coupled with the accompanying general symptoms, render it highly probable that whatever is the special part of the body diseased in true melasma—whether capsules, ganglia, or plexus—this was the part affected in the present case, and to the disorder of which the discoloration of the skin was due.

In all cases of true suprarenal melasma the condition of general asthenia—especially at an advanced period of the disease—is most marked; the patient's consciousness of want of nervous power often most distressing; and the feeling of sinking and uneasiness at the epigastrium, as well as the vertigo and other head symptoms (which latter are doubtless due to an insufficient supply of blood to the brain in consequence of imperfect sympathetic innervation of the heart and arteries) both constant and urgent. These were all present in my case, and were in fact identical in character with those I have recently had the opportunity of observing in a case of undoubted Addison's disease which I saw with Mr. Allen, of this city.

But the symptoms which I have above described are precisely those which were most marked in the second case of disease attended with discoloration of the skin which I have just read, and to which, as answering in most of its characters to the description given in books of the affection known in the north of Italy, where it chiefly occurs, by the name of pellagra. I have ventured to give this name, and of which I believe it to be an example.

The difference between it and true melasma would seem to consist chiefly in the facts—1, that in pellagra the hyperpigmentation is less dark in color, and is restricted to those parts which have been most exposed to the rays of the sun; and 2, that, while in melasma the discoloration appears to be due to disease originating directly in the pigment-producing centre, in pellagra it is induced by *indirect* overstimulation of this central organ through an exciting cause—viz., the burning rays of the sun, applied to the exposed parts of the skin; but in both these diseases the main outline of the general symptoms is the same, and in both the termination is (usually) ultimately fatal.

Again, these very symptoms of asthenia are those which appear to have especially struck Dr. Addison as characteristic of the disorder which he has described in his work on suprarenal disease under the title of *Idiopathic Anæmia*, and the contemplation of which, as I

have said, appears to have led him on to the discovery of the true meaning of the group of symptoms constituting the disease to which he has given his name. They are also marked and characteristic features of the complaints of a class of patients not infrequently met with in the medical wards of our hospitals as well as elsewhere (for I doubt not the experience of most of those present can furnish examples of the disorders I allude to),—a class who, without any definite discoverable disease, are very difficult to cure, and whose ailments often altogether baffle our efforts even to relieve, and who for this reason are often considered, I believe wrongfully, to be hypocrites or malingerers. The patients to whom I allude are generally pale; always feeble and flabby; often depressed in spirits; unequal to much exertion of body or mind; quickly, after effort, breathless or palpitating; rarely suffering much pain, but always complaining of uneasy sensations referred to the epigastrium or its neighborhood. These sensations are often merely a constant and depressing sense of sinking or uneasiness at this part; but they may amount to a feeling of quivering or "flickering," or even of positive discomfort or worry, such as is sometimes compared to that of some animal biting or gnawing at them here. These patients have also often a depressed, anxious, I might almost say, a specific physiognomy.

To this group of symptoms, for want of a better name, it is usnal to apply the term *general* or sometims *nervous debility;* but to some of the cases of this affection which I have recorded in my hospital case-books, I have ventured to append the title "Asthenia Sympathetica"; and the appellation is one which, I believe, very accurately expresses both the localization and the principal features of the disorder.

The physiognomic aspect of the disease I have said is peculiar. To my mind, it is identical with that seen in some stages of melasma, of diabetes insipidus, and of some forms of Bright's disease,—in all of which we may assume asthenia or exhaustion of the great sympathetic abdominal ganglia.

I think, further, I have observed that patients of a peculiar whitish color—*i. e.*, of pale complexions, and with a tendency to light hair, or hair which if originally dark has become gray or even quite white,—in fact, in whom there would appear to be a present deficiency of pigment—are more liable to this class of disorder than others; and I have even several times actually diagnosed its existence from this condition in patients admitted for the first time to the out-patients' room, without asking them a single question.

The peculiar pallor also of patients suffering from Bright's disease is proverbial. It is usually attributed to the secondary effects of the disease upon the blood; but I would make the suggestion whether some at least of this peculiar whiteness or loss of color may not be due to some more direct affection of the pigment-forming organs, seeing that it is present more or less in some of the other disorders I have been alluding to; and again, if so, I may perhaps be allowed to theorize one step further, and to suggest the possibility (in our present utter ignoranae of its cause) that ordinary Bright's disease, or albuminoid degeneration of the kidney, may itself be due to some disease located or beginning in the great abdominal ganglionic centres.

Further, if, as Dr. Wilks says, the peculiar deposit in supra-renal disease is a fibrinoid or albuminoid material having a tendency to degenerate into scrofulous matter; and if, as he seems to think, the general symptoms are probably due to implication of the adjacent vaso-motor nerves and centres, I would ask why it may nor be that the disease causing the suprarenal effusion *begins* not in the capsules but in the nervous ganglia,—just as I now suggest the possibility of the peculiar effusion or deposit in the renal organs in Bright's disease being due in its commencement to a similar form of nervous disorders?

We might, then, almost venture to carry our speculations a little further, and to assume the existence of a group of affections due to disease of the same central nervous ganglia, which might be classed in this way:

A. Functional disorders produced by affections of the abdominal ganglia.	Nervous debility (asthenia sympathetica). Diabetes insipidus (and possibly also diabetes mellitus).
B. Organic disease produced by affections of these bodies.	Addison's disease. Bright's disease (and possibly lardaceous disease of liver, spleen, etc.)

Having made these suggestions, rash as they probably are, and crude and imperfect as I know them to be, I will conclude by simply recapitulating the points to which to call attention. These are:

1. The probability, as illustrated by my first case, that melasma or bronzing of the skin may not always be necessarily connected with organic and fatally destructive disease of the suprarenal capsules or the adjacent nervous ganglia, or at least that the condition which causes it may be capable of a temporary cure or of an amendment equivalent to this.

2. That other diseases attended with alteration of the secretion of coloring matter—in *plus* or *minus* quantity—may, as Mr. Erasmus Wilson has suggested, be due to disordered conditions of the great abdominal plexuses.

3. That there is a large group of diseases still very imperfectly understood, but which, though varying in many important particulars, agree in the one great fact that they are all marked by great and peculiar asthenia and other such symptoms as I have mentioned, which seem from their peculiar characters and their great family resemblance to be all fairly referable to disordered states of the same physical organ or system, and that this is the sympathetic system of nerves, and especially its great central abdominal ganglia.—*Brit. Med. Jour.*, Sept. 22, 1866.

Art. XIII.—*Cure for Epilepsy.*

THE following is the complex treatment of Dr. Schreyer, of Hamburg: Independently of a strict diet, the Doctor prescribes each day a tepid bath of 28°, Réaumer. The patient is made to

remain in this bath half an hour, after which time he is taken out, and at a height of from 4 to 6 feet, first one, then two, and three buckets of cold water are poured on his back and the nape of his neck. The whole is ended by rough and repeated frictions. Saline purgatives are given, and he adds daily, in two progressive doses, from 3 to 10 grains of digitalis. Of sixteen patients thus treated, only three experienced a relapse, who by renewing the same remedies were finally cured.

Dr. Schreyer estimates the cure to last on an average six months. At a given time the quantity of digitalis is finally diminished.—*Revue de Thérapeutique Medico-Chirurgicale*, Mar. 15, 1866.

Obstetric Practice.

ART. XIV.—*Laceration of the Uterus.* [Abstract of a paper communicated to the Obstetical Society of London.] By THOMAS RADFORD, M. D.

THE author, after briefly alluding to the views of Hunter, Denman, and Douglass, on this most dangerous complication to labour, related minutely the histories of nineteen cases which had fallen under his notice. Of this number, in eleven the ages registered were from 21 to 40 years, and it was found that the accident occurred more frequently between the ages of 39 and 40. The number of labors which each woman had undergone, varied from the first to the eleventh; and it was shown that laceration of the uterus happened most frequently in women pregnant for the eighth time, and that in those *enciente* for the first time, the accident took place quite as often as it did in any of the other cases which were registered. The duration of the labour, from its commencement to the occurrence of laceration (though in some cases not exceeding three or four hours) was generally from ten to thirty hours. Of the various causes or conditions mentioned as producing laceration, slight contraction at the brim of the pelvis appeared to have been the most frequent. The author considered that when the form of the pelvis was only slightly contracted, the os and cervix uteri partially descended during labor into or a little through the aperture of the pelvis, so that, as the head of the infant was forced down, the uterine tissues became fixed between this body and the pelvic bones. The fixity of this structure actually formed a *point d'appui* from which the uterine fibres during contraction forcibly pulled; and the great probability was that sooner or later the tissue either directly tore, or, being first contused and softened, yielded. As regarded the situation of the laceration, the cervix uteri was the part most frequently affected, and sometimes with it the body of the organ was

also implicated. In eleven cases the laceration was longitudinal, in three transverse, in three oblique, and in one circular. Of the nineteen cases, three recoveries took place, or nearly sixteen or seventeen per cent. Dr. Radford, in his concluding remarks, observed that when we contemplated the frequent fatality of laceration of the womb, we were led to inquire whether there were no symptoms which showed themselves as universal precursors of this dreadful catastrophe; and if there were, were we possessed of the means of prevention. In all the cases he now brought before the Society, there could not be found any with premonitory symptoms which of themselves would warrant any operative measures being taken, in order to avert the impending danger. Nevertheless, he thought we should carefully consider all the contingent circumstances of protracted labors, and especially of those which were prolonged by mechanical impediments; and whether they were produced by relative disproportion of the capacity of the pelvis to the size of the fœtal head; if so, we should adopt measures of timely delivery.

Dr. Graily Hewitt acknowledged the great value of Dr. Radford's paper, but could not agree in the antiphlogistic treatment mentioned by the author. He (Dr. Hewitt) concurred in the opinion that there was an absence of uniformity of symptoms in these cases; and strongly urged the necessity for early artificial aid in some cases of protracted labor. He related a case of concealed hæmorrhage, in which the symptoms were closely allied to those observed in ruptured uterus.

Dr. Playfair could not approve of the treatment which had been adopted in those cases where the fœtus had escaped into the peritoneal cavity. He thought a much better line of treatment would be to perform gastrotomy. He knew of twelve cases in which this operation had been performed, and in some with satisfactory results.

Dr. Braxton Hicks said that, with respect to the symptoms of rupture, it was generally asserted that recession of the head was a constant symptom, but that he had never seen a case where this had taken place. He believed there were many more cases of ruptured uteri than we were cognizant of. Dr. Hicks believed that one of the greatest safeguards against rupture was the use of chloroform.

Dr. Eastlake observed that, in the diagnosis of rupture of the uterus, some data were furnished by auscultation, the fœtal heart-sounds becoming inaudible after the rupture. This point Dr. McClintock strongly insisted upon; as also that in these cases there is very little hæmorrhage.

The President regretted that, through indisposition, Dr. Radford was unable to be present. He considered that the first great cause of rupture was protracted labor, and the object to be had in view was to remove the obstruction as speedily as possible. A second cause was rigidity of the os uteri, and he agreed with the author as to the necessity of incising the os. A third and a fourth cause existed in the obliquity of the uterus, which caused it to become jammed in the pelvis; also, when there was a dead fœtus *in utero* there was a want of the resiliency which a live child possessed, and the action of the uterus rather tended to squash than to expel it. He also mentioned disease of the uterine tissue as another cause lead-

ing to rupture. He thought that softening of the tissue might depend upon degeneration, either before labor, or during labor, by the pressure of the fœtal head against the pelvis. With respect to gastrotomy, he would say that Dr. Radford had urged the operation, but that it had been overruled by others. The late President of the Society objected to any operative measures whatever when the fœtus had escaped into the abdominal cavity; and he (Dr. Barnes) had seen a case where it was left, and the woman recovered.

Dr. Brunton observed that the cases which Dr. Radford had collected, were attended by midwives, and he knew that midwives were in the habit of giving very large doses of ergot. He believed that this was one of the great causes of rupture of the uterus; and when it did not cause rupture, the placenta was often retained, owing to the irregular contractions of the uterus produced by that drug.—*British Med. Jour., Aug.* 11, 1866.

ART. XV.—*An Inquiry into the Influence of Pregnancy, the Puerperal State, and Lactation on the Development and Progress of Chronic Disease of the Skin:* By BALMANNO SQUIRE, M. B., F. L. S. (Communicated by WILLIAM JENNER, M. D., F. R. S.)

MR. SQUIRE related several cases of psoriasis (lately under his notice) in which the development and progress of the disease appeared to be influenced in a remarkable manner by pregnancy, the puerperal state, and lactation. From the data afforded by these cases he drew the following conclusions:

1. Lactation is an exciting and sustaining cause of psoriasis.
2. The period occupied by pregnancy and its sequel, the puerperal state, is unfavorable to the manifestation of the disease.

Why the puerperal state should exert the same influence as pregnancy on the eruption, and why the effect of lactation should be of the opposite kind, might not at first appear. The explanation, Mr. Squire thought, was to be found in the fact that the uterus, either when gravid or when undergoing the process of involution, was at its maximum of functional activity; whereas during lactation its functions were more in a state of abeyance than at any other period of its functional life—more so than when menstruation was regularly taking place, and more so certainly than when the organ was either gravid or undergoing involution. He arrived, therefore, at the following proposition: "That, when a woman has exhibited a predisposition to psoriasis, her liability to an eruption of the disease at any time during the catamenial era will be inversely as the functional activity of the uterus at that time. In further support of this view he adduced the details of two more cases of psoriasis, which showed that the development of the disease may be connected with amenorrhœa. Of these examples, the one occurred at the commencement, and the other at the close of the catamenial era. In the former, the

first appearance of the disease coincided with the first molimen menstruationis. In the latter, the sudden and apparently premature arrest of the catamenia was promptly followed by the appearance, for the first time in the patient's life, of an eruption of psoriasis. The cases he had brought forward, it would be observed, were all of them cases of psoriasis. This was owing to his having preferred, in the first instance, following out his inquiry in one channel. He was, however, by no means prepared to say that psoriasis was the only chronic disease of the skin that exhibited the peculiarities he had described, but thought it extremely probable that further inquiry would show that other chronic diseases of the skin besides, were similarly influenced by the state of the uterine functions. That pulmonary consumption might be arrested by pregnancy was well known, as well as that its course became unusually rapid shortly after delivery. But similar observations, so far as he knew, had never as yet been made on psoriasis ; and it might be that there were many other instances of chronic disease, whether of the skin or of other organs, in which the control exercised by uterine influence, in determining their commencement, and in modifying their progress, has, in like manner, escaped observation.—*British Med. Jour., Aug.* 11, 1866.

Art. XVI.—*The Use of Galvanic Pessaries.* By Dr. Kidd. [Read before the Dublin Obstetrical Society.]

ON the 26th January, 1853, Professor (now Sir James) Simpson read a short paper, before the Obstetrical Society of Edinburgh, on "Imperfect Development of the Uterus, giving rise to Amenorrhea, &c.," and stated that "he had seen, in some of these instances, the wearing of an intra-uterine galvanic or zinc and copper pessary, gradually increased in size, followed by the best results, and even occasionally by the cure of the amenorrhea."

Having been induced by these observations to make use of galvanic pessaries in several cases, I have thought it well to relate to the society some of the results I have obtained. The first case I used them in was one of amenorrhea from imperfect development of the uterus, the imperfection being due rather to injudicious treatment at the commencement of puberty than to any congenial defect. When menstruation first began the patient of whom I speak got into a cold bath, which checked it immediately, and it did not again appear for more than twelve months. When it next occurred the lady, who was still very young, and not warned as to the care she should take, again checked it; and after this it recurred only at intervals of many months, till, her general health beginning to fail, she was placed under the care of the late Dr. Montgomery. Under the treatment prescribed by Dr. Montgomery, of which horse exercise was an

important part, the general health improved, and menstruation took place every second or third month.

I was consulted in April last. At this time the lady, who was about twenty-five years old, had been nearly two years married, but without any improvement as to the regularity of menstruation. Of a dark complexion, with a good figure, and well-developed bust, she had very excellent general health; and, living at the time in a hunting country, she was in the habit of accompanying her husband once or twice a-week in following the hounds. She told me menstruation seldom occurred oftener than once in two months, and when it did occur lasted only a few hours, and was so scanty in quantity as to scarcely stain her linen. On examination I found the mammæ and external organs of generation well developed; but the uterus was small, the cervix small and conical, the fundus anteverted, the os so small that the smallest catheter could not be introduced. The ovaries I had reason to believe well formed, not only from the general good development, but from the circumstance that one of them lay in the recto-vaginal pouch of the peritoneum, and could be distinctly traced of a natural size, by the finger placed in the vagina.

I confess I had very little hope of being able to induce regular menstruation in such a case. My first step was to dilate the os and explore the uterus, which I did by means of sea-tangle, but not without considerable difficulty, as even the smallest sized tent could not be introduced within it more than a few lines at a time, so that it was necessary to dilate it, bit by bit, introducing a small tent one day as far as it would go, and putting a sponge in the vagina to keep it from falling out; then passing another tent further the next day, till at the end of a week I got the whole canal of the cervix opened, and was able to introduce a sound, and explore the cavity. I was glad to find that though the whole uterus was small in size, the cavity was not much under the normal length.

I now kept the canal open by the frequent use of the sound, and had recourse to the usual treatment for amenorrhea. Among other things, I used warm hip-baths, sinapisms to the groins and mammæ, aloetic purgatives, steel, ergot of rye, and a remedy that has recently been much vaunted in foreign journals—apiol; but the ill success of all may be judged of from the fact that the first and second menstrual periods after the treatment commenced had an interval of eight weeks and one day—that is to say, she came under treatment on 29th April, the period being then some time past, and the first menstruation was on the 30th of May, and the next on the 26th July, being exactly eight weeks and one day between the commencement of one period and that of the other. The discharge in both instances, though more than formerly, was very scanty, and for fully a fortnight before it commenced she suffered from pain and swelling of her breasts and other symptoms of the menstrual molimina. I now resolved to use the galvanic pessary when the next period was nearly due; and in the meantime I continued the steel, and warm hip-baths every night, desiring her to use a syringe while in the bath, so as to throw a stream of warm water into the vagina. The history of the following periods may be shown in a tabular statement:

Menstruation expected.	Pessary introduced.	Mestruation occurred.	—
First attendance, -			
April 29, - -	—	—	
May —, - -	—	30	
July —, - -	—	26	Eight weeks and one day interval.
August 23, - -	15	17	
September 14, -	11	13	Profuse discharge, lasting eight days.
October 11, - -	12	15	Tried without pessary till 1 day past the time menstruation was due.
November 12, -	9	13	Profuse discharge, lasting eight days.
December 11, -	—	12	No pessary introduced.
January 9, - -	—	—	Ditto.

The last menstruation was due on the 9th inst., but has not appeared. When I saw her on that day I found the body of the uterus slightly enlarged, so that I could distinguish it above the pubes, and as there was no sign of the menstrual molimina, I thought it just possible that conception might have taken place after the last period, and I did not introduce the instrument. When I examined the uterus I found the cervix as large as in healthy women, and the os so large that I have no doubt the sound would have passed freely through it, had I been inclined to try it—and this at the expiration of two months after the use of any instrument.

The object in the management of this case in the latter months was to establish the habit, or "the memory of the body," as Hunter calls it—and the question remains to be decided by time, as to whether that memory has been but of short duration, and that menstruation has failed for want of the memory having a refresher applied to it; or whether the organs have entered on still higher functions than merely menstruation.

During a visit to Edinburgh in September last, Sir James Simpson was so kind as to show me several cases in which he was using galvanic pessaries to stimulate the growth of ill-developed uteri; and it was evident, from what I saw, that a very great degree of success had attended on their use.

The case now detailed establishes, I think, that the galvanic pessary will not only stimulate the growth of the uterus, but also that by its use the occurrence of menstruation may be determined at the proper periods.

In two other classes of cases I have tried this method of treatment: First, in cases of deficient involution of the uterus after labor. In

some chronic cases of this kind I have tried it, with the hope that the continuous galvanic current would stimulate the processes by which the uterus is restored to its normal size, but without any beneficial effect.

The second class of cases I have tried it in, is where chronic thickening of the uterine walls remains as the result of a sub-acute inflammatory condition occurring after labor. I have a case of this kind in hospital at present where this state existed eight months after delivery, and where the wearing of one of these pessaries for the last fortnight has greatly reduced the thickening and induration that had existed. The introduction of the pessary in this case caused a menstrual discharge, in the first instance, which had not taken place since her confinement, though she had not been nursing; though I did not remove the instrument because of the discharge, it ceased at the expiration of five days.

That a very considerable chemical and galvanic action goes on while the pessary is in the uterus, is evident from the deposit found on the zinc portion of it when removed. This may be seen in one of the pessaries I exhibit, which I removed from a patient to-day, and present in the state in which I found it.

Another evidence of this action is afforded by a pessary that has been in use for a considarable period, the zinc portion of which is so corroded in one place as to have formed a perforation.

In some cases I have ordered a mixture of vinegar and water to be injected into the vagina when the instrument was in, with a view to increase this action ; and when the instrument is long in use it is advisable to take it out occasionally to clean the surface of the zinc.

The pessary consists of a stem, half of which is of copper and the remainder of zinc. This stem is attached to an oval bulb, and the whole is made of a thin shell for lightness. The stem is placed within the uterus, the bulb remaining in the vagina, with the os uteri resting on it. The stem is made of different sizes or diameters, and about two inches and a quarter in length—that is, a quarter of an inch less than the normal length of the uterus, less it should press injuriously on the fundus. For a case, where the uterus is shorter than usual, at present under my care, I have had the stem shortened in proportion to the length of the uterus, so that it may still be kept from pressing on the fundus.

In introducing the pessary, a uterine sound is placed in an opening left in the bulb for the purpose ; then, the sound being held in the right hand, the left forefinger is placed against the os, and the pessary is run up on the finger, and with it guided into the os. When the uterus lies with its fundus well directed forwards the pessary will remain in without support; but when the uterus is more vertical, a disk pessary must be placed in the vagina to keep the galvanic pessary from falling out.

The patient experiences very little inconvenience from the presence of the instrument, and can pursue her ordinary avocations while wearing it. In some cases it may be worn for months ; but when the object is to establish a regular habit of menstruation it should be introduced a few days before the time the discharge should occur, and be removed as soon as it appears.—*Dublin Quart. Jour. Med. Sci., Feb.*, 1866.

Art. XVII.—*The Perforator.* By D. B. O'Flinn, A. M., M. D.

ONE of the most painful positions in which a surgeon can be placed is where he is reduced to the alternative of destroying one human life to save another, and though it is the rule in British midwifery not to resort to so dreadful an expedient until the fœtus has expired, still we are sometimes compelled to destroy a living child when the mother's life is endangered by exhaustion from protracted labour, consequent on an impacted or ossified or hydrocephalic head, or from a deformed pelvis. Apart from the feeling, that we deliberately kill the child, the lacerations so often inflicted on the mother by the careless use of instruments, or by spiculæ of bone, and the difficulties encountered in effecting delivery after perforation will, I trust, be a sufficient excuse for placing before the profession any point which is calculated to lessen the difficulties of the operation and facilitate our means of delivery.

The instruments usually enumerated as necessary for the operation of craniotomy are the perforator, crotchet, blunt-hook, and craniotomy forceps. The use of the first is easy enough, as we have merely to apply the instrument to the most dependent part of the head, when a little manipulation will cause it to enter the skull; but it is in extracting the fœtus after perforation that all our difficulties commence, and in performing this part of the operation an hour or more has frequently been spent in futile efforts at extraction, while the woman, dispirited and exhausted, has to be plied with stimulants, and the operator himself is often greatly fatigued. When the pressure of the head is very great, it sometimes happens that after the perforator is withdrawn the bones so overlap each other that the opening is again closed, and it becomes difficult to introduce the crotchet, and when introduced, it generally breaks the bones, and may even lacerate the vagina. In such cases the blunt-hook is found equally unmanageable, and the craniotomy forceps so crushes the bones, that the presenting part of the head may be torn into fragments, without being moved from its position. Under those circumstances, when it has been found impossible to deliver with instruments, operators have had recourse to version; and Ramsbotham tells us that on two occasions he destroyed the skull so entirely that both the orbits and the foramen magnum had given away, and he eventually delivered by turning. I had a somewhat similar case myself, which I reported in The Medical Press for May, 1861. Dr. Mackenzie ("Obstetrical Transactions" vol. i.) relates a case in which after using the crotchet for two hours, he delivered by turning, and the woman died of shock; he, however, only recommends it when the head is above the brim, and he says it would be unwarrantable when the head is within the pelvis. I had a case recently requiring craniotomy, in which I adopted a mode of delivery suggested to me by Dr. McEvers of Cork, and which is calculated to obviate all those difficulties.

J. L., in her fourth confinement, when seen by me had been complaining since the previous day. On examination I found the membranes ruptured, the head high above the brim, and inefficient uterine action. I ordered warm drinks, and gave a drachm of tinct. secal. cornut.; after a time the head descended and occupied the

brim, where it became impacted, and I now ascertained the position to be, face to the promontory of the sacrum, and occiput to the symphisis pubis. I applied the forceps, but the blades slipped off. I then altered the position, inclining the face a little to the right ilium, and again applied the instrument, but all my efforts at delivery were unavailing, and it become evident that perforation was inevitable; but knowing the difficulties I would meet in extracting the fœtus, with the head high up, and the uterus not acting, I shrunk from doing the operation until Dr. McEvers' suggestion occurred to me, when I proceeded to deliver in the following way:—Having locked the forceps, I got an assistant to hold them; I then introduced the perforator between the blades, and let out some cerebral matter. Having withdrawn the perforator, I took the forceps from the assistant, and extracted the child with comparative ease, with safety to the mother, and without meeting any of those difficulties, whose harrowing details render the accounts of this operation so repugnant to our feelings of humanity. This mode of delivery by the forceps and perforator (taking care to *lock the forceps before perforating*), may be substituted for delivery with the crotchet, unless in those very rare cases of extremely deformed pelvis, where it would be impossible to introduce a forceps.

Reviewing the foregoing facts, we find that there are three modes of completing delivery after perforation—viz.: (1) the crotchet and blunt-hook; (2) version; (3) the forceps. If we compare those we must, I think, conclude that the last is the safest and the easiest; when compared with the crotchet and blunt-hook, it is found less liable to lose its hold, and less likely to lacerate the soft parts of the mother, it compresses the head into a smaller compass, without loosening any spiculæ of bone, and by affording a firmer purchase enables the operator to deliver in a shorter time, and with less trouble to himself; it is a compressor, an extractor, and an excitor of uterine action. It should therefore be substituted for those instruments in all craniotomy cases where the capacity of the pelvis will admit. Its advantages over version are no less striking, it causes less shock to the mother's system, and is less likely to be followed by hysteritis; it is also more practicable, for it is admissible when the head is within the pelvis, in which case version would be unwarrantable. Having proved the superiority of delivery by the forceps over the modes usually adopted, the point to which I would direct particular attention is to apply the forceps before perforating; if we delay its application until after perforating, when the solidity of the head is diminished, we will not be able to get so good a purchase, and accordingly, I would recommend that the blades be kept carefully adjusted until the perforator is withdrawn. When the head is opened it yields readily to pressure, and becomes elongated, and I may here observe that it is better not to let out much cerebral matter, for if the bones collapse, the instrument will slip off, having no resisting medium to grasp. I have heard it objected to this, that the child may be borne alive,, but admitting the possibility of such an occurrence, it is trifling, when compared with the suffering that women are compelled to endure under the ordinary modes of delivery.

Of all cases of instrumental labor, craniotomy cases are by far the

most fatal; according to Tyler Smith the maternal mortality in such cases is 1 in 5, whereas after the use of the forceps it is less than 1 in 20. According to Sinclair and Johnson, the mortality to mothers in the former cases is 1 in 10.5, and in the latter 1 in 56; and the mortality to mothers in turning is stated to be 1 in 15. By adopting the method suggested in this paper, it appears to me that we may reduce this high rate of mortality at least one-third; and by adding another to the many triumphs of modern midwifery, save parturient women much of the pain and misery attending difficult labor.

There is nothing new under the sun, and probably the proceeding now recommended may have occurred to many accouchers; but as far as I can learn it has never been published, while all the minutiæ of delivery with the erotchet, blunt-book, craniotomy forceps, osteotomist, and version, have been repeated *ad nauseam;* doubtless it may appear too obvious and simple for recital, but its simplicity constitutes its best claim for consideration.—*Dublin Med. Press and Circular, Aug.* 8, 1866.

Art. XVIII.—*The Bromides:* By Edward Long Fox, M. D.

A LETTER from Dr. Drysdale in a late number of the Journal, on the uselessness of the bromides, is calculated somewhat to mislead practitioners who have had little experience of these remedies.

I have used the bromide of ammonium in between forty and fifty cases of whooping-cough; and, although I have only in six cases seen the rapid success which Drs. Harley and Gibb have met with, where the spasmodic affection has ceased within the first week, yet I consider the drug most useful. In some few cases, the bromide has no effect at all. In the majority of instances, it seems to diminish the number and violence of the attacks very rapidly, and, if steadily persisted in, will generally cure the disease in three weeks. In eighty cases of whooping-cough in which I noted the effects of small doses of prussic acid, the average duration was twenty-two days; but the bromide is a safer remedy, especially amongst the poor.

I have tried the bromide of potassium much more extensively in various kinds of convulsions. It is certainly very useful in all forms of infantile convulsion, especially where laryngismus stridulus is the prominent symptom; but, of course, in these cases it is often wise to combine it with cod-liver oil. I cannot say that I think the bromide is a sure remedy in idiopathic epilepsy. Indeed, this complaint should be seen from the commencement, if any remedy is to have a fair trial. But the bromide of potassium checks the frequency and the severity of attacks for a longer period than most of the other reputed remedies; and I believe it does so by diminishing the sensibility of the nerves to external impressions, and so saving the nerve-centre from being constantly excited through eisodic nerves. For the last fourteen months I have had a woman, aged 61,

under my care, who for some months previously had had severe spasmodic attacks, with violent clonic convulsion of all the muscles of the face, arms, and hands, and with intense shaking of the head from side to side, but without any loss of consciousness. The attacks were most distressing to witness, and most exhausting. They occurred many times a day. Under the bromide, they are almost altogether absent; and, when they do occur, they are not nearly so violent. If she leaves it off for three days, they recur as before.

This drug seems also to benefit many obscure forms of headache; but I cannot say that it can be taken for a long time with impunity. After a period which varies much in different individuals, it seems to produce a sensation of debility and *malaise*, and must either be intermitted or combined with cod-liver oil.

Let me say, then, that the bromide of ammonium is a good remedy in whooping-cough; and that the bromide of potassium is sufficiently useful in convulsive diseases to warrant us giving it a far more extended trial before we condemn it as utterly as Dr. Drysdale does. —*Br. Med. Jour., Aug.* 11, 1866.

ART. XIX.—*Condy's Fluid and Carbolic Acid.*

ALL London is now smelling of carbolic acid. Placards recommending disinfectants are affixed to every wall, and in the parish in which we live men are going round the houses of the poor with instructions to put a dose of carbolic acid into every sink and closet, and to put half an ounce of Condy's red fluid into every water receptacle that is made of wood. These measures are taken in the belief that something dangerous lurks in dirty drains which carbolic acid can destroy, and something in suspicious drinking water which Condy's fluid can destroy, leaving the water fit for use. So far as regards cholera, the dangerous matter may be of three kinds: either living matter of some low sort, as held by Dr. Beale, and rendered most highly probable by the Cattle Plague Reports; or an alkaloid, as held by Dr. Richardson; or, lastly, matter in a state of change, according to Liebig's theory, which last hypothesis is not inconsistent with the first.

Condy's fluid is a solution of some permanganate; for our present purpose let us say permanganate of potass. One equivalent of this salt = 158 is calculated to lose one-fourth of its weight of oxygen in presence of oxidisable matter, and in so doing loses the pink transparency of its solution, and forms a brown precipitate. The quantity of oxidisable matter may either be estimated by giving the quantity of oxygen in the decolorised permanganate simply, or on Dr. Letheby's method, by multiplying the amount of oxygen by 8. But we cannot at present go into the process, which will be found well described in the papers above referred to. We want rather to come to one or two practical points of present application.

Let us suppose a water of a bad, or at least a suspicious marshy smell; the addition of one or more drops of "Condy," or of one of

the finer solutions of permanganate, will speedily remove that smell and taste, and make the water fresher and nicer. The quicker the decolorisation, the greater the need of it.

If water so treated, with a slight pink color remaining, be passed through a filter, it comes out perfectly clear and colorless; but without filtering may be used for cooking or making tea and coffee after the brown sediment has settled. Most assuredly any one thirsty enough to drink raw London water just now had better use the permanganate and filter too.

It seems generally agreed that the gases of decomposition are very quickly neutralised by this means, and that organic matter actually decomposing very quickly decolorises the liquid also. But this is not the case with *stable* organic matter. Water colored with Condy so as not to be drinkable with pleasure, yet may contain animalcules in the most lively state. Nay, the amœba, paramœcium, colpods, and other disgusting broods are not in the least affected by water too reddened to be drinkable. The same with regard to minute plants. Give *quantity* enough and *time* enough, and all will be destroyed—first, the stinking gases; next, the decaying organic matter which evolves them; then the microscopic animalcules which feed on it, and which, if not destroyed, by the Condy, would die of starvation; and the plants last.

Time and quantity also are required for the destruction of such a substance as the bitter extract which is diffused into water from quassia; this may be got rid of in twelve hours. The resistance of strychnia is much greater; still a very weak solution may be deprived of all bitter taste by excess of permanganate in twenty-four hours. Matters having organic form and firmness, as starch, etc. if not decomposing, are very slowly acted on.

Animalcules of the kinds indicated may also live in water just containing carbolic acid enough to be smelt and tasted.

The conclusions we would draw from the above remarks are that when we employ the carbolic acid for the disinfection of drains, sinks, etc., it ought to be employed in a state of pretty high concentration and large quantity, so as, above all things, to purify the aperture out of which the dangerous emanations would come. Likewise in the use of Condy's fluid for purifying water-butts, enough should be used, but we should take care also that the butts themselves are cleansed, and pitched or charred inside, for it is a waste of force to use the permanganate to do what might be done by a handful of lighted shavings and a brimstone match.

We may add that at least one traveler of our acquaintance used the permanganate daily for some time with no ill effects whatever.—*Med. Times and Gazette, Aug.* 11, 1866.

Art. XX.—*Guffroy's Cod-Liver Extract.*

THE inventor of this preparation, which is coming into considerable use in London and elsewhere, proceeds on the hypothesis that the active medicinal principles of the cod-liver oil are to be

found in the greatest abundance in the watery constituents or serum of the liver, which he has converted by his process of sugar-coating into an attractive preparation. He claims for his cod-liver dragées that they contain all the beneficial ingredients of full doses of cod-liver oil, and being of very small bulk and perfectly tasteless, they completely obviate the objections which bar the use of that agent in the cases where it is most wanted. We take our information from an explanatory pamphlet issued by the manufacturer, whose statements must stand *quantum valeat*:—

"Many persons, thinking that the nausea caused by the oil, was to be attributed to the coloring and empyreumatic matters contained in the common cod-liver oil of commerce, recommended the use of refined and colorless oils; but the slight advantage which was thus obtained in rendering the oil less repulsive, was by many thought to be more than counterbalanced by a loss of remedial virtue. Others, less happily inspired, proposed to administer the oil in the form of jelly, but that also failed. It was then attempted to render the oil less unpalatable by enclosing it in gelatine capsules, but little was thereby gained, since the gelatine in no way tended to promote the retention of the oil by the stomach. Some, again, have tried to produce an artificial cod-liver oil, by imitating its chemical composition. . . . . It is evident that the composition of a complex organic product like the oil in question, could not be successfully imitated by any artificial compound. But it was equally clear that whatever virtues cod-liver oil possessed over other animal oils and fats, were referrible to the source from which that article was procured—namely, cod liver. . . . . The inventors had noticed that the substance to which the best authorities attributed the medical properties of cod-liver oil—namely, gaduin, propylamine, iodides, bromides, and phosphates, were more soluble in water than in oil; and as cod liver contains a larger proportion of water than oil, they formed the opinion that the watery components of the livers must carry off the greater part of those substances. Chemical analysis, followed by practical observations, fully confirmed these theoretical views. It has been distinctly proved that the oil contains but a very small part of the medicinal elements existing in cod liver, and that the greater portion is left in solution in the waters which have hitherto been thrown away.

"This important discovery once made, it only remained to reduce the watery constituents of the livers to a proper officinal form, in order to possess a medicine containing the active principles of cod liver, separate from the oil. That of extract was adopted as the most suitable. The waters were accordingly evaporated, and were found to yield a product which, on being analyzed by Dr. Garreau, Professor of Chemistry in the University of Lille, proved to have the following important chemical constitution:—

Ichthyoglycine	50.000
Propylamine	2.545
Acetic, lactic, and butyric acids	6.000
Phosphoric acid	2.090
Sulphuric acid	0.200
Chlorine	1.525

Iodine	0.154
Bromine	trace.
Soda	1.170
Potash	0.211
Magnesia	0.366
Lime	0.510
Ammonia	2.862
Extractive matter undetermined, gaduin, &c	10.620
Water and loss	21.747
	100.000

"The extract thus obtained presented, however, two difficulties: in the first place, it was found to be exceedingly delinquescent, and, secondly, it was too concentrated for direct administration. These obstacles were overcome by mixing intimately with the extract about an equal weight of cacao-butter. The resulting compound was a firm and stable mass, of which pills, capable of being sugar-coated, could be made. By these means the preparation assumed the form of sugar-plums or *Dragées*.

"A proper officinal form for administering the new medicine having been found, it was submitted to the Académie Impériale de Médecine of Paris, who, in the month of May, 1861, appointed a committee, composed of Drs. Bouillaud, Poggiale, and Devergie, to examine, experiment, and report upon it.

"At the meeting of the 21st October, 1862, the Academie approved and adopted the report of those gentlemen. It will thus be seen that the deliberations of the committee extendeded over a period of sixteen months—a length of time which afforded ample opportunity for prolonged trials and a well considered decision.

"This report, which is too lengthy to be here given *in extenso*, recognizes the accuracy of the analysis of Dr. Garreau of Lille, and deduces from it a comparison of the proportion of chemical elements contained in the extract, with that found in oil of the best quality. According to this comparison, cod-liver oil contains scarcely 3-1000th of the elements iodine, sulphur, chlorine, and phosphorus, while the extract possesses 98-1000th of the same elements, or their acids, thus showing thirty-three times the amount; and while, from the oil only, about 10-1000th extractive matter can be obtained, cod-liver extract yields 724-1000th, or seventy-four times more.

"'If,' continues the report, 'chemical composition be taken as the measure of the comparative value of cod-liver oil and cod-liver extract, it must be admitted that twenty centigrammes represent nearly forty-five grammes of oil, or more than two tablespoonfuls. . . . The extract obtained from cod livers contains, in a condensed form, all the active therapeutical principles of cod-liver oil. . . . The system under its use acquires more vigor, the appetite gradually returns, the complexion improves, and the muscular strength increases. In short, the administration of the extract, like that of the oil, promotes assimilation, and consequently tends to the improvement of the general health of the patient. The richness of its chemical composition, its efficiency and certainty of action on the economy, the possibility of administering it to the most delicate and

fastidious persons, constitute it a valuable therapeutical agent in all those affections which require the employment of cod-liver oil.'

"Cod-liver extract has likewise been tried in Russia, under the auspices of Dr. Kalenitchenko, Professor or Medicine in the University of Karkow; and has been officially recognized and authorized by the Imperial Medical Council of St. Petersburg."

The course adopted by the patentee of this preparation is such as to merit, *ab initio*, the confidence of the profession. He has not desired or attempted—as others have done—to force the medicine amongst the general public, but has simply submitted it to the profession on its own merits. He expresses a hope that medical men will be induced to give it a fair trial; if they find it meet their expectations, prescribe it regularly; if not, reject it summarily.

With reference to its employment in practice, he says:—

"Possessing, perhaps, in a higher degree than cod-liver oil itself the peculiar remedial properties of that substance, it is well qualified to take its place in certain cases even when the oil can be borne. But irrespectively of its claims in this respect, the full value of which enlarged experience can alone determine, cod-liver extract specially recommends itself in the following circumstances:—

"1—When the oil is rejected by the stomach.

"2—When, although the oil is not actually refused by the stomach, the production of nausea and disgust renders a change of remedies very desirable.

"3—When, without discontinuing the oil, there may be reason for wishing to increase its efficacy.

"4—When the oil, whether agreeing or not with the patient's stomach, has failed to produce beneficial results.

"These objects may, according to circumstances, be attained by prescribing the extract alone, by administering it along with some oily matter less nauseating than cod-liver oil, by alternating its administration with that of the oil, or by giving it at the same time with the oil, and thus, as it were, enriching the latter substance with a superadded dose of those more active principles, in which cod-liver oil is deficient."

We will not be expected to give an authoritative opinion here as to its merits. Theoretically it is simply a question of what the benefit derived may be due to. If it be simply the oil itself, it appears rather inconsistent to prescribe cod-liver instead of many less nauseating oils. If it be the iodine, ichthyoglycine, propylamine, or other correlative ingredients, the inventor has, we think, proved his case.

We are not certain that Mr. Guffroy has been judicious in laboring so energetically to make the medicine pleasant to the taste, for the profession in Great Britain seem to look coldly on the Dragées and Troches of the French Pharmacy. If it is any inducement, we may say that the cod-liver extract, before it has received the coating of sugar, is as unpleasantly fragrant a preparation as could be desired. —*Dublin Med. Press & Cir., Aug.* 1, 1866.

Art. XXI. — *Calabar Bean in the Treatment of Cholera:* By E. D. Mapother, M. D., Surgeon to St. Vincent's Hospital, Dublin, etc., etc.

OF all diseases cholera is that in the treatment of which it is most justifiable to try agents either empirically, or because their physiological effects on man are opposite to those developed in that mysterious disease; for it must be confessed that we have as yet but little power over the disease, and of the scores of remedies proposed not one has ever attained a high or uniform degree of success. This is especially true of the present outbreak in this city, which has been characterized by great virulence, absence of premonitory diarrhœa, and rapid supervention of algide collapse.

A few days ago it occurred to me that the state of collapse indicated a highly excited condition of the vaso-motor nervous system inducing spasm of the muscular tissue of the arteries, and consequent constriction of their calibre. As regards the pulmonary arteries this has been urged by Dr. G. Johnson, and even those whom he has failed to convince as to the eliminative method of treatment, allow that he has nearly proved such a spasmodic condition. When the vaso-mator apparatus of the head is stimulated in animals by galvanization of the superior cervical ganglion, or in a less degree by the administration of strychnia, the blood-vessels contract, and therefore the generation of heat decreases and the secretions are diminished, and owing to increased action of the radiating fibres of the iris the pupil dilates. The first three conditions are well known to be present in cholera collapse, and in many instances I have observed the last named. The paleness and sinking of the eyeballs which occur early in cholera indicate emptiness of the capilleries.

It is generally allowed that fear is a powerful predisposing cause of cholera, and on unimpeachable authority it has been alleged that the terror of the disease has proved fatal without possibility of exposure to its exciting cause. The well-known physiological conditions induced by fear—namely, pallor, by emptiness of the cutaneous capillaries, the erection of hairs, the quivering limbs, the weak voice, the sudden evacuation of fæces and urine, all seem readily explained by spasm of muscular tissue; but, as the impression is clearly received through the mind, this spasm is more probably due to depressed action of the cerebro-spinal system, the then unbalanced ganglionic system coming into excessive action. The well-known condition termed "shock," whether produced by so profound a disease as peritonitis or by an extensive form, is very similar both to the collapse of fear and of cholera; the cerebral functions and the heart's action are not primarily affected, the latter fact being shown by the increased force and rapidity which bleeding will induce. The extremes of life, when the controlling power of the brain is less powerful, are peculiarly susceptible of this form of collapse as well as of functional nervous diseases. In all these instances the cerebral functions are intact, as they are in cholera, until the later stages, when the brain is poisoned by urea.

The changes which the body of the cholera patient undergoes after death also point to the inhibitory power which during life had

been acting; for the blueness of the surface decreases and the temperature of the surfaee rises. The mode of inducing the eondition of the nervous system opposite to that previously alluded to may be now described. When the vaso-motor apparatus is paralysed by removal of the superior cervical ganglion the blood-vessels remarkably dilate, but without stagnation of their contents, for heat increases even to the amount of eleven degrees, and secretions are plentifully poured out; and, as noticed so long ago as 1727 by Pourfour du Petit, the pupil becomes extremely contracted.

If we possess an agent of well-ascertained power in weakening or temporarily paralyzing the vaso-motor influence it is worthy of trial in cholera, and such Calabar bean seems to me.

Dr. T. R. Frazer (whose most admirable monograph will be found in the *Edinburg Medical Journal*, 1863-4), M. Giraldès, and Professor Harley have demonstrated that this drug, (1) paralyzes striped and unstriped muscle, (2) causes dilation of blood-vessels, (3) augments seeretions, espeeially that of the mucous alimentary glands, (4) contracts the pupil, and (5) is physiologically antagonistic to strychnia. I have myself repeated many of Dr. Frazer's experiments with identical results. In large doses it kills by paralyzing the respiratory muscular tissue, but the heart is not primarily affected, that organ continuing to beat regularly even after the death of the animal for several minutes. If the drug acts on the sympathetic system alone its powerful effects are yet intelligible, for injury to the aortic plexus, as in Sir A. Cooper's first attempts to tie the aorta of lower animals, paralysis of the lower extremities followed.

Impressed with the likelihood of Calabar bean acting usefully in cholera, I explained my views to Drs. Hudson and Lyons, who received them with very considerable favor. The latter physician has already treated some cases with this agent, and the former kindly permitted me to administer it to the patients whose eases are detailed below. I have also to tender my thanks to the resident officers of the Meath Hospital, especially Mr. Carter, who attended to the cases with great zeal. I may mention that I was determined to publish the cases, whatever the result—if positively suecessful much saving of life would follow, and, if the contrary, others might be warned from trusting to the same means.

1. Margaret Devine, aged 28, was seized with purging, vomiting, and cramps, about three o'clock, P. M., on the 5th; she was treated with stimulants until ten o'elock on the 6th, when she was admitted into the Meath Hospital; purging and vomiting had ceased, but the cramps in the legs still distressed her. Neither the radial nor brachial arteries gave pulse, but in the eommon carotid it counted 92, and felt extremely feeble; the tongue, face, and extremities were very eold, and the surface was almost of a purple plum color; voice was nearly inaudible; the pupils were fully dilated. Every one anticipated death within a very few hours. The powdered bean was the only preparation then procurable, and of it three grains mixed in two drachms of water were administered every second hour. The only other treatment consisted in the application of external warmth; vomiting did not recur, nor did purging, but during several hours of the night blood was freely discharged from the bowels. The pupils

contracted much after the third dose, and about the same time the coldness and blueness were much decreased. The carotid pulse did not alter in frequency or volume to any considerable extent throughout. At nine, A. M., on the following morning, she described a sensation of a lump in the stomach in terms very similar to those employed by Dr. Frazer, in describing his own symptoms after a full dose of Calabar bean; at ten o'clock the force and frequency of the circulation and respiration declined, and she sank shortly before midday.

The intestinal bleeding probably produced, or at least hastened death; and it may be questioned whether it was due to the very turgid state of the rectal veins, which is usual, or to the action of the drug, which is cathartic.

2. Michael Shelly, aged 50, was seized with purging and vomiting early on the morning of the 6th, in a room from which two of his children had been removed to hospital with severe cholera. I saw him there at eleven o'clock, when he had just passed a rice-water stool and was attacked with cramps in the forearms. There was no coldness or lividity of surface, but the eyeballs were much sunken, and his countenance was terror-stricken. The pupils were small, a condition which his trade, that of a tailor, may have made habitual. The administration of three-grain doses every second hour was commenced at one o'clock, when he arrived at the hospital; but at seven, P. M., a tincture made with five ounces of spirit to four ounces of the bean was procured and given in four-drop doses instead of the powder. The purging and vomiting ceased; he remained warm, suffered no cramps, and the pupils considerably contracted. He complained of a peculiar feeling of weight in the stomach, but nothing else, save very great weakness. He remained in this condition during Friday, but on Saturday morning, at nine o'clock, it was found that the rice-water purging and vomiting had returned, and his skin was sensibly colder. He was depressed extremely by the death of his child, which had just occurred in the next ward. As he had therefore got worse under full doses of the drug, I did not feel justified in continuing it, and small doses of calomel were prescribed, and as no urine was secreted, the loins were cupped twice, two ounces of blood being drawn the second time, and a bran-and-turpentine stupe was applied. At nine on Sunday morning he passed water freely, and may be now said to be rapidly recovering.

3. Patrick Gahan, aged 55, was seen by me at his residence at half-past nine o'clock on Friday morning, 7th. He had had rice-water purging and vomiting; was violently cramped in the legs; his face was pale, the eyeballs much sunken, pupils dilated, his hands and feet cold and bluish, and the radial artery was very thready. On his removal to hospital the tincture was given as in the preceding case, and external warmth was assiduously applied. Two stools were passed during the day, but the other symptoms gradually disappeared, and on Saturday he was almost fit to be discharged.

4. William Crutchfield, aged 15, at about four o'clock on Friday morning was severely purged and vomited, and fainted after one severe fit of purging. He was admitted at half-past twelve with these symptoms and with cramps, but no positive coldness or weakness of pulse.

The tincture was administered in the same way; the purging and vomiting gradually ceased, and he became warmer; the pupils fully contracted. On Saturday morning he was removed by his father, some prostration alone remaining. He has since remained quite well.

A fifth case was admitted in full collapse three hours since, and after the second dose considerable improvement was manifested, but the details must be reserved for a future report.

The above cases are too few for any positive conclusions to be drawn, but they are published in order that any physician who thinks that my reasons for suggesting the drug are sound may give it a trial on a larger scale. It may be better to administer the medicine by subcutaneous injection, as absorption is weakened, in larger doses than I have done, or combined with stimulants, anti-spasmodies, disinfectants, astringents, eliminants, or any other class of drugs which have been apparently useful.

I must add that I still regard the plan of Dr. G. Johnson as founded on truth, and the agent I have ventured to suggest is highly eliminative, especially by the alimentary glands. However, besides the removal of the morbid matter, it must be necessary to counteract the effects it has already produced, and if they consist in a spasmodic condition of the muscular tissue of the blood-vessels—and it seems to me there is no other way by which we can account for the intense and, in some cases, almost instantaneous collapse—the Calabar bean possesses antagonistic influence.—*Dublin Medical Press and Circular, Sept.* 12, 1866.

ART. XXII.—*Fowler's Solution in Lupus:* By EDWIN ANDREW, M. D.

IN the discussion which took place at Chester after Dr. Broadbent's paper on Cancer, I mentioned that I was giving with advantage in a case of lupus half-drachm doses of Fowler's solution of arsenic.

So many members of the British Medical Association seemed to think I was mistaken, owing to the largeness of the dose, I thought it might be more satisfactory to give you the exact manner of treatment.

I find, from my day-book that, I began with ten-minim doses of the solution on May 8th (generally taken three times a day after food). I increased it on May 24th to twenty minims; on June 6th to twenty-five minims; on June 14th to thirty minims; on June 19th to thirty-five minims; which last dose I have continued to the present time with the greatest advantage, the lupus having nearly healed.

Of course, I have watched these large doses with the greatest care, and with the most stringent orders that I should be communicated with immediately soreness of the eyes or any diarrhœa should take place.

My experience tells me that there are certain constitutions which are highly benefitted by large doses of arsenic, and on whom small doses seem to have little or no effect.

More particulars may be given, if required; but these are sufficient to prove the truth of my large doses.—*British Med. Jour., Sept.* 8, 1866.

Bibliographical Record.

Medical Diagnosis, with Special Reference to Practical Medicine. By J. M. Da Costa, M. D., Lecturer on Clinical Medicine, and Physician to the Philadelphia Hospital, etc., etc. Second Edition, Revised. 8vo, pp. 784. Philadelphia: J. B. Lippincott & Co. 1866. Blelock & Co., New Orleans.

The first edition of this work received a favorable notice in the July number of this journal, and has been highly commended by the medical press in this country and in Europe. The best evidence of its value is furnished in the exhaustion of a very large edition within eighteen months of its publication. The preparation of a new edition has given the author an opportunity to revise and enlarge his work, in the manner stated in his preface: "The volume has been revised, and I have added about ninety pages and twenty-two wood-cuts, mainly on subjects which in the former edition were briefly touched upon. The chief additions will be found in the chapters on Diseases of the Brain, of the Larynx, of the Blood, on the Urine and on Parasites, and in the section on Abdominal Enlargement; though new matter has been incorporated in other parts of the book."

It is needless at this time to speak in praise of a work which has already established its reputation, nor in its general excellence is it necessary or easy to single out any peculiar feature.

But on the subject of Yellow Fever we feel bound to observe that some of Dr. Da Costa's ideas are at variance with with those held by the experienced physicians of this city, who have had better opportunities of observing the disease than any one in Philadelphia. The first, or febrile stage, the average duration of which he states to be from thirty-six to forty-eight hours, is known to vary very little, in the great majority of cases here, from seventy-two hours.

In his differential diagnosis between this and Bilious Remittent Fever, he mentions as one point "very severe nausea and vomiting throughout"; while in fact some fatal cases and a vast majority of the favorable ones terminate without any vomiting.

Delirium, he remarks, is rare. We find it common enough, and a prevalent symptom in bad cases.

Instead of "little muscular prostration," we find great prostration, in most cases.

In speaking of its nomenclature, he observes: "This formidable malady is known under more than one name. It is the disease of Siam, the malignant pestilential fever, the Mediterranean fever, the malignant bilious fever of America, the sailors' fever, typhus icterodes." La Roche affirms that it has several times visited the Atlantic and Mediterranean ports of Spain, and Leghorn once; that it does not appear in the East Indies, and has never prevailed in China, Cochin China, Singapore, Siam or Ceylon. Professor Wood also agrees that it does not prevail on the coasts of the Mediterranean east of Spain, nor in any portion of Asia. We believe that it is generally agreed that the visitations of yellow fever are mostly confined to the eastern portions of America and the west of Africa, though it has occasionally appeared on the western coast of America.

Cholera Prospects: Compiled from Personal Observations in the East, for the information and guidance of Individuals and Governments. By TILBURY FOX, M. D., London. Pamphlet, pp. 42. Robert Hardwicke, 192, Piccadilly. 1865.

THOUGH received nearly a year after publication, this little *brochure* possesses interest, as embodying the views of one who has had excellent opportunities of studying the origin and early progress of the present visitation of cholera.

In his preface the following shows the plan of his treatise and affords an insight to his opinions regarding its propagation: "My information, self-sought and self-obtained in the East, shows—(*a*) how untenable is the theory of spontaneous development; (*b*) that the source of cholera poison is India; (*c*) the influence and great power of transporting agencies: men, ships and currents of air; (*d*) the line of investigation required of the International Sanitary Commission; (*e*) the action of good food as a preventive,—a word for the poor, and a warning to ourselves; and lastly, (*f*) the plan of prevention and treatment found to be most successful of late."

It may be inferred from the above that he is a decided believer in the contagious properties of the disease and in the efficacy of strict quarantine regulations. Whether he fully establishes these points, we must decline to express an opinion, holding that the case is not yet proven.

In the production of the malady in its native clime, he inclines to the opinion that much may be due to the quality of the food, and especially to diseased and damaged rice; and this seems reasonable

enough, in view of the influence generally attributed to fungous growths in the production of disease.

While granting that palpable substances may be wafted many leagues through the air, he believes that the cholera poison, if material, would be so far diffused and diluted as to fall within the control of Nature's great disinfectant, ozone, and thus be rendered innocuous; but in the present state of our knowledge of this subtle agent, we think it not safe to speculate much on its power.

As means of prevention and safeguard, he speaks highly of a belt worn closely around the abdomen, both for support and warmth; also of a respirator of silk or other fabric, to be worn by those in attendance on the sick.

In the belief that the dejections hold and communicate the poison, he has great faith in the efficacy of the alkaline sulphites, both as curative and disinfecting agents. In the stage of collapse he places more reliance on strychnine than any other drug, given according to the urgency of the case in dose and frequency, until the slightest sign of its action is manifested. In bad cases, he recommends the hypodermic administration of remedies, or injections into the veins. Others too have recommended the same treatment.

On Spermatorrhœa: Its Causes, Symptomatology, Pathology, Prognosis, Diagnosis, and Treatment. By Roberts Bartholow, A. M., M. D., Professor of Physics, etc., Medical College of Ohio. William Wood & Co. New York. 1866.

Through the kindness of Mr. Jas. A. Gresham, Camp Street, New-Orleans, we have before us the above mentioned little volume of 112 pages. The author, after naming in his preface the various causes that induced him to publish this book, says: "My little work will have done all that I can desire for it, if it assist the practitioner in forming correct views of the nature of spermatorrhœa, and enable him to conduct cases of this disease to a more successful issue than he has hitherto been able to accomplish."

Chapters are devoted to each subject announced in the title. Those on causes, symptomatology, prognosis, diagnosis, contain simply a practical, succinct summary of views entertained by the profession. In the chapters on pathology and treatment, the author discusses the theories of other writers, and deduces hints of important value.

After reviewing the opinions of different authors, the writer thus states his ideas concerning the pathology of this affection:

"We have thus brought together in a group, a collection of facts,

which seem conclusively to establish the dependence of the sexual function and that particular form of sexual derangement which we are here considering, upon the nervous system. A careful distinction is to be made between spermatorrhœa, a symptom of lesion of the central nervous system, and spermatorrhœa, a symptom of functional derangement of the nervous centres due to a peripheral irritation.

"We are now prepared to study the several groups or orders of symptoms, or the natural subdivisions of spermatorrhœa. The pathological conditions may be comprehended in three groups: genital; cerebral; spinal.

"In the first, or genital form or phase, which is the most common, there are excessive sensibility of the sexual apparatus, and greatly increased reflex excitability of the cord.

"In the cerebral form there are associated with the preceding condition certain disorders of the mind—melancholia, delusional insanity, and mania.

"In the spinal form the functional derangement of the cord is either excessive and pronounced, or has resulted in organic lesion."

The opinions announced under the different heads are essentially those entertained by every experienced practitioner of medicine. The symptoms and causes are too obvious to escape attention.

The chapter on treatment dwells on the benefits to be derived from the use of Bromide of Potassium, which no doubt has many happy influences on diseases of the nervous system. But we cannot perceive that the author has added to our fund of information concerning this singular yet common affection. We would, however, commend its perusal to those who wish to read a condensed summary of the pathology and causes of this troublesome malady.

Editorial.

Health of New Orleans.

MANY inquiries have been made concerning the health of this city during the months of summer, and much anxiety is expressed by citizens in reference to the return of persons who have been absent during the sultry season.

No one who has properly examined the facts relative to the diseases that have afflicted our city for the past four months can gainsay the truth that cholera has existed in an epidemic form. If any one doubt the assertion, let him number the victims filling the graves of the poor and destitute, or even the magnificent tombs of the rich. This latter class of our population has, as elsewhere, fortunately escaped the severity of this disease, which discriminates, in most cases, with remarkable precision between the classes of persons to be swept away by its dread approach. The observations of the past are confirmed at the present day. The poor, the reckless and the dissolute fall under the scythe of the destroyer by a single blow, whilst the prudent, thoughtful economizer of health scarcely trembles in the presence of this vile pestilence.

Yellow fever, like cholera, appeared in the summer, and still lingers in this city. But unlike its associate scourge, it has not spread in an epidemic form. It is endemical in character, and seems merely to continue its presence by attacking unacclimated persons now hastening to our crowded city. We trust that the cool weather may free us from the terrors that have hovered about us, and that health may come with the beginning commercial season.

In order to give a more correct account of causes associated with the rise and progress of the diseases of the summer, we have solicited from Dr. C. H. Tebault, health officer of the Second District of this city, a report of the facts observed by him in his various inspections. We subjoin his statement, believing it to possess truths of of interest to the medical profession as well as to the laity:

Messrs. Editors: You have honored me with your solicitations for an article regarding the health of this city during the months of July, August, September, and October up to date. This is immediately wanted, and I am pressed with the utmost dispatch. I must, therefore, ask an indulgent scrutiny from all my readers; for it is with extreme reluctance that I appear before the medical public, as I have not the time to devote to the important subject confided to me which it properly and justly deserves.

Until Asiatic cholera made its appearance in our midst, the health of our city, with its much augmented and unacclimated ppoulation,

was incredible, as indicated by the mortuary reports. There were a great many strangers among us. They came from distant as well as from neighboring States, and from the rural portions of our own State, to seek employment in this great and inviting Southern metropolis.

Tens of thousands of negroes forsaking their old homes in the country, enticed away by depraved white men, and the lure of an imaginary life of ease could they reach this great city, flocked here. They rented all the small houses that were vacant, and huddling together in great numbers, (several families to a room,) were frequently able to out-bid an honest white man, and thus turn him out of doors. This condition was admirably calculated to breed disease; yet in the face of all this, never was the city more healthy until the implanting of Asiatic cholera amongst us, as I shall attempt to show, by the military.

All will remember the existence and ravages of this disease at Hart's Island, a military post near New York, I believe. I am not advised as to the numerical strength of the force stationed at the point designated, but must presume that it was considerable, as detachments therefrom were sent all through the South, and this at a time when the disease was prevailing there.

On the twenty-eighth of July, the Physico-Medical Society of this city met in one of its regular meetings. After all other business had been attended to, Dr. Moss, the president, inquired of each member present to know if any thing of interest had occurred in his practice, since the last sitting. Dr. Smith, formerly Assistant Surgeon, I believe, of the United States Army, replied that he had attended twenty cases of genuine Asiatic cholera, all confined to General Sheridan's body guard. Dr. Axson then interrogated Dr. Smith, to know whence these troops came, and was answered from Texas. It was well known, however, and the newspapers of this date contained statements of the fact, that soldiers from Hart's Island were being sent to Texas *via* New Orleans. It is further known that the body guard referred to were fresh from Hart's Island.

I stated that I had seen a negro with Asiatic cholera that morning. The negro and white troops being in constant and unrestricted intercourse, it was quite easy for the disease to be sown by them among the negroes huddled as aforesaid, where many of the negro soldiers were living in unrebuked concubinage.

This was the first announcement of Asiatic cholera in our city—the first case reported to the Board of Health was on the following day, as will be seen by the accompanying table, which presents the deaths from cholera and other diseases, together with a classification with reference to color, reported to the Board of Health, since the existence of the cholera in the city became an established fact. This table does not include the interments from the Marine Hospital, which, being under military control, are not reported to the board. From the 5th to the 8th August the board has no returns from the cemeteries. The first daily report was made to the board on the 9th August. That and all the succeeding daily reports show the interments up to 6 o'clock of the morning of the day the report may be dated.

DATE	Cholera.	Whites.	Blacks.	Not classified.	Yellow Fever.	Other diseases.	Whites.	Blacks.	Not classified.	Aggregate from Cholera and all other diseases.
July 29 to August 5	29	..	..	29	..	164	..	..	164	193
August 5 to August 8	..	..	..	..	..	..	..	..	..	..
August 9	18	12	6	..	..	35	22	13	..	53
.. 10	24	..	..	24	..	17	..	..	17	41
.. 11	27	15	11	1	.	21	16	5	..	48
.. 12	27	11	16	..	1	31	25	6	..	59
.. 13	31	16	15	..	..	32	20	11	1	63
.. 14	28	11	15	2	..	34	21	11	1	62
.. 15	26	14	12	.	..	17	13	4	2	43
.. 16	44	19	22	3	..	24	19	5	..	68
.. 17	24	12	9	3	..	26	20	6	..	50
.. 18	27	21	6	..	..	27	19	8	..	54
.. 19	28	16	9	3	..	29	17	12	..	57
.. 20	14	6	8	..	..	31	21	8	2	45
.. 21	28	13	15	..	..	20	16	4	..	48
.. 22	28	17	10	1	1	13	7	7	..	42
.. 23	27	16	11	..	..	23	17	6	..	50
.. 24	26	24	2	..	..	23	16	7	..	49
.. 25	16	11	5	..	..	23	14	8	1	39
.. 26	17	8	8	1	..	20	11	9	..	37
.. 27	8	4	4	..	..	16	8	7	1	24
.. 28	14	4	7	3	..	23	12	6	5	37
.. 29	10	5	4	1	..	26	20	6	..	36
.. 30	14	5	6	3	1	14	10	6	4	34
.. 31	9	4	4	1	2	22	19	5	..	33
Septem. 1	22	7	7	8	..	14	11	5	3	41
.. 2	19	12	6	1	..	..	13	3	5	40
.. 3	15	8	5	2	3	19	13	6	3	37
.. 4	18	8	8	2	1	13	9	5	..	32
.. 5	16	9	4	3	..	19	14	5	..	35
.. 6	23	8	14	1	1	25	15	10	1	49
.. 7	17	7	9	1	1	27	15	12	1	45
.. 8	14	5	8	1	..	21	13	7	1	35
.. 9	19	10	6	3	..	18	10	7	1	37
.. 10	29	7	19	3	1	27	17	7	4	57
.. 11	32	14	14	4	..	22	14	2	6	54
.. 12	14	7	3	4	1	21	11	6	5	36
.. 13	22	10	11	1	1	17	11	4	3	40
.. 14	16	7	4	5	1	26	19	6	2	43
.. 15	22	11	7	4	1	19	16	4	..	42
.. 16	18	6	10	2	2	28	15	8	7	48
.. 17	10	7	2	1	1	10	6	5	..	21
.. 18	19	8	10	1	5	18	17	5	1	42
.. 19	15	7	5	3	1	23	15	8	1	39
.. 20	11	3	6	2	2	18	15	5	..	31
.. 21	7	2	4	1	3	15	13	4	1	25
.. 22	12	7	4	1	2	23	16	4	5	37
.. 23	7	3	1	3	1	14	12	2	1	22
.. 24	11	10	..	1	1	12	7	1	5	24
.. 25	9	6	3	..	4	28	19	7	6	41
.. 26	7	2	3	2	3	26	21	5	3	36
.. 27	11	7	2	2	5	17	19	3	..	33
.. 28	3	3	..	..	5	25	14	5	11	33
.. 29	9	4	5	..	2	14	13	3	..	25
.. 30	22	17	..	..	3	21	13	6	5	46
October 1	8	7	1	..	4	19	15	6	2	31
.. 2	5	2	1	2	3	26	20	9	..	34
.. 3	12	8	4	..	2	..	14	8	..	34
.. 4	9	7	2	..	7	29	23	10	3	45
.. 5	2	1	..	1	..	16	10	4	2	18
.. 6	5	4	1	..	4	16	12	8	..	25
.. 7	10	6	4	..	6	28	28	6	..	44
.. 8	8	7	1	..	2	18	17	3	.	28
.. 9	11	7	4	..	3	17	18	2	..	31
.. 10	5	3	2	..	1	20	13	7	1	26
.. 12	5	4	1	..	7	19	20	6	..	31
.. 13	8	7	1	..	1	11	6	3	..	20
.. 14	7	4	3	..	6	28	26	7	1	41
.. 15	9	6	3	..	4	18	17	5	..	31
.. 16	4	3	1	..	5	18	16	6	1	27
.. 17	8	5	3	..	3	25	19	9	..	36
.. 18	8	2	6	..	1	20	14	7	..	29
.. 19	5	4	1	..	4	24	22	6	..	33
.. 20	4	4	..	..	4	19	19	4	..	27
.. 21	4	4	..	..	2	16	14	4	..	22
.. 22	6	5	..	1	5	12	13	4	..	23
.. 23	4	3	1	..	4	23	21	6	..	31

I noticed in the medical ward, of which I had charge in the Charity Hospital, a great disposition on the part of ordinary intermittent fevers, as early as the first of June, to suddenly assume the congestive type—in other words, to become pernicious intermittent fevers. This condition continued until the 13th of June, when Magdalena, daughter of Lorentz King, herself a native of France, aged about twenty years and resident in this city about thirteen years, was admitted and assigned to my ward. She was in the employ of a Mr. Nicholas Shurman, a small retail grocer on Cypress street, nearly on a line with the Hotel Dieu, and within a stone's throw of the New Basin.

She had appeared very well on Sunday, the 9th of June, and went out visiting on that day. Monday she went through her usual duties. Tuesday, cooked breakfast, but was manifestly indisposed, lying about on the floor, complaining of terrible headache and backache, associated with retching and vomiting, and refusing to eat. The matters thus ejected were said to look like water. She had also considerable fever, and was sent to bed. Wednesday, fever still high, with continued gastric irritability and vomiting. Patient reported to have taken no nourishment since Monday. Wednesday night, patient appreciably worse, and fever very high. Thursday, patient cold and vomiting black looking matter, described as resembling coffee grounds. To-day, her father was sent for, and entered her in my medical ward, about 8 o'clock, P. M. She died at 4 o'clock, Friday morning. Cadaveric examination made at 10 o'clock same morning, revealed an enlarged, anemic-looking liver, an hypertrophied spleen considerably congested, and breaking under small violence; stomach and small bowels generally inflamed. The integuments were tinged yellow, and the adnata mildly so. While in my ward, and but a moment before death, she vomited about three pints of black vomit, which I saw.

So well convinced was I that the case before us was one of yellow fever, I consumed half a day in hunting up the father and the employer of this young woman, in order to procure a full history of her case, which I immediately recorded in my case book, and from which I borrow the above facts. This case was not reported as one of yellow fever, because a sufficiency of evidence was not obtainable at the time to justify such a diagnosis.

Some few days later, several suspicious cases offered in the hospital, and these went on increasing by degrees, until the cholera exhibited itself. Some of the highest medical authorities in this city saw these cases, and expressed the opinion that, were yellow fever present, they should pronounce them such. There can be small doubt now, if any, touching their true nature. When cholera presented, these cases disappeared. On the 12th of August a case of death by yellow fever occurred at the Hotel Dieu, which was reported to the Board of Health. This is the first case mentioned in their accompanying table.

The cases of cholera are (for the disease still obtains in our midst) confined to the poorer classes and the negroes. I have seen more than a hundred cases, in the Charity Hospital and in private practice. The disease exhibited itself in all parts of the city, but was particularly partial to the encampments of the United States forces

on duty. Localities, where the negro soldiers were in the habit of congregating, were another favored habitat of the disease. Suffice it to say, however, as the result of my own personal experience, of some few more than a hundred cases, that cholera supervened only in some imprudence committed in diet; that it was originated *per se.*

Immense quantities of tainted meats were on the market, which were purchased for their cheapness by our indigent white population, along with the negroes. These meats consisted mainly of hams, shoulders, sides, etc. Again, the past summer consisted of the hottest weather that I ever remember to have experienced—indeed, notwithstanding the chilly and disagreeable nights and mornings now obtaining, the sun is excessively oppressive, when fairly exposed to its rays. The beef sold in the various markets, which were allowed by law to remain open until meridian, more especially the iced beef of the previous day remaining over, lost its freshness long before that time, and often evinced palpable decompostion. The same regulations governed the fish markets, yet the fish, shrimps and crabs, as early as eight and nine o'clock in the morning, made loud demonstrations of their unfitness for sale. The indigent of all nationalities, colors and sexes, hailed this period as the appointed season to make their purchases, as much was now procurable for their reduced and circumscribed means. As Health Officer of one of the four districts of this city, I communicated with the Mayor in relation to this important matter, but without avail, or even an attempt on his part to remedy this frequent evil.

I undertook its remedy in part myself, but could not proceed to the extent that I could have wished. I suppressed the sale of fish, shrimps and crabs in my district, after the hour of nine in the morning, and ordered all the tainted meats sold by the butchers to be instantly seized, and inflicted the fine imposed by law on them, for the vending of unsound meats. The Second District, of which I had charge, was far short of the others, in its number of cholera cases. Immense quantities of Western cabbage, perfectly unsound and most obnoxious to the health of our city, came down the river on steamboats, and were offered for sale and bought throughout the city. I prevented their landing in my district, and interdicted their sale in its markets, and elsewhere in the district.

Without wearying the reader with further details in the premises, I will declare as my deliberate belief, that no cases of cholera occurred spontaneously, but always responded to something taken into the stomach, which was ill-advised and improper. I have not seen or heard of a single case of cholera occurring among the Jews. The Jews, it is well known, never touch unsound or diseased meat. They always appoint a priest to superintend the proper preparation of their beef by their appointed butcher. Their butchery is always distinct from ours. A crab or shrimp gumbo at night; unsound fish, disguised by high seasoning; soup made of unsound meat; unsound meat itself; or some other objectionable article or articles, were the legitimate parent of the disease.

Decaying animal matter, or ingesta, however, seemed to be the general cause of this disease among the cases which fell under my observation. Fish, and crab or shrimp gumbo, appeared to be the

special provocative causes. I will briefly refer to the occasion of three cases, as an index of the remainder adverted to. The case reported to the Physico-Medical Society, had eaten on Friday night largely of a mess of cabbage and had drank profusely of Mississippi river water. She was seized that night, and I called to see her early in the morning. She was then collapsed, and died in a few hours.

Another case, a German woman, had been very much engaged all day, and did not or could not find time to take her dinner. About ten o'clock that night she felt hungry, and accordingly cooked a piece of beef which she had purchased early that morning, knowing at the time that the meat was in bad condition; but such was her craving for something to eat, she resolved to feast on it, let the cost be as it may. In less than half an hour after this meal, she experienced a feeling of uneasiness in her stomach, and in a couple of hours later all the symptoms of cholera were present. It was with the greatest difficulty that her life was saved. Three weeks after regaining her strength she had a second attack, the result of a repeated imprudence, but again recovered.

Another patient met me in the street, looking very pale; his features were shrunken and he was exceedingly weak. He told me that he had been terribly cramped three times that morning (it was then about ten o'clock, A. M.), and that he had been vomiting and purging pure water. He could not imagine what had given him cholera; but after questioning him closely, he remembered to have eaten late the past night a crab gumbo, and now that he had thought of it, he had not felt well since. Rest and a little paregoric and brandy brought him out.

The yellow fever has been exceedingly tractable so far. The few cases that terminate fatally, are seen late—the patient having ignorantly or stubbornly neglected himself. My second case was on the 26th of August, which terminated in recovery. Very recently I lost one of my most esteemed friends by this disease: he had neglected himself, and only called me in when in the stage of black vomit.

I have not the time to call up the necessary facts to prove that yellow fever, in this instance, originated here.

In regard to cholera, wherever soldiers have been stationed in the Southern country, this disease has been imported there in the manner described above. Where no U. S. soldiers were found, cholera did not exist.

I have but small time to refer to the Health Ordinance, adopted by the city authorities at the suggestion of the Board of Health, creating a health officer for each district of the city. The suggestion was well-timed by the Board of Health, but the city authorities delayed and protracted their action in the premises until cases of both cholera and yellow fever had occurred. On the 3d day of August the four health officers received notice of their appointment to specified districts, and at once entered upon the discharge of their responsible duties.

Many abuses to the prejudice of health were either abated or silenced; the Street Commissioner was brushed up, the markets

overhauled, and in fine every thing done within our power. The result has been, a gradual retiring of the cholera without those heavy casualties noticed in other large cities, and a very mild yellow fever in despite of the large unacclimated population among us. The mortuary reports, even when the cholera was most active, have exhibited a condition of health here unsurpassed by any city, town or village on this continent, estimating by population.

I have heard no opinion positively expressed with reference to cholera having been epidemic or not. I must contend that the disease prevailed as an epidemic here. The ensuing is the reason on which I base this conclusion. No one, no matter how robust his health, could commit with impunity a dietetic imprudence. It mattered not in what part of the city the individual resided, he was sure to pay for his temerity, unless his after prudence induced him to consult a physician to neutralize the anticipated trouble. Any one catering to such indiscretion, was sure to have at least a cholerine, or more generally an attack of Asiatic cholera. In the presence of such facts, growing out of careful inquiry and a tolerable individual experience, I have been compelled to adopt the opinion held forth above.

It occurs to me, that some compromise might be made between those medical men who have "pernicious fever" and those who find "yellow fever" in ther practice. I have never yet met with any one who could demonstrate a difference between the cases thus differently named, further than to say pernicious fever *(fièvre pernicieuse)* when the case terminates in recovery, and yellow fever when the case terminates fatally. Can we not split the difference, and call this class of cases Pernicious Remittent Fever? This title would certainly convey a better idea of the malady. The patient is not yellow, as one unacquainted with the disease would expect to find, except shortly before and after death. Pernicious Fever affords but the most vague conception of this disorder. Pernicious Remittent Fever, as we shall call it, is a fever of one paroxysm, with distinct remissions, and a better name for this affection.

This malady and cholera are apparently not good bed-fellows. The first prevails, I may say exclusively, in the First, Second and Fourth Districts, at this moment; the last, exclusively in the Third District.

Pernicious Intermittent Fever (congestive fever) has, I have reason to believe, been occasionally mistaken for cholera. The differential diagnosis between the two complaints I think quite easy. In the first, there is burning heat of the head, while the rest of the body is comparatively cool; in the last, the head is never hotter than the rest of the body, and never any thing like as hot as exists in the first.

I have completely consumed all the time at my disposal, and must conclude by reiterating the hope, that the hasty manner in which this article was gotten up will secure me the indulgence of my readers.

C. H. T.

Correspondence.

A PRIVATE letter written at Dublin, Ireland, has been received from the associate coëditor of this Journal, Dr. S. E. Chaillé; and as it contains intelligence that may be of interest to our subscribers, we insert the following portion:

"I have gathered but two things, of any interest to the profession, since here: something of the Endoscope, and more of the Turkish Bath. The instruments imported from the north, at my request, by Hahn & Fredrickson, give one about as fair an idea of the Endoscope, as the *chimney* of one of our steamboats would of the boat itself. As you will soon receive full information on this subject, I will only say that this instrument is calculated to render important service, in that it enables us to submit to ocular inspection parts which otherwise are hidden from us, but that, like the opthalmoscope and laryngoscope, it requires experience to bring affected parts into the field of vision, and still more to correctly interpret the appearance of the part when seen. Therefore none of these instruments are likely ever to come into general use, but to be confined to the hands of the few whose inclinations and opportunities may induce them to instruct themselves, as also their less skilled professional brethren. That all of them should form an indispensable portion of the instruments in every medical college and hospital cannot be questioned. The Endoscope, as modified by Dr. F. R. Cruise, of Dublin, is confessedly the best. Its superiority consists in the greater amount of light thrown on the disc and part, and consequently the much better view afforded; and also in the introduction into the case of specula for straight canals, as for the urethra, rectum, cervix uteri, etc., other specula with one extremity bent at such angle, and containing such necessary reflecting mirrors, as to enable one to see parts, as it were, around the corner. For instance, with the specula of Dr. Cruise the œsophagus and larynx can be examined; and from Dr. Cruise's demonstration to me of his instrument, I am persuaded that he is right in asserting that his instrument is a better laryngoscope than the original one of Czermack. However little use may be made of the endoscope by the profession, it is surely something added to our armament to have an instrument by which any canal or cavity in the body may be actually seen, into which a tube can be introduced. Dr. Cruise read me a letter from an eminent English surgeon, in which he says, that by the endoscope's aid he had *seen* several small stones in a bladder, in which only one had been diagnosed, and that in consequence the treatment had been essentially modified. In conclusion, I may state that this instrument is manufactured by Messrs. Fannin & Co., No. 41 Grafton street, Dublin, and that the price here is $50, in gold; which is certainly dear.

"You are aware that I have long been a devout believer in and strenuous advocate for the virtues of the hot-air or Turkish bath. I have already taken three, and as a result, will certainly never again swallow a Dover's powder or any other "doctors' stuff," in the way

of a vile sudorific, so long as a Turkish bath is accessible. For cleansing the body and purifying the skin it stands without a peer. The quantity of fluid which may be thus eliminated is astounding, when considered in relation to the absolute invigoration of the whole man, physical and mental. For two successive days, I have had flow from me certainly not less than two quarts of perspiration each day; and instead of the languor and debility which might be expected, I have experienced a sensation of physical vigor and mental elasticity which would induce me to prescribe (were I again a medical inspector and the thing practicable) a Turkish bath to an entire army on the eve of battle. My skin, never in perfect health, is now as fresh as an infant's; and I feel very sure the Turkish bath will keep it so. Without endorsing all the cures claimed for it, my limited experience satisfies me, and without any personal experience I am satisfied of much more, that for the incipient stages of colds, coryza, bronchitis, muscular rheumatism, etc., it has no equal, and that it is a more certain remedy for the relief of most neuralgias, than any other *one remedy* known to the profession.

"That which establishes its virtues, and it is this to which I desire specially to draw attention, is its progress in both professional and popular regard. Introduced from Turkey into England just before our war, it is now as common in every European city, and deemed as essential to health, as the public squares. In every bath you meet men of intelligence, who prescribe this remedy for themselves, with as much frequency, more confidence, and far greater benefit than our people resort to blue mass and quack pills for that many-headed monster, "biliousness." I believe that there would now be no trouble in any city here, the size of New Orleans, in establishing a Turkish bath by a joint stock company, or public subscription; and I trust you will bring this matter constantly before the profession, and the public, until the Charity Hospital has erected within its walls this potent remedy for its sick, and until New Orleans can boast of this important forward step in cleanliness, and therefore in civilization, for the benefit of such citizens as have the good sense to appreciate it; and to appreciate it, it is only necessary to use it. Dublin, not much larger than New Orleans, has two such establishments. I have visited the smaller one only, and am assured that the average attendance *per diem* is not less than forty. Next week I shall try the great Hamman, or Turkish bath, in Jermyn street, London, said to be one of the best in the world, and will no doubt furnish something more on this, as I deem it, important subject. This much has been written very hastily, and is scarcely worthy of publication, unless it should induce some one to interest himself in establishing this bath in New Orleans, a climate in which it would probably render far greater service than in localities having a dryer and purer atmosphere. I believe that the Turkish bath recently established in New York is the only one at present in the United States."

Re-Vaccination. By A. J. SEMMES, M. D., Visiting Physician to Charity Hospital, New Orleans.

THE perusal of an interesting article on modified inoculation in the July number of this Journal, has suggested the propriety of calling the attention of the profession to the imperative necessity of systematic re-vaccination, which has not received that consideration from either the medical or lay public which its social and sanitary importance demands.

Why is it that variola has been so prevalent, and why does this pestilence so often become epidemic? The existence and diffusion of this deplorable evil may be attributed to non-vaccination, inefficient or carelessly performed vaccination, and the general want of re-vaccination, as well as to the gross and culpable neglect and shameless indifference of the state and municipal governments of the Union. Vaccination, as a measure of general sanitary police, is of as much, if not more public concern than the much vaunted system of *general* quarantine, or the *tabooing* of *all* commercial communication, for months, by sea or water carriage, with infected ports.

In the German States not only vacination, but re-vacination, is compulsory, and its performance is rigidly exacted with that certainty and inflexible promptitude which absolute governments are accustomed to resort to for the public good. The "Statistical Sanitary and Medical Report, Army Medical Department, for 1859, London," will furnish all of the essential and important statistics and information in reference to the subject of vaccination and re-vaccination in the British, Prussian, Bavarian and Wurtemberg armies. In the Army and Navy of Sweden, 1944 re-vaccinations were performed during the year 1852, of which 644, or 33.11 per cent., were successful.

J. Aiguer, of the U. S. Sanitary Commission, Washington, has in his possession several complete and valuable statistics for the kingdom of Bohemia and the city of Vienna. Of the re-vaccinations performed in Bohemia, $38\frac{4}{5}$ per cent. were successful; $59\frac{2}{5}$ unsuccessful; result unknown in $1\frac{4}{5}$ per cent. Variola occurs in one out of $367\frac{2}{3}$ vaccinated persons, and in one out of $12\frac{1}{8}$ non-vaccinated persons. One death by variola occurred in $7166\frac{1}{3}$ vaccinated persons, and one death by variola occurred in $40\frac{2}{3}$ non-vaccinated persons. The mortality of variolous patients, vaccinated, was 1 in 19, and of non-vaccinated patients, 1 in 3. Before the introduction of vaccination, there was one death by variola among every 32 deaths by *all other*

causes; after its introduction, only 1 in every $457\frac{3}{4}$. Before the introduction of vaccination, the proportion of deaths by variola to the entire population was $1:396\frac{2}{3}$: after its general practice, $1:14741\frac{1}{3}$. The reduction of the mortality from small-pox by the introduction of general vaccination is as 32:1.

If it is desirable to cumulate statistical testimony in favor of vaccination (which is useless in the present state of science), reference should be made to the abstracts of the annual reports of the Vienna General Hospital, published annually in *Schmidt's Jahrbücher*. In the Surgeon General's Office at Washington, soon after the commencement of the late civil war, in 1861, the duty of consolidating the monthly reports of the Medical Director of the Federal Army of the Potomac was assigned to a competent statistician, and is, I presume, by this time completed with other valuable Medical and Surgical reports.

As remarked above, re-vaccination, as well as vaccination, is obligatory in Germany, and Sir Thomas Watson, M. D., reports that re-vaccination was commenced in the Prussian Army in 1833, and variola has been almost entirely eradicated. In the Kingdom of Wurtemberg, during a period of five years, only one case of small pox is reported among 14,384 vaccinated soldiers, and only three cases among 29,684 re-vaccinated citizens. These statistical memoranda speak for themselves, and need no argument.

The Board of Health of this State should be clothed by legislative authority with the power, and furnished with the means, to establish and enforce not only general vaccination, but also to insist upon a re-vaccination of the people of the State. It is practicable to commence the system in all public institutions, hospitals, jails, prisons, workhouses and asylums; and to aid in the formation of a correct public opinion, the coöperation of the members of the regular medical profession is demanded, through either the medical or secular press. Morever some means should be adopted by the State Government to secure and distribute fresh and reliable vaccine matter, by imitating the example of the Commonwealth of Virginia, in the apointment of a State Vaccine Agent, who will supply medical men with vaccine on due application.

Necrological.

Dr. Samuel Adolphus Cartwright, a Virginian by birth, died in Jackson, Miss., May 2d, 1863. With no fear of death he calmly resigned this and went forth to meet the new life, with a confidence which proved that his days, passed in the culture of his own nature and in the service of his fellow creatures, had been a fit preparation for the change which awaited him.

Born November 30th, 1793, in Fairfax county, Virginia, he inherited from his father, the Rev. John S. Cartwright, little besides his ancient and honorable name, heretofore borne by many bright examples of genius as poets, scholars and inventors; and very early he commenced the study of that profession, in which he afterwards attained such eminence, under the supervision of Dr. John W. Brewer, of his native county.

Leaving his studies as a voluntcer in the war against Great Britain in 1812, he served with honor in the battle of North Point, as a member of Touson's artillery, and it was in this stubbornly contested fight that he received that injury which caused his life-long deafness.

On the declaration of peace he resumed his medical studies, attending his first course of lectures in the city of Philadelphia, in the office and under the immediate supervision of the celebrated Dr. Benj. Rush.

Before receiving his degree he commenced practice in North Alabama, living in the neighborhood of Huntsville and at Russellville in that State, where, as lately as the summer of 1861, he was remembered and warmly welcomed by the older inhabitants, during a short visit he paid to that section of the country, to which point also his degree as M. D. was sent by the University of Pennsylvania.

In July, 1823, he arrived at Natchez, henceforward for many years to be his home, and devoted himself to the practice and study of his profession. Nothing that hard study, deep reflection and the closest observation could effect towards perfecting his knowledge of medicine, and the kindred sciences, was neglected. The laborious acquisition of Greek and Latin enabled him to push his researches among the ancient authors, while French, which he now began to study and soon was able to read with fluency, opened to him a fertile field of scientific literature. At this time also he passed his examination

before the Western Board of Medical Censors and received his license.

On his recovery from the yellow fever, which attacked him in this year, he began a series of medical essays that were received with much favor by the Northern faculties, and during this and the ensuing year or two we find noted in his memorandums the receipt of a gold medal from Harvard University for an essay; from Philadelphia the receipt of a prize for his essay on yellow fever; from Baltimore a medal, value $100, awarded by the Medical and Chirugical Faculty of Maryland, for an essay on cholera infantum; and again, in the same year, a medal from the Boylston Medical Committee of Harvard University for an essay on "Whether the veins perform the functions of absorption;" and still again, a silver pitcher from Maryland.

In 1825 he married Mary, eldest daughter of Dr. Woodson Wren, of Natchez; and during the severe yellow fever epidemic of that year he acquired the love and confidence of the residents of that place, which remained unshaken and unchanged to such a remarkable degree up to the time of his death; not only by his skill in the treatment of the fever, but by his self-sacrificing spirit, which led him to devote himself to the sufferers of all classes and grades of society. From this time he commanded a large and lucrative practice in Natchez and the neighborhood, both in Mississippi and Louisiana.

The cholera of 1832, then a new and even more terrible disease than at present, gave a fresh field for his talents, and a new energy to his benevolence. Day and night was he ready, no matter how worn with fatigue, to go forth at the call of any who needed him. Innumerable anecdotes are told by his old Natchez friends of his charity and humanity, but one will suffice to show the goodness of his heart. Returning from the country at daylight, after a weary night of toil and anxiety passed at the bedside of a cholera patient, he met on an unfrequented road a negro wagoner stricken down with the fearful disease. He forgot his weariness, deferred the rest he had been longing for, dismounted and went to the aid of the sick negro. Here he was seen in early morning, here he was still found late in the day, by the solitary traveler who was fleeing from the plague-stricken town, still fighting with the cholera for that poor slave. Nor did he leave his self-imposed charge until he had safely brought him through the crisis of the disease and procured the ne-

cessary shelter and comforts for him—no easy task with the prevailing panic. His life abounds with such traits as this.

His extraordinary success in the treatment of Asiatic cholera attracted the attention of the scientific, both in America and Europe, and his opinions regarding its treatment were most eagerly sought for at the next approach of that dreadful scourge. Many were the solicitations he received to remove to other cities; the medical schools in Boston, Philadelphia, St. Louis and Baltimore offered him professorships; but the mutual attachments between him and his friends in Southern Mississippi and Louisiana were too strong for him readily to part. Natchez continued to be his home until, in 1836, having accumulated a handsome fortune, he went with his family to Europe, and passed eighteen months in travel through France, England, Italy and Switzerland. In London and Paris he was cordially received by the medical faculty, and found many of his opinions received as authority, and his treatise on yellow fever translated and adopted by the French Government. The months he spent abroad were devoted to the acquisition of knowledge in his profession and the natural sciences. His notes and observations, jotted down as he traveled, are full of interest and instruction, and show a keen appreciation of all that was beautiful in art and nature. His recollections of the scenes and incidents of his journey afforded him a lifelong pleasure.

In Paris he was undergoing a course of treatment for his deafness, which promised to be successful, when he was unexpectedly recalled home by the failure of the New Orleans firm intrusted with his fortune, which gave way like so many others in the crash of 1837. The labors of many years were then lost; but he applied himself with renewed energy to his profession, to retrieve his fortunes; and with the exception of a flying visit North, taking Cuba on his return, the ten following years were passed in arduous practice and hard study, only relieved by his writings, which are scattered through most of the professional journals of the time.

In 1848 he came to New Orleans, to do battle with the cholera, and decided on making this city his home, bringing his family and establishing himself here in 1850, where until 1862 he continued his life of unremitting study, professional practice and true benevolence. In this last year his health gave way, and, like many others of his age, his grief for the condition of his country preyed on his spirit until he was brought to death's door; when at last a passport was

granted him, and he was carried from his house to the schooner that was to bear him into the Confederacy. The free air seemed to revive him temporarily, and in some visits to old friends at Cooper's Wells and at Chatawa the fall and winter of that year were passed. His favorite occupation of writing and administering to the comforts of the many sick and wounded every where then to be found, afforded him enjoyment enough, until a letter from his personal friend, Mr. Davis, asking him to give his advice and assistance towards improving the sanitary condition of the troops in the Western Department, especially in the garrisoned towns of Vicksburg and Port Hudson, gave an additional stimulus to his exertions; and for several months his unremitting devotion to these war duties, and his continual attention to the wants of all others than himself, seemed to inspire him with an unnatural strength and courage. His whole time was employed in visiting the sick in camp and hospitals, and in organizing a better system for the management and use of the limited means at the disposal of the authorities for the sick, wounded and convalescing.

But his health was far too infirm for the tasks he undertook, and after more than ordinary exposure and fatigue, undergone in an inspection of the hospitals around Vicksburg, he failed rapidly, and his earthly life closed peacefully, though within sound of contending armies, on the 2d May, 1863. The day before his death he was still planning for the relief of the wounded, and his last day, as all his life, passed in doing good. Many grateful hearts mourned his death, and many are the blessings on his head.

Afflicted with deafness almost from his boyhood, slight at first but increasing to almost total deprivation of the sense of hearing in the latter part of his life, he patiently bore his trouble through long weary years. So far from rendering him helpless, it served only the more to concentrate his faculties on the professional studies he so much delighted in, and perhaps added to the peculiar originality of his ideas.

Many and strange were the theories held and advocated by Dr. Cartwright. His mind was of a speculative cast, and all his writings have a vein of originality running through them, which is not as fully appreciated here as in Europe.

In politics he was always a Democrat, and though not at first favoring secession, he was too true a believer in State rights not to follow his State, even to the bitter end.

His enthusiasm in theory led him often further in scientific speculation than could always be followed by the more cautious, and an idea, if a favorite one with him, was sometimes carried out until it amounted to a hobby. But his theories, if wild, were clear and most scrupulously reasoned out. Unfrequented paths were his favorite ones, and there was a charm to him in getting off the beaten track. In his profession an unusual case excited in him an interest that never flagged, until he had discovered the secret cause at work; and in other matters subjects which in general are only vaguely thought of and dismissed from the minds of busy men, were theorized on with untiring zeal. One favorite theory of his was the different origin of the races of mankind, which he most firmly held to, contending that the negro was a prior and inferior creation to that of Adam. Upon this subject he wrote and thought much, and always with a view of reconciling his theory with the Mosaic account, which, according to his interpretation, was not inconsistent with it.

His many writings are scattered through the periodical literature of the last forty years, especially of the Southern States, and have always been sought after and attracted attention from their peculiar style and original views on the subjects treated of. Even those who disagreed with his conclusions admitted the clearness of his reasoning, and the frankness with which he acknowledged an error when once convinced.

With a mind capable of grasping the most difficult questions of science and philosophy, he had the simplicity of a child and was easily led and easily deceived. His judgment of character was much less to be relied upon than would be supposed from his intellectual capacity. He studied and knew *things* more than *persons: facts* were to him more than *characters*. In reading his taste sought all that related to the natural sciences more eagerly than lighter literature, and even history was studied more for events than development of character.

Truthful as the day himself, he sought for truth; and in a stone or leaf which could unfold any of the mysteries of nature, he found more of interest than in a romance. In early life he showed considerable poetical taste; but as years rolled on the poetry passed from his mind into his heart, and his life was a song of goodness. Generous to a fault, kindly indulgent to all around him, full of charity and good-will towards men, he fulfilled faithfully his station in all the relations of life, and as a friend his value is known only by those who live to mourn him still. M.

To Subscribers:

THE Proprietors are gratified with the complimentary terms bestowed upon this Journal by the medical public. They have endeavored to bring the Journal rapidly to its former field of usefulness, and although many obstacles opposed their purpose, they are pleased to be able to advise their friends that every plan devised for the improvement of this old periodical is now pregnant with a fruitful issue.

Beginning without subscribers and exchange journals, they are already supplied with an abundance of foreign and domestic material; and a good list of friends have added their share to the expense of publication. The list of subscribers has not attained to the large number acquired prior to the late war, yet the Proprietors feel assured that as postal facilities increase throughout the Southwest, the former supporters of the Journal will assist in building up a Periodical that will be a suitable representative of the intelligence and acquirements of the medical profession of the vast region that claims this city as its metropolis.

The co-proprietor, Dr. S. E. Chaillé, now in Europe, will not only add to the pages of the Journal contributions from his own pen, but he has already enlisted the aid of several able writers in the various important medical centres of Europe. An interesting letter relative to the Endoscope has been received from Dr. F. R. Cruise, of Dublin. It is regretted that this communication did not arrive in due time for the present number. In referring to this subject, Dr. Cruise remarks that Dr. Chaillé "was greatly pleased with my demonstration of the 'Endoscope,' and requested me to send you, for your valuable Journal, a series of letters for the purpose of calling the attention of the faculty of medicine of the South to the subject. I gladly assented, and now enclose you a short letter introductory of the subject, which I hope may be in time for your issue of November 1st."

The paper above mentioned will appear in the January number of the Journal. Such are the efforts resorted to in order to assist in developing the sources for disseminating medical knowledge among the physicians of the Southwest. If the friends of the Journal will give that pecuniary aid which is alone needed, each alternate month will bring to them a Journal replete with scientific and practical details of medical facts gathered from innumerable sources. In order to meet the cost of publication, the unpaid bills are now enclosed, and delinquent subscribers are urged to respond promptly to its necessities.

Medical Journals in New Orleans.

THERE are two journals devoted to Medicine in this city: the one, *The Southern Journal of Medical Sciences*, a quarterly: the other, *The New Orleans Medical and Surgical Journal*, a bi-monthly. *The Medical Record* was the name appended to a third journal which struggled for existence, but after three spasmodic efforts to catch a breath of life, it noiselessly expired, leaving no one to record its demise. We announce its departure in order to appease inquiring friends, who wonder at this sudden fatality.

List of Journals Received.

London Lancet—August 18, 25; September 8, 15.

Dublin Quarterly Journal of Medical Sciences—February, May and August.

Dublin Medical Press and Circular—Aug. 15, 22, 29; September 5, 12, 19, 26.

The Royal London Ophthulmic Hospital Reports, etc.—April, 1866.

The Journal of Mental Science (London)—July, 1866.

The Ophthulmic Review (London)—April, 1866.

The Journal of the Chemical Society (London)----August, 1866.

Pharmaceutical Journal and Transactions (London)----August, 1866.

Medical Times and Gazette (London)—August 11, 18, 25; Sept. 1, 8, 15, 22, 29.

British Medical Journal (London)—August 11, 18, 25; Sept. 1, 8, 15, 22, 29.

Gazette Médicale (Paris)—July 28; Aug. 4, 11, 18, 25; Sept. 1, 8, 15, 22.

Chemist and Druggist (London)—September.

Druggists' Circular (New York)—September.

Atlanta Medical and Surgical Journal—Sept. and October. Edited by Drs. J. G. and W. F. Westmoreland.

The Cincinnati Journal of Medicine—Sept. and October. Edited by Drs. Geo. C. Blackman, T. Parvin and R. Bartholow.

The Cincinnati Lancet and Observer—Sept. and October. Edited by Drs. E. B. Stevens and Jno. A. Morphy.

Medical and Surgical Reporter (Philadelphia)—August 18, 25; Sept. 1, 8, 15, 22, 29; Oct. 6, 13. Edited by S. W. Butler, M. D.

The Medical Reporter (St. Louis)—Sept. 1, 15; October 1, 15. Edited by Drs. J. S. B. Alleyne and O. F. Potter.

The New York Medical Journal—September and October.

American Journal of the Medical Sciences—October. Isaac Hays, M. D., Editor.

The Richmond Medical Journal—Sept. and October. Edited by Drs. E. S. Gaillard and W. S. McChesney.

The Medical News and Library—Sept. and October. Henry C. Lea, Phila.

The Boston Medical and Surgical Journal—Sept. 6, 13, 20, 27; Oct. 4. Edited by Drs. Samuel L. Abbott and Jas. C. White.

Buffalo Medical and Surgical Journal—September. Julius F. Miner, M. D., editor.

The Chicago Medical Examiner—August and Sept. N. S. Davis, M. D., editor.

The Pacific Medical and Surgical Journal and Press----August. Henry Gibbons, M. D., editor.

The London Lancet—September and October. W. C. Herald, N. Y., Publisher.

The Galveston Medical Journal----February, March, April, July and August. Edited by Prof. Greensville Dowell, M. D.

The Medical and Surgical Monthly (Memphis)—June and July. Editors: Drs. Frank A. Ramsey, D D. Saunders, E. Miles Willet and Wm. H. White.

American Journal of Science and Art (Silliman's)—September.

De Bow's Review---Oct. J. D. B. De Bow, editor and proprietor; Nashville, Tenn.

L'Union Médicale (Paris)----No. 105, 112.

Gazette des Hopitaux (Paris)----No. 111, 113.

Gazette Hebdomodaire de Médicine et de Chirurgie (Paris)----Sept. 14, 21.

Bulletin de L'Académie Impériale de Médicine (Paris)----September 15.

The Medical Mirror (London)----September.

Edinburgh Medical Journal----September.

Books and Pamphlets Received.

Medical Diagnosis with Special Reference to Practical Medicine. By J. M. Da Costa, M. D., Lecturer on Clinical Medicine, and Physician to the Pennsylvania Hospital. Second edition, revised. 8vo., pp. 784. Phila: J. B. Lippincott & Co. 1866.

On Spermatorrhœa: Its Causes, Symptomatology, Pathology, Prognosis, Diagnosis, and Treatment. By Roberts Bartholow, A. M., M. D., Prof. of Physics, etc., Medical College of Ohio. New York: W. Wood & Co.

Diagnostic and Prescription Record. New York: W. Wood & Co.

Medical Communications, with the Proceedings of the Seventy-fourth Annual Convention of the Connecticut Medical Society held at New Haven, May 23d and 24th. 1866. New Haven: Tuttle, Morehouse & Taylor.

A Description of Certain Dry Processes in Photography, specially adapted to the use of the Tourist, etc. By Geo. Hemp, M. D;, Fellow of the Cambridge Philosophical Society. Pamphlet, pp. 84. London: J. W. Davies.

The Year Book of Pharmacy: a practical summary of Researches in Pharmacy, Materia Medica and Pharmaceutical Chemistry during the year 1865. Edited by Chas. H. Wood, F. C. S., and Chas. Sharp. Pamphlet, pp. 175. London: John Churchill & Sons.

Official Register of the Officers and Cadets of the Louisiana State Seminary of Learning and Military Academy near Alexandria. Session ending June 30, 1866.

Address delivered at the Commencement Exercises of the Louisiana State Seminary and Military Academy, on the 29th June, 1866. By Dr. Bartholomew Egan.

Report of the Société de Chirurgie, of Paris, on Artificial Limbs and Amputations. Translation published by B. Frank Palmer, L. L. D., Surgeon-Artist to the American Army and Navy, etc. Pamphlet.

On the Inhalation of Atomized Fluids; On the Treatment of Chronic Diseases of the Lungs by the Inhalation of Atomized Liquids; and *A New Mode of Treating Diseases of the Cavity of the Nose.* Collected from the British Medical Journals and published by Codman & Shurtleff, Boston. Pamphlet.

On Excision of the Superior Maxilla; Report of a Case, with Remarks on certain Tumors of this Bone. By Wm. R. Whitehead, M. D. (Univ. of Paris). Pamphlet, pp. 28. New York: John Medloe. 1866.

Transactions of the Twenty-first Annual Meeting of the Ohio State Medical Society. Held at Ohio White Sulphur Springs, July 19, 20 and 21, 1866.

THE NEW ORLEANS
Medical and Surgical Journal,

TO ITS

CORRESPONDENTS, SUBSCRIBERS, CONTRIBUTORS, ADVERTISERS, AND AGENTS.

GENERAL INFORMATION.

1.—Office at the Medical College, Common St., near Baronne St. Office Hours—10, A. M. to 12, M. The publication of this, the oldest medical journal in the South-west (suspended with the May No., 1861), was resumed in July, 1866, with No. 1 of Volume XIX. It is published every two months. Each volume contains about 1000 pages; and beginning with the July, ends with every May No. of the succeeding year.

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THE

New Orleans Medical & Surgical Journal.

JANUARY, 1867.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

Art. I.—ENDOSCOPY:

By Dr. Francis Richard Cruise, Dublin.

I BELIEVE it will scarcely be denied that one of the most essential characteristics and improvements of modern medicine consists in the *direct exploration of organs* for the elucidation of their physiology and pathology. This tendency to rest our knowledge upon physical rather than rational signs is by no means of recent date, although latterly, especially within the last half century, it has become more obvious and better appreciated. Glancing back over the history of the profession during that period, we notice how percussion, methodized by Avenbrugger, and popularized by Corvisart, seems but to have paved the way for Laennec's discovery of the immeasurable practical value of auscultation in diseases of the chest. Subsequently other portions of the body, lending themselves to exploration even more freely than the thoracic organs, have come in due course to be objects of interest and research with special observers, who from time to time have devised means and implements for their more satisfactory examination and study. Without delaying upon this point, I may quote, in illustration, the revival by Reaumier of the long-forgotten *speculum uteri;* also the *speculum*

auris, originated, I believe, by Newburg; the ophthalmoscope of Helmholts; the laryngoscope of Czermack; and though last, certainly not the least, the endoscope of Desormeaux.

Agreeably to the old adage that "Nought is new under the sun," as each addition to our means of diagnosis has been brought under the notice of the profession, claimants have sprung up to dispute the honor and credit of invention. Doubtless it would be very unprofitable at the present time to discuss at length the precise merits of the competitors in each case; therefore I shall pass by that question, merely observing, in order to justify the quotation of the above-mentioned names, that I have endeavored to associate with each method and instrument the name of that individual who has done most to demonstrate and extend its practical utility.

With respect to the endoscope in particular, I may observe that M. Desormeaux, in the introductory chapter of his recent valuable memoir, candidly acknowledges that the idea of an instrument capable of throwing light into deep cavities, such as the bladder and urinary passages, was not original with him. He accords to M. Segalas the merit of originating the thought, and alludes to his unsuccessful attempt, as well as to the fruitless labors in the same direction of the late Mr. Avery of London, and Dr. Hacken of Riga.

Considering the ability and industry with which M. Desormeaux has prosecuted the subject, it is a matter of surprise to me that important labors of others have escaped his cognizance. At any rate it is quite certain that M. Segalas was not the originator of endoscopy. Barrini of Frankfort invented his "light conductor" about the year 1806; and in 1824 (two years before Segalas' proposal), your celebrated countryman, Dr. J. D. Fisher of Boston, devised and actually used an instrument identical in principle and similar in construction with that at present recommended by Desormeaux. An ingenious auriscope, which was invented fully thirty years ago by Mr. Jordan of Manchester, resembles it also.

Despite the occasional attention paid to the subject during the last half century, for the most part no practical result appears to have followed, and the fate of the endoscope has heretofore been neglect, ridicule and oblivion. So far as I can discover, M. Desormeaux alone has been a marked exception. He has most indefatigably worked at endoscopy; and to him, undoubtedly, is due the credit of patiently toiling for more than fifteen years, until at last

he has accumulated a mass of facts so important and interesting that it is impossible any longer to ignore his labors and the value of this method of investigating and treating disease.

I shall not dwell on the history of my own efforts at endoscopy: suffice it to say that it has been a dream with me since I became a student of medicine, and a pursuit after which I have continually hankered. Years ago I tried to work with an apparatus similar to Desormeaux's, but finding the light indifferent I gave it up in despair, and only of late years resumed the study. Comparatively recently a modification of the illuminating portion of the instrument occurred to me; I forthwith carried it out, and thereby obtained as much light as I required for all practical purposes. Since then I have used the endoscope constantly, and have neglected no opportunity of extending my knowledge of it. Rendered distrustful of success by repeated failures, for months I worked in silence and in private, until I became familiar with its use and manipulation. Then, for the first time, I exhibited it to others. Subsequently, by the kind invitation of medical friends, I examined a variety of cases at many of the Dublin hospitals, and also in private. It is my pleasing duty to acknowledge gratefully the kindness and liberality with which my *confrères* have placed their cases at my disposal, and have thus multiplied the field of my experience.

The endoscope, at its birth, met with but little favor, and for many years was absolutely slighted and passed by. Barrani's instrument was condemned by the medical faculty in Vienna, early in the present century, most especially upon the ground of its deficient illuminating power. Fisher, Segalas, and others who attempted to follow up the study, found no better encouragement awaiting their labors. In fine, M. Desormeaux tells us how one of his teachers, unable to deny the reality of the instrument, merely asked him the question—"What use is it?" Yet the answer to that query conveys its whole worth, namely—"It enables us to see parts which, without its aid, are wholly beyond the reach of vision."

Were it needful to illustrate the usefulness of our senses in the diagnosis of disease, I might aptly quote here the apologue of a witty physician of the olden time, alluded to by D'Alembert. He describes Nature and Disease engaged in mortal combat; a blind man armed with a club—the Physician—comes in to settle the difference. At first he tries to make peace; failing in this, he lays about him at random. If he hits Disease, he slays it; if he hits

Nature, he kills the patient. Now I would ask whether the Genius of modern medicine, which in so many instances has stricken the scales from off the eyes of the physician, and bestowed upon him the mighty gift of vision, has not wrought the miracle of making the blind to see, by enabling him to strike to the point, and no longer at random?

Let us for a moment contrast the predicament of the physician called upon to treat a malady which it is possible for him to see, and one hidden from his view. For example, let us take a case of diseased eye, and one of diseased urethra. He will not content himself by calling the former an *ophthalmia* without ascertaining what structure is engaged, and wherefore. He will examine the lids, the conjunctiva, the cornea, sclerotic, anterior chamber, lens, and, if needs be, will take his ophthalmoscope and investigate the vitreous humor and retina. It is needless to say how much information he may obtain from this simple inspection, both as to the seat of the disease and as to its nature—whether traumatic, catarrhal, arthritic, syphilitic, scrofulous, or other. His correct diagnosis lays the foundation for a truthful prognosis and rational treatment. What, in contrast, is his position with respect to an ordinary case of gleet? In many, perhaps in most, instances, he can only guess out by uncertain symptoms and unreliable antecedent history, whether the discharge arises from simple catarrh, from chronic inflammation, from relaxed mucous membrane, from syphilitic ulceration, from herpetic excoriations, from a granular condition of a segment of the canal, from disease of the prostrate, and so on. In his uncertainty his treatment must of necessity be empirical and his prognosis unreliable, because he can neither tell the nature of the disease, whether it be communicable or not, nor can he foresee whether it will be harmless in its results or likely to lay the foundation of organic constriction. The endoscope, however, alters the case materially, and for the better. By its aid the urethra can be seen and minutely examined from its orifice to the neck of the bladder, each single speck of disease ocularly demonstrated, and, if need be, subjected to precise local treatment.

The utility of the endoscope is not, however, confined to the diagnosis and treatment of diseases of the urethra—far otherwise. There is no portion of the human body, into which a straight tube can be introduced, in which it will not be found of service. With it the interior of the bladder may be thoroughly investigated; tumors,

ulcerations and sacculi recognized; calculi examined, and information gained as to their size, figure, number, position, whether encysted or loose, and so on. The rectum, beyond the reach of the finger and speculum, can be searched for ulcerations, constrictions, tumors, etc. The cavity of the uterus can be demonstrated; so also the auditory meatus, nasal fossæ, pharynx, larynx and œsophagus. Likewise wounds, especially those suspected to contain foreign bodies, abscesses, the cavity of the ovarian cysts after tapping, and so on. I have been enabled by the endoscope to obtain so clear a view of the interior of the uterus that I am satisfied it will prove most useful for the diagnosis of small polypi, granular and follicular ulcerations, and other affections, which at present are subjects of conjecture rather than positive knowledge.

When first I brought my endoscope under the notice of the profession, it was looked upon with very little favor. Nearly all doubted its practical utility, and many openly ridiculed it as a toy. The general opinion is now altered. Amongst its advocates and warmest partisans I can enumerate the most eminent members of the profession in various portions of the world, who from day to day are adding to the already ample stock of evidence in favor of its incalculable practical usefulness.

On the present occasion I shall not further trespass on your valuable space, but hope at no distant period to resume the subject—to explain the construction of my endoscope and its appliances, and to illustrate its efficiency by the details of cases in which it has procured for me and others important information, which, without its assistance, must have been wholly unattainable.

[*To be continued.*]

Art. II.—M. MAISONNEUVE'S OPERATION FOR FISTULA IN ANO: By Dr. R. R. Good, Paris.

On the simplicity of this operation, as adopted by M. Maisonneuve, the distinguished surgeon at the *Hotel Dieu*, the improvement of his instrument and the satisfactory results obtained, I wish to say a few words. But, before entering upon the subject, it may not be uninteresting to consider what is generally understood by a *fistula in ano*, the mechanism of its production, as well as an appreciation

of the different methods resorted to by surgeons, in order to bring about a cicatrization of the fistulous passages in the anal region.

First, what do we understand by a *fistula*, in general terms? It is an abscess which, after being opened, communicates with the external world, or with a cavity, or with both simultaneously, and which does not close itself. There can be many causes which prevent the occlusion of an abscess; and whether here brought about by idiopathic suppuration of the cellular tissue contained in the ischio-rectal fossa, or whether the result of an alteration of the coats of the intestine, it is not my purpose to determine: certain it is that abscesses in this region are very often, and I might say nearly always, followed by a fistula. The reason why the walls of an open abscess in this region do not come in contact, and the consequent tendency to non-cicatrization, find their explanation in the anatomical disposition of the parts. The *levator ani*, taking its fixed insertion around the superior strait of the pelvis on the one hand, and around the inferior extremity of the rectum on the other, tends to draw the external walls of the abscess outwards and upwards; whereas the internal wall, being carried inwards by the continued contractions of the annular fibres of the *sphincter ani* muscle, both walls of the abscess are in this manner kept apart, and can not agglutinate or heal, unless the cellular tissue reproduces itself and fills up the void, which occurs very seldom.

Many are the remedies which have been employed, in order to remedy this evil. Of these the most are absolutely useless; others are difficult, and there remains but one which completely fills the necessary indication—I mean the knife—although this is sometimes accompanied by accidents; and it is this danger which M. Maisonneuve proposes to avoid by means of his operation, which is an improvement upon M. Chassaignac's "*écrasement linéaire.*"

I will rapidly pass over the different methods which have been used by surgeons, as M. Maisonneuve is accustomed to recite them in his clinical lectures:

Injections of Iodine, for instance, can only be employed with hope of success when the fistula is located quite a distance from the anus, and situated in that region which M. Richet, in his excellent *Anatomie Médico-Chirurgicale*, calls the inferior recto-pelvic space, with the assistance of pressure from within outwards and from above downwards, effected by plugging the rectum.

Caustics applied directly to the walls of the fistula are not only

slow and uncertain remedies, but they subject the patient to long and severe suffering and great loss of tissue. M. Amussat, in order to perfect this method, invented an instrument called the forceps of Amussat, which holds the caustic in direct contact with the walls of the fistula. I believe the use of this instrument is now abandoned altogether.

Ligatures.—This is certainly the method which has given the most satisfactory results, and is perhaps the oldest, as we find mention of it in the works of Hippocrates, who is said to have used a waxed thread for the purpose. During the last century this mode of operating was again taken up by Foubert, and more recently by M. Mayor, of Lausanne, who employs a knot which he tightens at liberty, until the parts are severed.

Incisions.—"Every *fistula in ano*," says Professor Velpeau, "necessitates the application of the knife." We recognize in these words the great and practical mind of the illustrious surgeon of *La Charité*. It is the incision extending from the internal wall of the fistula to, and comprising the rectum, which alone can annihilate the traction of the annular fibres of the *sphincter ani* muscle and permit a perfect juxtaposition and consequent cicatrization of the parts. This operation, however, is not without danger, as I will endeavor to prove in describing that of M. Maisonneuve.

Instead of using M. Chassaignac's *écraseur*, an instrument well known to every surgeon, a simple thread of wire is substituted for the chain ; and herein we have the great advantage over the old instrument. For while the latter, on account of the interstices existing between each link, saws and cuts the tissues unequally, thereby sometimes exposing the parts to hæmorrhage, the *écraseur* of M. Maisonneuve takes in and crushes with equal force and pressure all the tissues which are destined to be divided; and the wound, instead of having a torn and lacerated appearance, looks smooth and perfectly closed, so to speak. The articulated chain of Chassaignac is in its vertical aspect moveable, even too much so ; laterally, however, it is absolutely inflexible, and hence the great difficulty of introducing it into sinuous passages. On the other hand, the simple thread of wire may be bent and moulded into any shape, and directed at will wherever the hand of the surgeon may see proper to place it. This with the chain is impossible, especially if the internal orifice of the fistula is situated very high up. The superiority of the instru-

ment is easily demonstrated, and no one can fail to see the importance of the following facts : There is equal pressure without laceration, and great facility of management for the surgeon. In operations in a cavity, as for the amputation of the neck of the uterus for instance, though I am departing a little from the original subject, nothing is more easy than to give to the wire the shape and size of the tumor which it is to seize. This is something for which again the chain, on account of its lateral rigidity, can only be employed with difficulty.

The operative process of M. Maisonneuve is as follows : The patient is placed upon the side in which the fistula is located, while an assistant elevates the opposite buttock. One of the extremities of the wire is passed into the external orifice of the fistula, and brought out with the finger of the surgeon, previously introduced by the rectum (the grooved director is scarcely ever necessary). This done, the two extremities of the wire are then attached to the two branches of the *écraseur*, and by a rapid turning of the screw the tissues are quickly bound and crushed by pressure. This operation is of the simplest nature, and since I have followed the clinics of the skillful surgeon of the *Hotel Dieu*, I have seen him perform it in an incredibly short time.

Let me sum up the advantages of this operation : (1) The tissues are crushed without laceration ; consequently the orifices of vessels are not left open, and the danger of hæmorrhage, phlebitis and purulent infection is avoided. These evils often occur when the knife or chain is used, from the rapid absorption by the open mouths of the hæmorrhoidal plexus of veins. (2) As in all contused wounds cicatrization takes place slowly, the surgeon is not compelled to pay such constant attention to his patient as when the operation has been performed with the knife ; nor is it necessary to keep the wound open with tents, to prevent a too rapid union.

The dressing simply consists of charpie saturated in a solution of phenic acid (one part to one hundred), repeated once daily. The instrument is small, convenient and ready of application. For larger applications, such as for the extirpation of tumors of large size, a plaited cord of wire is substituted for the single strand, which retains its flexibility with its increase of strength.

Art. III.—ON DIET IN CHRONIC INFLAMMATIONS:

By O. P. Bryce, M. D., *Medical Superintendent of the Alabama Insane Hospital, Tuscaloosa.*

WITHIN the last half century the supposed radical change in type of disease has seemed to justify the substitution of the stimulating for the antiphlogistic treatment of nearly all inflammatory disorders. Whether such change in type has really occurred or not, and whether the Brunonian philosophy of medicine, so immensely popular in the present day, be founded upon correct physiological principles, it is not the object of this present paper to discuss. I desire merely to present a few interesting and instructive clinical facts, apparently in opposition to the favorite theory.

The cases recorded are from a large number in whom the same treatment has been successfully pursued, and are selected, not because of better results, but chiefly with reference to the intelligence and probity of the patients, and the certainty that the histories, in their minutest details, are strictly correct.

Case 1.—Mr. P., an intelligent gentleman, æt. 38; a resident of Central Alabama; a large planter, but otherwise engaged in sedentary pursuits; of medium size; spare habit; eyes, hair and complexion dark; of a stern, morose and gloomy aspect, with other evidences of the melancholic temperament. Early in the fall of 1859, after exposure, he contracted a severe form of chronic laryngitis, which resisted the usual remedies, and threatened, after a few months, very dangerous complications. The voice, breathing, expectoration and deglutition became gradually more or less affected; and under the apprehension that pulmonary disease would eventually ensue, he was advised, in December of the same year, to consult Dr. Horace Green, of New York city. Under Dr. Green's treatment, which consisted in local applications of nitrate of silver to the diseased parts, together with alterative doses of mercury, iodide of potassium and sarsaparilla, generous diet, suitable clothing, and other hygienic precautions, there was in a few weeks a very perceptible improvement. The cure, however, did not progress, after two months of the above treatment, beyond an amelioration of the most prominent symptoms; and the patient was allowed to return home with directions to pursue pretty much the same course of medicine, especially the occasional topical application of the nitrate of silver. This he faithfully did for two months longer, without further improvement.

About this time the idea of submitting to low diet, suggested by occasionally noticeable improvement in the past stages of the disease after unavoidable abstinence, occurred to Mr. P., and he resolved, as a *dernier ressort*, strictly to enforce it. He discarded physic, constitutional and local, and confined himself simply to bread and milk—nothing else—in as large quantities, however, as his appetite demanded. Under this regimen his disease, after resisting up to a certain limit the most approved medical treatment more than six months, began almost instantly and rapidly to improve. At the end of six weeks, to the consternation of his friends, he had lost about fifteen pounds from his already light weight, and in two months every trace of disease had disappeared. He gradually resumed his ordinary food, and in July, 1860, when I first saw him and learned his history, he was heavier and in better health than he had ever been before.

The history of this remarkable case, coming from a source so intelligent and reliable, gave the subject an importance which I had never before attached to it, and I determined, when the proper opportunities afforded, to give it further practical consideration. A case of somewhat different character, but not less interesting, was soon presented, and is as follows :

Case 2.—Mr. S., æt. 45 ; married ; of the nervo-choleric temperament ; a native and resident of South Carolina, and the cashier of a large bank ; of medium size and weight ; temperate habits ; never very robust, but usually enjoyed good health. From the character of his occupation, he spent most of the day standing at his desk. For an affection of the bladder, which had begun almost imperceptibly and grew worse so gradually that it was not seriously noticed for several months, he at last sought medical advice. The symptoms at this time were too frequent micturition, attended with slight pain before and after each act ; characteristic appearance of the urine ; slight debility ; emaciation ; cold feet and loss of appetite. The case was properly recognized as chronic cystitis, and treated according to the indications in the usual manner. I saw the patient in the fall of 1860, six months after he began the above treatment, and nearly a year, perhaps, after the disease was first noticed. At this time he had abandoned all specific treatment, which had never been beneficial, and was using daily large quantities of camphorated Dover's powder, to relieve pain. The attendant symptoms above mentioned were all increased, especially the pain and abnormal

appearance of the urine. As careful explorations of the bladder and analyses of the urine had more than once been made, with a view to correct pathology and the intelligent administration of medicine, and the usual remedies had been exhausted without avail, I resolved to test the efficacy of low diet, unaided by medicine of any kind. I directed him to live exclusively on bread and milk, and to lay aside the opiate powder as soon as possible. Mr. S. was a man of nerve and self-denial, and, though already emaciated, expressed himself willing to submit to any treatment that promised relief. From this moment the disease was rapidly subdued; he very shortly discontinued the Dover's powder; and in three months, after further loss in weight, but with much improved general appearance and vigor, declared himself entirely well. I should have mentioned that, on taking the case, I ordered the discontinuance of a cold foot bath, which the patient had been in the habit of taking every morning. In pursuing the treatment indicated, Mr. S., on two or three occasions, when away from home, either from delicacy or inability to procure his accustomed diet of bread and milk, was forced to resort to other articles of food; and though he would select the lightest and what he supposed to be the least stimulating, a slight relapse was invariably the result. A cup of coffee and a little butter, he assured me, were noticeable in their effects. I saw Mr. S. two years after his recovery, and there had been no return of his disease, and his health was uniformly good.

Case 3.—Mr. D., of Alabama; a professor in one of our popular colleges; æt. 42; unmarried; nervo-sanguineous temperament; of middle height and weight; has been a teacher since early manhood, and consequently of sedentary habits; is a good liver, and takes an occasional glass of wine. For several years has been troubled with irritable bladder, brought on, he supposes, by neglect to empty the viscus at the proper times. The symptoms present in the case are uneasy sensations rather than actual pain, with almost constant desire to empty the bladder; there seems to be no constitutional disturbance nor secretion of vitiated mucus. Under examination the urine presented usually an alkaline reaction, with deposits of the phosphates. This patient had frequently, in the course of his disease, been under medical treatment; indeed, he generally consulted every new doctor who he thought might throw light upon his disease, and it may be inferred that he had been subjected to every known and approved treatment.

With some misgiving as to the reception with which my suggestions were likely to meet in this case, I nevertheless advised the bread and milk diet, to the exclusion of all other articles of food, hoping that such a course might modify the properties of the urine, even if there was no inflammatory action to combat. For reasons over which the patient declared he had no control, and from a weakness for good living into which his peculiar temperament beguiled him, it was with great difficulty he succeeded, even for a short time, in carrying out the treatment. It was remarkable and instructive, however, to witness the changes in symptoms closely corresponding with the vacillations of the patient. The bladder may have been said to register most unerringly the quality of the ailment. The patient soon passed from under my observation, and since has written me repeatedly for advice and to express his conviction of the efficacy of the treatment, and his determination to give it a fair trial. His last letter announced his success in the latter feat, and a consequent rapid improvement, and wound up with a postscript asking if he might not indulge, without detriment, in stewed fruit and potatoes.

This case elicits no interest in its final results, for I consider them entirely negative, and neither claim nor expect that a cure will ever be effected. I think it not unlikely that permanent diminution in the capacity of the bladder has already resulted in this case. As an evidence of the control which low diet exerts upon specific irritability, where no organic lesion is detected, and as showing the difficulties to be encountered in enforcing so strict a regimen, even among intelligent patients, the facts are doubly instructive.

The following case, in many respects similar to the one just described, is of recent date, and occurred to a patient under my care in this hospital :

Case 4.—Mr. N., æt. 28 ; lymphatic temperament ; full height and heavy weight ; of good and strictly temperate habits ; has always enjoyed vigorous health ; has an enormous appetite and equally good digestion and active assimilation ; engaged in light out-door work. For six months the patient had been suffering from irritable bladder, unattended with constitutional disturbance or morbid appearances of the urine. He experienced no pain, if he relieved the bladder promptly, which he did every half hour during the day and very frequently at night. Complained occasionally of headache, and was drowsy all day. After strict inquiry and examination, nothing like ascarides, hæmorrhoids or usual complications was discovered.

His pulse was very full, forcible and perhaps a little accelerated. He was ordered to be bled from the arm to approaching syncope and placed upon low diet. A few ounces of blood, aided by dread of the lancet, sufficed to accomplish the first indication, and was followed by a healthy modification of the quality of the pulse, which was never lost during the balance of the treatment. He was kept exclusively on farinacious food, with occasionally milk and vegetables in moderate quantities. Improvement began to be manifested almost immediately—I might say instantaneously. The irritability rapidly subsided, and in less than one month the calls to empty the bladder were reduced from fifty to five times during the day. His loss in flesh was scarcely perceptible, and the headache and incessant drowsiness had entirely left him.

It was my intention to illustrate this subject with other interesting cases, showing the remedial effects of low diet in chronic inflammatory disorders, but I am restrained from fear of extending the paper beyond reasonable limits. I have notes extending back several years, embracing cases of chronic inflammatory derangements dependent upon indigestion, together with diseases of the eye, rheumatism, ulcerous and other affections of the skin, and other instances of renal and cystitic disorders, all referable to the same pathology, and yielding good results under the treatment indicated in the foregoing. The principles involved, however, in every instance are identically the same, and, when fairly understood, may be presumed to interpret beforehand the results in any given case. A correct knowledge of the laws of sympathy, in their relations to the properties of life, underlie the successful treatment of disease, especially in the department under consideration. The sympathies of individual tissues, in their relation to each other in compound organs and with entire organs, is an enchanting study to the enlightened physiologist, and affords to the pathologist the only intelligible *rationale* of disease. As throwing light upon the first case recorded above, we find it stated by a profound medical philosopher, that "morbid states of the stomach produce a sense of irritation in the throat; and nothing is more common than obstinate inflamation of the mucous tissue of the fauces from gastric derangements which are not inflammatory. In all these cases, remote and continuous sympathies are more or less in combined operation. An ignorance of the laws which govern in such instances, leads many physicians to apply their remedies to the parts where the sensation is felt, or the inflamation appears."

Compound organs generally sympathize most readily with each other in proportion to the relations of certain functions which they may perform, and to the importance of those functions; the morbific relations, however, between the alimentary canal and other organs have a more extended range, perhaps, than any other. Wide, however, as the sympathies between the stomach and other organs extend, it seems to be true that these relations are more intimate in proportion as the component tissues and the functions of the organs in question are more similar. For example, these sympathies are better marked between the alimentary canal and the urinary and respiratory systems, than between the former and the organs of special sense, or even the brain; and for this reason we understand why dietetic treatment of diseases of the pulmonary mucus membrane, and of cystitis, is more rational than in iritis and meningitis.

It must not be inferred from this, however, that the sympathetic relations between the brain and the eye, especially in acute, sub-acute or even chronic forms of disease, are not referable to the same law: it is only intended to demonstrate that these relations are not equally intimate. On the contrary, certain forms of acute and chronic mania, especially when connected with gastric derangements —and this, by the way, is the most common complication—are amenable only to low diet, followed by sedatives, opiates and tonics. It constantly occurs in my practice, with cases in which this order of treatment has been reversed, or the matter of diet overlooked, that restoration has been proportionately prolonged.

One word, before closing, on the form of diet in the cases under consideration. There seems to be a peculiarly bland and non-stimulating property in milk, which adapts it to the morbid conditions above described, and my habit is to allow it, with plain light-bread, to be taken *ad libitum*. The amount of emaciation attending its use, to the exclusion of other articles of food, corresponds in a great measure with the previous habits of the patient. Generally it is very noticeable, but frequently there is little or none, and, when present, it is more than compensated for by the improved tone and vigor of the constitution. To prove its power of sustenance, there is a melancholic patient, now under my observation, who would take nothing else for nearly two months, and was fed most of the time with the stomach pump, under which treatment he actually gained in weight.

Apropos to the sustaining properties of milk in low forms of

disease, I have before me an article from the pen of Dr. Gairdner, on typhus fever, published in a recent number of the *Lancet*, in which he says "you must feed your patients, and you must feed them chiefly on milk. I know of no other food that can be depended on. To give wine, whisky and beef tea, while withholding milk, is simply, in my opinion, to destroy the patient."

Art. IV.—LOCAL ANÆSTHESIA:

By J. F. Knight, D. D. S., Marion, Ala.

ALMOST every surgeon and dentist is fully aware of the increasing tendency on the part of patients to request the administration of chloroform for the most trivial operations, and in many cases positively to refuse to submit unless the wish is gratified. The impunity with which this powerful anæsthetic was administered during the late war is the almost invariable argument used by such persons in its favor, they being forgetful, or perhaps not knowing, the very different circumstances under which its administration took place. It is not in my province to mention such at length. I will simply, therefore, allude to the fact that, generally speaking, those men who remained long enough in active service to need the surgeon's knife, were men of comparatively sound constitution and free from all organic disease.

My experience has been entirely confined to dental operations. From the commencement of my practice I have tried in every way to avoid chloroform, because I believe that a dentist is seldom, or never, justified in giving it, and should evil follow its administration, he can at no time excuse himself on the ground that it was done to save life.

For many years previous to seeing a notice of Dr. Richardson's invention, I used a saturated solution of camphor in ether, and in many cases with very good results, particularly so on the aged or persons of weak constitution and feeble circulation. I applied it with a small sponge around the tooth to be extracted, for a minute or thereabout, and it certainly did produce a degree of local insensibility followed by no unpleasant results.

In the April number of the *Dental Cosmos* I first saw a notice of Dr. Richardson's "ether spray;" it at once suggested itself to me

as the very thing needed in the dental profession, and I immediately wrote to Dr. S. S. White, of Philadelphia, to send me an instrument as soon as he imported any. In the early part of July I received the instrument, together with some pure concentrated ether. My first experiment was with the thermometer, using a single jet at about an inch and a half distant, and playing directly on the bulb. The thermometer was standing at the time at 92°, and was redneed in a few seconds to 20° below the freezing point. The mercury then rapidly ascended to 32°, where it remained. On examining the bulb I found it slightly coated with ice, caused, doubtless, by the condensed moisture from the atmosphere collecting upon it. This film prevented the spray from acting on the mercury and caused its rise. I next took a piece of a broken syphon, five-eighths of an inch in diameter, much thicker than a common test-tube, stopped up one end with a cork, poured in water an inch and a half in height, and threw the spray upon the tube for about two minutes. The result was a cylinder of ice, the sixteenth of an inch in thickness. This was produced under disadvantageous circumstances, as I had to revolve the tube, to bring its various sides in contact with the spray. My own hand was next experimented on, by throwing the spray on the left little finger until it was perfectly bleached. I pinched it with a blunt instrument, to ascertain if any sensibility remained. I could scarcely detect any, certainly no pain. The same pinching on any part not frozen produced very evident pain. Neither on its first application, nor as the parts became restored to sensibility, was there any unpleasant feeling, such as usually attends extreme cold.

With this knowledge of its effects, I determined to use it on the month, and have now done so in some fifteen or more operations, in some cases with perfect success, and in none with less than partial. Where the dental pulp was exposed, the application gave extreme pain, and I found it necessary to protect the nerve with a plug of cotton covered with wax, and found it all that was needed. In throwing the spray on *dentes sapientiæ*, I found a great difficulty to arise from the suffocation produced by the fumes of the ether passing into the throat, and the great accumulation of saliva. This, I think, can, in most cases, be combatted by using a piece of what is known in dentistry as *coffer-dam* india rubber, in such a way as to protect the throat and allow the dripping from the spray to flow out of the mouth. It is better than a napkin, because, in addition to occupying less space, it is perfectly impervious to the ether.

I think the effect is produced as much by the narcotic power of the ether as by the intense cold. The vitality of the part being paralyzed or diminished by the cold makes it more susceptible to the direct action of the ether, and the two combined produce a sufficient degree of local anæsthesia for most minor operations.

Rapid manipulation is absolutely necessary, because the insensibility produced is very transitory. In some cases this presents much difficulty, for instance, where fangs deeply buried in the gums have to be removed, far back in the mouth. In such cases it is frequently impossible to get an immediate hold, and time is consumed sufficient to produce a partial reaction. Near the front of the mouth an assistant can continue a gentle flow of spray, enough simply to retain the amount of insensibility already obtained.

Another obstacle which arises, is with the patient. There are many who fear pain to such a degree that the anticipation of it renders them perfectly unreasonable, although, generally speaking, they may be sensible people. With persons of this class, all things may be made ready for the operation, when they will deliberately shut their mouths and say they cannot endure it. To extract a tooth with the mouth closed is of course impossible; during the delay the effect has passed away, and when you finally succeed in getting the mouth open and extracting the tooth, to use their own language, "it hurts." Such is not a failure of the anæsthetic.

Others do not know what pain is. They are frightened at the idea of it, and if a sensation is produced, they say that they are being fearfully hurt, when it is really quite a mistake. For example, a few weeks since a youth called on me, wanting some teeth extracted, and stipulating that the spray should be used. He was white and trembling with fear. I applied the spray and removed two teeth. He said it almost killed him, and that the ether did no good. Having some doubts as to the extent of his sufferings, and another tooth needing extraction, I proposed to do so without the spray. At the first touch of a sharp lancet, he cried out, "Oh! doctor, stop, stop; yes, it does do good; put on some more."

In the application of the spray, I have not found it always necessary to use it to the same extent. In persons of vigorous health and hard, firm gums, I throw it on from about an inch distant, and for nearly a minute; while with those of spongy and diseased gums and feeble constitution, I use it for a less time and from a greater distance.

The apparatus which I have is worked by the common india-rubber

hand-bellows. A more powerful one would be, I think, much better, and if worked by the foot would give an operator much more command of the instrument.

The ether spray is a most valuable addition to the various modes now in use for the relief of pain; all, generally speaking, that a dentist has need for in his practice; and, moreover, one that, in the hands of all well-informed practitioners, can be used with entire safety.

The styptic and caustic sprays, also invented by Dr. Richardson, will be, doubtless, of most valuable service to the general surgeon in, at least, all minor operations.

I have made no experiments with rhigolene, its low boiling point rendering it unsuitable to our climate.

Since writing the above, I have seen, in the *Dental Cosmos* for September, an extract from an address by Dr. Richardson, in which he says that he believes the effect of his ether apparatus was probably entirely due to the cold generated by the rapid evaporation of the ether.

Clinical and Hospital Record.

ART. V.—CASE OF LITHOTRITY:

By W. B. DODSON, M. D., New Orleans.

MR. G., æt. about 53 years, born in Italy, followed the seas for a time, and settled in New Orleans, where he has resided for about twenty-seven years. Has been accustomed to the use of wine, and is a pretty good feeder. Has suffered much from pain in the loins, irritation of the bladder, difficulty in urinating, etc., about two years. Health deteriorated; pain and suffering increased; and eventually passing unusually large quantities of lithic acid sand with numerous small calculi, from the size of small shot to that of a pea, several of which were formed of numerous small ones aggregated or stuck together, not unlike the seeds of a blackberry, giving them a very peculiar appearance. The stream of urine, which was very small, the patient said "was often suddenly checked, as if a substance had rolled before the door." From the symptoms manifested, it was quite evident that a calculus of considerable size had formed in the bladder, and the smallness of the stream was caused by a stricture of the urethra.

In the first attempt to sound, a stricture was discovered about two and a half inches from the meatus, and two inches in length. Only a small sized sound could be passed into the bladder, with which a satisfactory exploration could not be made. The sound came in contact with a small gravel or two, but the large calculus kept out of the way. The stricture was to some extent dilated, a second exploration made with a suitable sound, and a calculuus touched, supposed to be of the size of a large walnut without the shuck. The stricture being removed and the general health of the patient very much improved, the case was considered not an unfavorable one for lithotrity, which was attempted on the 12th of June, 1863, but failed on account of the natural smallness of the urethra, the large size of the instrument and the bungling manner in which it was made. After modifying its size and shape, the second attempt was made, the patient being under the influence of chloroform. The bladder was first emptied, the patient placed upon a firm bed, the hips a little elevated, about six ounces of warm water injected into the bladder, and chloroform administered by a competent assistant until the patient was sufficiently under its influence. The instrument was then carefully passed into the bladder and pressed cautiously against the posterior surface, when, the stone being free, it rolled against the instrument, the side on which it lay being readily recognized. The instrument was then opened and partially closed, with great care, until the stone was firmly within its grasp ; the instrument was withdrawn a little, and sufficient force applied to break the stone ; but the water from the bladder escaping along the groove of the instrument made it necessary to withdraw it without attempting to crush the fragments. The third operation, after the lapse of a few days, was entirely successful. The fragments were pretty thoroughly crushed, and great numbers escaped within the next eight and forty hours. Several fragments lodged in the urethra, but were readily removed after the lapse of sufficient time for the development of mucus around them, which required but a short time—from twelve to twenty-four hours. If the escape of urine be not too much obstructed by the fragments, the surgeon can assure his patient that a few hours' delay in removing it will subject him to no special danger.

The patient's suffering nearly ceased from the time the stone was first broken. Upwards of four hundred fragments were collected (many, of course, were lost), several of so large a size that their escape through the urethra seemed almost incredible. No untoward symp-

toms occurred in this patient during the progress of treatment, and no indications of a recurrence of the complaint have since been manifested.

In this case limestone water could not have been the predisposing nor the proximate cause of the formation of the calculus, as the patient had been a resident of New Orleans for twenty-seven consecutive years.

ART. VI.---INTRA-UTERNE STRANGULATION:

Death of a child in utero from a knot in the funis. By C. H MASTIN, M. D., Mobile, Ala.

AT mid-day, on the 24th of August, 1866, I was requested to see E. F., a colored woman, aged 19 years, then in labor with her first child. Her pains began at dark the evening before, but from about midnight they had diminished, until about 10 o'clock, A. M., when they ceased altogether, and she speedily passed into a stupor, followed by active convulsions.

Upon examination, I found the head with vertex presentation, in the first position of Baudelocque, fully engaged in superior strait. From the violent convulsion under which she was fast sinking, I saw no time was to be lost in her delivery, and accordingly, having placed her fully under the influence of chloroform, I easily effected her delivery with Hodge's forceps. The head being delivered, I at once saw that the child had been dead most probably for some days, notwithstanding the assertion that she had distinctly felt its movements only the day before. The integuments were softened, the cuticle slipped easily from the skin, and the cranial bones were loose and readily compressed under the forceps. After the delievery and upon inspection of the cord, I found *a firm hard knot tied in the funis!* The cord was of unusual length, but in other respects healthy.

During the entire period of gestation she had complained a great deal of the excessive action of the child, and had been frequently threatened with abortion; it was, however, controlled by the use of opiates, rest, etc. She was within two weeks of her full term, and it is certain that the death of the child had been caused by this strangulation of the chord, with arrest of circulation from the mother to the child, inducing the premature parturition.

When the head passed the vulva, I examined carefully, and found no fold of the cord around the neck; and not until after the full delivery, and when the placenta was about being thrown off, did I notice the accident herein described.

I am uninformed as to whether this accident has been before observed, not having been able to refer to any published notice of the same. I understand that a similar case had presented itself in the practice of Dr. Gaillard Thomas, and that he has written an article upon that subject: if so, I have been unable to obtain it.

Under the use of chloroform, with the abstraction of blood from the head and with the ice-cap, my patient speedily recovered, and is now well, with anxious hopes of being in due course of time a mother. It is to be hoped, however, that she will be more fortunate in her next utero-gestation, and that her offspring may not, as in this instance, be guilty of an intra-uterine acrobatic suicide.

Art. VII.—A REMARKABLE CASE OF DROPSY:

By E. Peacock, M. D., Knoxville, Crawford county, Ga.

MRS. Lucretia Emfinger, aged 48 years and 8 months, was attacked with ascites in the year 1855, and was treated by other physicians until early in 1856. I was then called to see her, and upon careful examination found the abdomen very much distended with water. General health impaired; flesh soft and flabby, but not filled with water; confined to bed the most of her time, but cheerful; some pain when she moved in bed, or when necessity compelled her to get up.

After making inquiry about her former treatment and obtaining all possible information on this subject, I concluded to try the action of emetics, and did so in the largest doses I thought her strength would bear. I called for a glass of warm water, added five grains of tartar emetic, and gave one fourth every fifteen minutes until violent emesis was produced. After several efforts at vomiting, I gave her a wine-glass full of brandy and water, which produced several drastic operations from the bowels. With thirty drops of tinct. opii the purging from the bowels was checked. This course of treatment caused a considerable shock to the system, which was followed up with the ordinary treatment for such cases—calomel, opium, squills and digitalis—for three weeks, without any apparent

benefit to the patient, in the hope that ptyalism would take place. The bowels were kept in a soluble condition, but no active purgative was administered. I then substituted the emetic, as above stated, for three mornings in succession, with the same effects, following this in six hours after with a table-spoonful of salts and cream of tartar. Each purgative brought away large watery operations. At the end of the third day my patient was very much exhausted and could not sit up in bed; and finding the water accumulating in the abdomen as fast as the drastic operations brought it away, I put her on the following treatment: syrup of buchu one table-spoonful three times a day, with five grains of iodide of potassium. The iodide of potassium was increased one grain each day, until I ran it up to thirty grains three times a day, before it would cause any swimming of the head. I then ordered her to fall back to twenty grains three times a day, and this caused as much of the unpleasant effects as thirty grains. I afterwards reduced the dose to ten grains three times a day, and gave the mur. tinct. ferri between the times of giving the iodide of potassium, in twenty drop doses, increasing one drop each dose until she ran it up to sixty drops three times a day, without any unpleasant results. This course I followed up for two months, increasing and decreasing each of the above remedies as I thought the circumstances of the case required, with an occasional use of a drastic purgative, as her strength would admit.

I would here remark that her circulation was tolerably good, never reaching over ninety beats per minute, and there was no fever at any time during my attendance upon her. Although she had never borne any children, her catamenial habits were regular, and from her own account had been ever since they were first established. The water in the abdomen increased gradually all this time, and under all the heroic treatment I could give her.

After deliberation with her and her husband, I sent for Dr. Matthews, of Fort Valley, Georgia, and upon consultation we agreed to perform the operation of *paracentesis abdominalis*. The many-tailed bandage was prepared, about fifteen inches wide, the tails crossed behind her with two strong hands to pull at each end of them, and a hole cut in front of the bandage large enough to perform the operation. Half way between the umbilicus and symphisis pubis, on the median line, a small incision was made with a lancet, a trocar and canula introduced, and twenty-three pints of water taken from her. The operation was performed in a sitting posture; and when

she was put to bed, the ordinary bandage was applied around the abdomen. In three days Mrs. E. was up and attending to her household business, a thing she had not been able to do before for five months.

The same treatment as above stated was agreed upon (iodide of potassium, syrup. buchu and mur. tinct. ferri), and it was begun immediately, with the hope that, after the water and pressure were taken off the viscera, the remedies would have some effect upon the system ; but we were doomed to disappointment. No ground was gained, and no good accomplished, after pushing our remedies to their utmost extent—no change in the urinary secretion, and no increase in the amount discharged. The abdomen continued to fill up with water, in spite of all our efforts to prevent it, and the second operation had to be performed. This I did, using the same bandage as before, without making an incision with the lancet, but plunging the trocar and canula through the skin, muscles and fascia. There was no pain nor any trouble, and thirty-three pints of water were drawn off. All this accumulated from the 25th March, 1856, to the 14th July of the same year.

From the time I was first called to her, I put her upon a rigid diet; and a small amount of solid food, only enough to keep soul and body together, was allowed. After the second operation had to be resorted to, I gave her up as hopeless, so far as the benefit of remedies was concerned, and told her the same. I then allowed her to eat any thing she desired, and watched the result of this course. I observed no difference, so far as the effects of any remedy or treatment was concerned, but found her general health to improve, with a gradual recuperation of strength. After trying every remedy I could think or hear of, I abandoned all treatment except the trocar and canula. She was compelled to undergo the operation, from March 25th, 1856, to November 22d, 1865 (nine years and eight months), one hundred and five times, in which 6912 pints, 864 gallons, 27 barrels, or 13 hogsheads of water were taken from the abdomen of one woman. To save the trouble of commenting on each operation, I append a list, giving the date, with the number of pints, etc., which the reader can examine at his leisure.

No.	*Date.*	*Pints.*	*No.*	*Date.*	*Pints.*
1	March 25, 1856	23	5	Jan. 11, 1857	50
2	July 14, "	33	6	March 8, "	55
3	Sept. 19, "	43	7	April 30, "	56
4	Nov. 14, "	45	8	July 2, "	55

No	Date.	Pints.	No.	Date	Pints.
9	Sept. 2, 1857	56	58	Oct. 11, 1862	78
10	Nov. 1, "	55	59	Nov. 8, "	78
11	Dec. 29, "	59	60	Dec. 6, "	81
12	Feb. 21, 1858	56	61	Jan. 3, 1863	63
13	April 18, "	57	62	Jan. 29, "	78
14	June 15, "	72	63	Feb. 19, "	72
15	August 7, "	60	64	Mar. 15, "	66
16	Oct. 1, "	60	65	April 4, "	67
17	Nov. 20, "	79	66	April 25, "	84
18	Jan. 7, 1859	72	67	May 16, "	75
19	March 2, "	72	68	June 21, "	67
20	April 22, "	72	69	July 1, "	50
21	June 11, "	75	70	July 24, "	52
22	July 30, "	73	71	Aug. 16, "	55
23	Sept. 10, "	72	72	Sept. 4, "	66
24	Oct. 29, "	78	73	Oct. 8, "	48
25	Dec. 14, "	81	74	Nov. 7, "	62
26	Jan. 21, 1860	75	75	Nov. 28, "	57
27	Feb. 29, "	78	76	Dec. 23, "	66
28	March 7, "	75	77	Jan. 16, 1864	66
29	May 14, "	75	78	Feb. 13, "	57
30	June 19, "	78	79	March 4, "	66
31	July 26, "	78	80	March 27, "	60
32	Sept. 1, "	78	81	April 19, "	66
33	Oct. 5, "	80	82	May 14, "	48
34	Nov. 5, "	90	83	May 22, "	30
35	Dec. 9, "	86	84	June 16, "	54
36	Jan. 12, 1861	83	85	July 9, "	54
37	Feb. 11, "	90	86	July 31, "	66
38	March 11, "	84	87	Aug. 26, "	45
39	April 8, "	84	88	Sept. 23, "	60
40	May 8, "	84	89	Oct. 22, "	54
41	June 8, "	75	90	Nov. 20, "	60
42	July 9, "	78	91	Dec. 11, "	63
43	Aug. 10, "	68	92	Jan. 9, 1865	48
44	Sept. 12, "	81	93	Jan. 28, "	57
45	Oct. 14, "	75	94	Feb. 22, "	48
46	Nov. 15, "	78	95	March 15, "	48
47	Dec. 14, "	83	96	April 8, "	42
48	Jan. 11, 1862	83	97	May 2, "	54
49	Feb. 8, "	84	98	May 31, "	51
50	March 6, "	84	99	June 28, "	54
51	April 3, "	83	100	July 26, "	48
52	April 29, "	90	101	Aug. 24, "	54
53	May 27, "	81	102	Sept. 22, "	57
54	June 22, "	71	103	Oct. 21, "	51
55	July 22, "	66	104	Nov. 14, "	48
56	Aug. 16, "	72	105	Nov. 22, "	24
57	Sept. 13, "	78		Total,	6,912

After each operation, in two or three days she was able to be up and attend to her domestic affairs.

About the first of the year 1858 we discovered ovarian tumors making their appearance. These tumors increased in size for about twelve months, when they seemed to have attained their full growth, and occupied both ovaries. They measured antero-posteriorly twelve inches, and laterally, from one ilium to the other, ten inches. Up to the time these tumors made their appearance, there had been no swelling of the feet and legs; but thenceforward, as she filled up with water, her feet and legs would swell and become painful, and prevent her from taking much exercise; still she would sit up the most of her time. These tumors never gave her much trouble, except on pressure with the hand, when they were a little sore on the upper portion. They were composed of little sacs or cells, and were nodulated to the touch.

During this time a great many physicians visited her, at her and my request, and many prescriptions were suggested and tried, but to no effect. Among the doctors was J. M. Watson, Professor of Obstetrics and Diseases of Women and Children in the Medical College of Nashville; but he offered no plan of treatment, and expressed the opinion that nothing could be done to relieve her.

The case continued in this way until about the first of November, 1865, when her general health began to give way and her appetite to fail. Occasionally she was confined to bed, but never was very sick, until the night of the 20th November. Then she was seized with a violent pain in the region of the stomach and a shortness of breath, of which she never could be relieved; and death closed the scene on the night of the 27th November, 1865.

Art. VIII.—TYPHOID FEVER:

Remarks on the Epidemic which prevailed in South Alabama in 1863: By J. R. Cushing, M. D., South Butler, Ala.

DURING this epidemic of typhoid fever I had upwards of two hundred cases, with the loss of but three patients. This may seem remarkable, and I attribute my success solely to the simplicity of the treatment. They were all cases of *distinct typhoid*, if I may so term it.

The epidemic which prevailed in this section in 1863, was distinguished by the regularity in its symptomatology, the uniformity in

its mode of attack and progression, and by scarcely any dissimilarity, neither liver nor brain being disturbed during its whole course: it was strictly the "enteric fever" of Professor Wood. The disease invariably commenced its attack insidiously, the patient generally complaining of a soreness throughout the limbs and body, with a disgust of food—too sick to work and not sick enough to go to bed—slight fever at night, with a remission towards morning and during the day. This train of symptoms continued until the accession of the diarrhœa on the fourth or fifth day, when the true typhoid developed itself in a continued fever; a quick, compressible pulse; a rough, dry tongue, "*with fiery edges*," and a general prostration of the vital powers. In fact, debility from the initiatory stage was one of the prominent symptoms, and the one most generally complained of. Between the eighth and tenth day of the disease the tongue became perfectly smooth and shining, intensely red and dry. There was epistaxis in a few cases, say about one in twenty, but I never discovered that it either improved or aggravated the condition. If there was any rash upon the surface, I never perceived it, though I examined frequently every subject. Of the cases that died, two were old men of shattered constitutions, the other a lady who had been treated before I was called with purgatives. She died of perforation on the fifteenth day.

My treatment was very simple, to illustrate which I will give a case from my note-book:

July 8th, I was called to visit Mr. W. P., a soldier doing duty at Pollard, who was sent home sick on an eight days' furlough. He was aged twenty-eight, of a bilious-sanguine temperament, and he informed me that he had never been sick before the present attack. He informed me that he had taken two pills of blue mass two days before, and that "it was not yet done acting." I found his tongue "*rough and dry;*" pulse small and frequent (95); his dejections thin and of a bloody cast, with streaks of bilious matter; tenderness of the bowels on pressure, with some meteorism; liver of normal size; slight headache, with a dejected expression of countenance.

I diagnosed the case typhoid fever, and let me here state that this was the first case which had occurred during the season; and from this point it radiated for twenty miles around, upwards of two hundred cases falling to my care for treatment. Then let me ask the oft-repeated question, is typhoid fever contagious?

I prescribed the following formula of treatment: Sulph. morph.

$\frac{1}{8}$ gr. with sulph. quin. gr. ij. every four hours, and egg-nog between doses, or alternately every two hours, with large red-oak poultices to the bowels.

July 10th—Visited patient, and found he had rested better than previously. The discharges not so frequent, yet sanguineous ; tongue still dry ; pulse fuller and not so rapid. Continued prescription.

12th—Complains of sore mouth and throat ; tongue smooth and glistening ; stools not so frequent, but still characteristic. Prescribed spirits turpentine, gtt. x, in mucilage, every three hours, alternately with the morphine and quinine.

13th—Tympanitis subsiding ; no actions on the bowels during the last sixteen hours ; edge of tongue moist and cleaning. Continued the prescriptions every four hours and discontinued the poultices ; pulse being weak, ordered brandy toddy *pro re rata*, in conjunction with the egg-nog.

15th—No action on the bowels since my last visit ; tongue cleaning ; no pain in the bowels, such as colic, etc.; tympanitis entirely gone ; convalescent. In four days the patient had taken over three hundred drops of turpentine. Continued morphine and quinine every six hours ; suspended the turpentine mixture. Diet, two eggs in nog, boiled rice and buttermilk.

17th—Visited patient and found him still improving. No action on the bowels since 13th ; no colic ; pulse fuller and nearly natural ; tongue clean. Ordered table-spoonful of castor oil every six hours until it operates ; discontinued the morphine and quinine ; continued egg-nog, brandy and diet.

18th—Two actions on the bowels ; doing well. Continue diet and brandy.

19th—Discharged patient, with directions to continue brandy, and a dose of morphine at night in case of wakefulness.

This has been my usual course of treatment, my patients generally being dismissed on the eighteenth or twentieth day from the beginning of the attack, and my main remedies being the two great alkaloids and brandy. In fact I stimulated all the way through, and used the oil of turpentine when intestinal ulceration supervened.

Typhoid fever, like any other contagious disease, will run its course. I do not believe that a case was ever cut short, or, speaking professionally, *aborted*. It has its regular and distinct stages, yet, at the same time, I will not deny that these stages may be shortened under a judicious plan of treatment. There is no doubt in my mind

that the great fatality of this disease has been occasioned by purgatives, and especially the mercurials. I never use them at all until after convalescence is established, and give no astringents. My small doses of morphia I find sufficient to keep in check the diarrhœa, and when costiveness ensues, it is generally with the restoration of health.

In the use of the turpentine, I think it is too frequently given injudiciously. At the commencement of the disease it does no good; on the contrary, it sometimes aggravates some of the symptoms. But there is one stage of the disease wherein it is highly necessary; in fact, I would be at a loss how to get along without it, and at that particular time you have one unfailing sign to go by. The appearance of the tongue is a great monitor to us in the treatment of this disease, and whenever it assumes the peculiar smooth, shining appearance, with its invariable dryness, you may consider this the unfailing prognostic of *ulceration* and a call for the turpentine; and it is astonishing sometimes to see what a few hundred drops of this potent remedy will accomplish. The tongue, along the edges, gradually becomes moist and assumes a natural appearance, sometimes almost imperceptibly, but probably in the same ratio as a like change occurs in the ulcerated bowel or gland. Now is the time of danger. Keep up the flagging pulse with the brandy, and the turpentine will do the curative part, for this is the most important stage of the disease. Neglect thirty-six or forty-eight hours *now* in the use of the turpentine, and your case is lost, for the tongue has still another phase to go through: it becomes brown and cracked, and frequently bleeds; sordes collect on the gums and teeth; perforation takes place, and your patient dies.

What was remarkable in the epidemic which prevailed in this section, was the absence of all cerebral derangement. There was generally lowness of spirits, but no somnolency or active delirium. The bowels would frequently get "locked up," and I would let them stay locked up; and sometimes eight or ten days would pass without an action, for I would never administer an aperient until after convalescence was established. All these cases did well, without any untoward symptom.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

Art. I.—*Club-Foot, or Talipes:* By William Parker, Esq.

THE deformity of club-foot is disfiguring and often painfully distressing. The subject may, therefore, well come under discussion. No deformities of the human frame, perhaps, seem to be more simple and easy of remedy than this, if correct anatomical and physiological views are carried out. I therefore submit them for the profession to consider dispassionately, especially as sufficient attention has not been paid to this class of sufferers at the earliest period of life, before the present surgical operations of cutting are resorted to.

It appears to me that this deformity is evidently the result of a greater mechanical power of muscles overcoming a lesser power of muscles, thereby causing contraction of several tendons at the further extremity of muscles. Also, that the deformity is not detected before muscular action is, or should be, established for the purpose of walking. We thus see the beginning of the deformity at the earliest period of life; which can easily and readily be treated with success in the course of three or four weeks on each foot—instead of employing years under the iron system, or months under the plan of division of the tendons with the knife and extension of the tendons with a curiously contrived instrument. Experience, the best teacher, in three or four cases, has supplied this desideratum by the use of tin-plate splints and leather strap, which were invented by myself, to fit any and every part of the body.

The object of these appliances in club-foot is to overcome the action of the gastrocnemii and other muscles and flexors of the foot and toes, which draw up the heel and bring the toes to bear on their upper and outer surfaces, according to the severity of the case. By fitting these splints to the calf of the leg, heel and ankles, and fastening them by the aid of the leather strap, and keeping them constantly applied for three or four weeks, thereby giving time for the weaker muscles to gain strength and their tendons to elongate, prevention of club-foot is effected; and the cure is thus accomplished in bringing the sole of the foot to bear flat on the ground with little or no pain to the patient.

It should be observed that at two years of age hitherto much difficulty has arisen how to assist nature, when some surgeons occasionally recommend well-padded wooden splints, whilst others recommend the use of irons that are manufactured by surgical instrument makers to be applied on either side of the leg, extending from the knee to the ankles, and fastened by a hinge at the ankles

into a stiff-made shoe. The latter is directed to be removed at night; and it is obvious that neither one nor the other plan can oppose specially the action of the gastrocnemii and other muscles, and the removal of splints at night would give those muscles full power of action, and thereby greatly undo the previous day's work. It also frequently occurs that such mechanical contrivances cause very painful and troublesome sores, obliging them to be left off for a time.

In stating this brief plan of practice, though omissions may be made, yet it will, I think, be allowed that a vast field for improvement is evidently opened for others to work in, to relieve human sufferings. Only picture the patient undergoing the severe torture of the division of one or more tendons, and their extension by means of the tightly-adjusted instrument employed for months to keep the foot in a proper position for walking after the division of the tendons, and the sympathy of every one must be keenly excited. Although this operation has been in vogue some twenty-five years, we should not hesitate to put forth other plans, when such difficulty in procuring relief still exists.

The primary or remote cause of club-foot may be ascribed to dentition, or some other infantile disease affecting the nervous system. It will be allowed that the joints of infants can be adjusted easily to any necessary form without distress to the patient, and that an early habit of exercising muscular action can be also safely and advantageously maintained without injury. Consequently, waiting until the child shall be six or seven years old before mechanical means shall be adopted, would be attended with much more difficulty and pain. These considerations of themselves would direct us to immediate treatment at two years of age, when the deformity always first shows itself. As no disease exists in the joints, we have only to attend to the mechanical action of the muscles and extension of their tendons.

The various forms of talipes are produced by the same cause—viz., contraction of the tendons—which have been often treated unsuccessfully with the iron system and ultimately have been divided with the knife, and the limb has been kept in proper position for walking by means of an instrument to elongate the tendons; whereas the adoption of the simple and painless remedy I have above suggested, would obviate entirely the necessity of resorting to either of these plans, attended as they must be with severe and protracted torture. The cases above referred to in my own practice can be given to any one who may require them.—*British Medical Journal*, Aug. 11, 1866.

ART. II.—*On Loose Cartilages in the Articulations:* By HENRY DICK, A. B., M. D., Surgeon to the National Orthopædic Hospital.

THERE is an affection of the knee-joint, and in some rare instances of that of the elbow, the origin of which is involved in great mystery.

Its diagnosis is sometimes very difficult, and on that account mistake is liable to be made in the treatment. There is one symptom of this affection which should always rouse our suspicion—namely, sudden pain in the knee-joint, followed by inflammation and swelling. The existence of loose cartilages in the knee-joint is a very serious affection. The patient suffers from repeated inflammation and swelling of the joint; and, in some cases, the pain is so great in walking, that he is unable to use the affected limb. I have seen some such patients remain for months without pain, when suddenly in some movement of the leg the pain returned.

How these loose cartilages are formed we can only theorize, on looking at their pathological anatomy and histology. They are, as a rule, quite loose in the articulations; but there are instances on record where, on *post mortem* examination, these bodies have been found fixed to the joint. In making such examinations myself, I have found these bodies loose in the joint; but, on a strict examination, the pedicle on the foreign body could still be distinguished.

I think, therefore, that these bodies have their orgin on the walls of the joint, and become detached by certain circumstances.

The question now arises, Do they grow after they become detached? Future observation may, perhaps, solve the question. In cases where these foreign bodies were very small and loose in the joint, I have fixed them by a proceeding which I shall presently detail. They remained fixed in the joint; and, on examining them in one case four years afterwards, I did not find that they had grown, so that it is difficult to determine their growth after being once detached. There can be no doubt that the tissue composing them is cartilage, as it possesses all the anatomical elements of this tissue; and in a case of Mr. W. Adams's, both cartilage and bone were discovered.

They vary in magnitude from the size of a lentil to that of a large bean. I was present at an operation performed subcutaneously by my friend Mr. W. Adams, where the foreign body extracted was of the size of a large bean.

When these bodies are large, their diagnosis is very easy, as they can be felt; or, if not found directly, the patients themselves know how to manipulate to bring them into such a position that the surgeon can feel them. But such is not the case where these bodies are small, and these are the cases wherein mistakes are liable. I am personally acquainted with a case of the latter kind. It was that of a gentleman residing in the country and fond of the recreation of shooting. On two occasions of being out shooting, he felt a sudden pain in the knee, and fell down and was unable to walk any farther. On each occasion the cause was attributed to having taken cold. I would draw the special attention of the profession to the symptom of sudden pain in the knee-joint in walking. When this symptom presents itself, we may be almost sure there is a foreign body in the joint, even if we fail to discover it at once; and if we carefully examine the patient at different times of the day, we shall at last find it.

In some cases, after rest, in the morning before the patient leaves his bed, we may be so fortunate as to find the foreign body; but in

two cases which I marked down I could only find it in the evening, or after the patient had taken some exercise. Hence no rule can be laid down; and it appears to me that it depends upon the position of the foreign body, as to when it is most easily to be discovered.

The mode of treatment is completely surgical. No medicament taken internally or rubbed into the joint has any effect upon the complaint. The only modes of treatment known to me are the radical removal of the foreign body and the palliative treatment, which is fixing the foreign body by galvanic electricity.

Another palliative mode of treatment consists in the subcutaneous removal of the body, and leaving it in the neighborhood of the joint, whence it will not be able again to intrude into the cavity.

The radical removal of these bodies is practiced by two methods: the open and the subcutaneous incision. The open incision I shall not discuss, because the danger therefrom is so great, that I think modern surgeons will hesitate before they undertake the operation. Several cases of death, some of them known to me personally, have resulted from open incision; and in some cases anchylosis of the knee-joint was the result.

The subcutaneous incision must, therefore, remain the only reasonable operation. It is generally practiced by making the incision with a long-bladed tenotone, at a distance of some inches from the spot where the foreign body lodges; on reaching which, the loose cartilage is pushed into the track of the knife, and so extracted—an operation not very easily performed, and which, I dare say, is one of the reasons why surgeons have preferred the open incision.

But the operation can be much more easily performed by making a subcutaneous incision with an instrument which I have invented, and which is something like a pair of scissors, each blade having sharp edges, and which, when closed, has the form of a lance, but, when introduced and opened, can act as a forceps. The operation with these forceps-scissors, as I may call them, is performed on the same principle as the subcutaneous incision with the tenotone. An assistant fixes the foreign body. The surgeon then thrusts in his subcutaneous scissors (closely shut), at a distance of about three inches from the foreign body (generally the neighborhood of the border of the tibia is the most suitable spot, but the choice of the point of puncture must depend on the position and seat of the foreign body). When the point of the scissors comes into contact with the foreign body, they are opened, and the foreign body is then seized with them, and cautiously extracted as follows: When the surgeon perceives that he has grasped the foreign body, he should with his left forefinger press on that part of the foreign body and instrument which is next to the inner joint-wound, in order to prevent the air from entering; and the finger should follow the substance all along its course until it is extracted through the opening previously made. When the foreign body has arrived near the skin-puncture, it should be released from the scissors, which should now be *shut* and withdrawn; the foreign body should then, by gentle manœuvres, be pressed out through the external puncture. The reason of this latter part of the procedure is that, if the foreign body were retained in the scissors until they were finally withdrawn, the external opening would thereby

be rendered much larger than it should be for a subcutaneous puncture. By the above method, it is not necessary to leave the foreign body in the puncture (or rather in the track of the puncture) near the skin ; and, indeed, I think it is much better to extract it at once, and thereby remove a source of local irritation. A small compress and a piece of sticking-plaster, and the knee well bandaged and kept quiet with a well-padded splint, in the semi-flexed position, propped up on a cushion, is the only after-treatment necessary.

Another method is the palliative treatment, consisting in the application of galvano-electricity, of which I have seen the good effect in three cases. Chance led me to adopt this method. In a case of chronic inflammation of the synovial membrane of the knee-joint, after having tried all the known remedies, except the iodine injection, I passed on each side of the joint an insect-needle, until it was freely moving in the joint. The needles must be very fine, and slowly passed into the joint. The operation is painless. Through these needles, electro-galvanic currents were passed. In this case, the patient got better ; but at a later period, when the fluid was much diminished, I discovered a small foreign body, of the size of a lentil, in the joint. I inserted the positive needle on that foreign body, after fixing it on the border of the tibia as well as I could. A strong current was discharged on the needle for forty minutes daily for eight days, the patient being in the recumbent position. The foreign body remained where it was fixed by the needle; and I still can find it in the same place. I think the theory must be, that lymph has been coagulated round the foreign body by electricity. I cannot otherwise account for it. The gentleman remains perfectly well. The only inconvenience he has felt in four years was once when he took violent exercise ; he felt his knee painful, but the pain was not nearly so great as that which he previously felt ; and he has never since the galvanic operation had inflammation of the synovial membrane.

After what has been stated in the foregoing pages, I come to the following conclusions:

1. In the present state of morbid physiology, very little is known of the origin of loose cartilages in joints.

2. The loose cartilages should only be removed by the subcutaneous method ; and the most safe and easy way of removing them is by the subcutaneous scissors.

3. When the loose cartilages are small (say the size of a lentil), the electric current through insect-needles may be tried with advantage.

4. Open cuttings in the joint, such as were formerly practiced, can not be too strongly condemned.—*Brit. Med. Jour.*, Sept. 8, 1866.

Art. III. — *Popliteal Aneurism: Cure by Flexion.* By P. Sidney Jones, M. D., London.

H. W., aged 31, a gentleman following pastoral pursuits, called upon me on November 17, 1865, complaining of rheumatic pains in the right knee which had troubled him for several months.

During the last few days the pain had become much worse, especially at night after walking a good deal. Is accustomed to take violent horse exercise, and a few months since, in jumping from a vehicle in motion, wrenched his right leg. Upon examination of his limb I discovered a pulsating swelling about the size of a small orange occupying the popliteal space. The pulsation was expansile and tearing, synchronous with the pulse at the wrist, and completely arrested by pressure upon the femoral artery in the groin. The tumor could be nearly emptied by pressure, and felt to fill again when the pressure was removed. The skin over the tumor was quite healthy, and not adherent. The fingers could be passed down between the tumor and the muscles bounding the popliteal space, so as to grasp it. No bruit was perceptible.

Mr. Nathan, one of my colleagues at the Infirmary, saw the patient with me on the 19th, and confirmed the diagnosis. As the pulsation in the aneurism was completely checked by acute flexion of the knee, I determined to employ Ernest Hart's method, and accordingly, on the 21st, carefully bandaged the limb from the toes to the groin, and bent the knee so that the heel was about eight inches from the buttock, retaining it in this position was a figure of 8 bandage. In two days the heel was brought to within three inches of the buttock; but as this degree of flexion could not be borne for many hours, notwithstanding the use of morphia, he was allowed occasionally to extend the limb, and it was always relaxed somewhat at night.

On the fifth day I suspended over the thigh, by means of a cord, a conical bag filled with 9 lbs. weight of small shot. Whenever the pain from the flexion became unbearable, the patient extended his leg and placed the conical end of the bag over the artery in Scarpa's triangle. This completely controlled the circulation as long as the bag was kept directly over the artery; but finding the patient could not manage this himself, and not having any competent assistant, it was desisted from after two days' trial. This plan appears to me, however, to have an advantage over digital compression, in that it is much less fatiguing to hold a bag steadily than to compress a vessel with the fingers, and hence fewer assistants will be needed.

On the nineteenth day (December 11) from the commencement of the flexion treatment, there was considerably less pulsation in the tumor; and over the front of the knee, which was a good deal swollen, and on each side of the patella, small vessels could be felt pulsating.

On the twenty-seventh day (December 19) the pulsation had very greatly diminished, and on the twenty-ninth day it ceased entirely. Nothing could be felt but a slight rippling over the centre of the tumor.

On the thirty-first day he was allowed to come down stairs.

On December 27 (thirty-fifth day) my notes are: "Tumor quite solid and free from pulsation; limps a good deal in walking; still has some pain in the ham."

I saw no more of this gentleman until a month later (January 22, 1866), when he called upon me, complaining of severe pain in the left ham, which had begun to trouble him about ten days before. On the evening before calling on me, after walking about two miles,

the pain was very severe, accompanied with violent throbbing. Upon examination I discovered a pulsating swelling, about the size of a walnut, situated in the course of the popliteal as it lies under the gastrocnemius muscle. It had all the characters of an aneurism, and a loud bruit could be heard over it. Circumstances prevented the patient from submitting himself to treatment until February 5, when the tumor was in much the same state. I bandaged and flexed the limb as with the other leg, and though flexion did not control the circulation in the aneurism so completely as in the first case, yet on the fourteenth day all pulsation had ceased in the tumor. A month later I saw this patient again. He was then quite well, though complaining of weakness in the right leg. Both aneurisms were then quite solid, and that in the right ham had very much diminished in size.

While under treatment for these aneurisms, this patient took morphia—sometimes as much as three grains in the day; and the knee, in which he at first complained of much pain, was rubbed with laudanum and oil. Towards the middle of the period of treatment he complained of severe pain down the shin-bone.—*Medical Times and Gazette*, Sept. 8, 1866.

Art. IV.—*Atropine and Mercury in Acute Iritis:* By T. Pridgin Teale, Jr., M. A., Surgeon to the General Infirmary at Leeds.

DURING the last two years and a half I have recorded in a tabular form the cases of acute iritis which have come under my care, in order to test the value of certain views of treatment which I had arrived at from the observation of such cases previously to this period. The exactness of the results is so marked, and the sequence of events so definite, that I feel justified in relating the cases to the profession, and in deducing from them certain principles of treatment, which, if not new, may at any rate not be generally known or acted upon in medical practice.

In speaking of iritis, in this paper I exclude from consideration all cases of traumatic origin, all those which are secondary, *i. e.*, caused by extensive adhesions of the iris to the capsule of the lens left by previous attacks, all subacute forms traveling forwards to the iris from the deeper structures, and all cases occurring in children. These are excluded in order to simplify the inquiry, and restrict it to those acute forms, generally syphilitic, which occur in the previously healthy eye of the adult, and which, if neglected, rapidly endanger vision.

For treating such cases many remedies have been and are still employed—venesection, leeches, blisters, opium, purging, belladonna, turpentine, and mercury. Some surgeons use many of these in combination, others depend upon some single drug, others denounce particular drugs as injurious or useless. Some claim opium as a cure for all cases, with some belladonna is omnipotent, with others mercury and blood-letting are indispensable. In this variety of practice where lies the truth? Can we arrive at it? I trust tha

the following records will be accepted as an instalment in this inquiry, as they have been carried out in order to test the relative value of atropine and mercury, to ascertain how much each remedy can do, and to determine if possible the most effectual way of employing them.

The cases here recorded appear to me to justify the following conclusions and principles of treatment:

1. Iritis can generally be cured, quickly and perfectly, by atropine alone, or by atropine and mercury combined, without the aid of other remedies. How far opium, blisters, leeches, and venesection aid and accelerate progress I have not yet tested, wishing in the first instance to determine the value of the remedies under consideration, and then to make the results herein obtained a starting point for further inquiry.

2. The presence or absence of syphilis does not affect the question of treatment.

3. Many, perhaps one-half, of the cases of iritis, *whether syphilitic or not*, can be cured by *atropine alone*.

4. Those cases in which atropine fails to dilate the pupil in twenty-four or forty-eight hours require mercury. In occasional cases the application of leeches renders an eye susceptible of dilatation which at first was unaffected by atropine.

5. When mercury is required, it ought to be introduced into the system rapidly.

6. If the system is to be affected by mercury, the mercury ought to be introduced by *the skin*, *not* by the *stomach*. When this drug is introduced by the stomach, the digestive powers are depressed at the very period when their healthy function is most needed. When introduced by the skin, its full remedial effects are obtained without any impairment whatever of the powers of nutrition. It is my rule never to introduce mercury by the stomach when I wish to obtain rapidly the constitutional effects of the drug.

7. In those cases which require mercury it is sufficient to render the gums slightly tender. When the gums are even slightly affected, we have therein evidence of the introduction of mercury into the system in quantity sufficient to turn the scale in favor of health, and carry the case to a successful issue. Therefore, the moment we find the gums undoubtedly tender, or beginning to be tender, we may suspend the drug.

8. In most cases the constitutional effects of mercury, indicated by tender gums and improvement of symptoms, may be obtained on the second, third or fourth days, provided the patient be confined to bed. Absorption of mercury by the skin appears to be *much more* rapid when the patient is confined to bed than when he is allowed to go about as usual.

9. Atropine should be used during the whole period of treatment, except where it causes great pain or increases conjunctival irritation, in which case it may be *temporarily* suspended, or dissolved in glycerine and applied to the skin.

10. That in cases requiring mercury the coincidence of tenderness of gums, of relief from pain, and of the action of atropine on the pupil is almost absolute, even to an hour or two. Perhaps in cases

more severe than those recorded, with great effusion of lymph, the visible effects of atropine may be delayed to a later period. On this point I do not possess evidence.

Let us now inquire how far these conclusions are justified by the cases, and what are the general results of treatment.

Treatment.—Of the twenty cases, eleven were treated by atropine alone, nine were treated by atropine and mercurial ointment combined. In one or two cases a dose of Dover's powder was given when the pain was excessive, and in some others salines were given during the application of the mercurial ointment if the skin were hot and not perspiring. Leeches were used, I believe, in three cases only. Two cases had taken mercury before coming under my care.

Question of Syphilis and its relation to Treatment.—Thirteen cases were undoubtedly syphilitic. Of these, five required mercury; eight recovered under atropine alone. In seven, syphilis was either denied or not made out. Of these, four required mercury, three were cured by atropine alone.

Rapidity of Mercurial Effects.—Of the nine cases in which mercury was required, one used the ointment twenty-four hours; a second twenty-four hours, having previously taken blue pill five days without benefit; a third and fourth used the ointment two days, a fifth and sixth three days, a seventh and eighth four days, the ninth twelve days. So that of nine cases of iritis in which mercury was used, only one required the application of the ointment for more than four days.

Rapidity of Recovery.—Of the twenty cases, seven recovered good sight and pupil within two weeks, one within a "short time," five within three weeks, three within four weeks, three within eight weeks, one within three months; the twentieth was relieved from pain with partial recovery of sight.

Perfection of Sight.—Fifteen read No. 1 Jaeger, three (including the second eye of one case) read No. 2, two read No. 6, one could read No. 18.

Perfection of Pupil.—Twelve recovered with a perfectly active pupil free from adhesions, in five there were slight or single points of adhesions, in one there was closed pupil, and in two the condition of pupil is not recorded.

Duration of Disease before Treatment.—In eight the disease had existed not more than a week before coming under my care, in four not more than two weeks, in six less than two months, in one three months, and in one three months and a half.

Condition of Vision before Treatment.—In six cases vision was limited to perception of shadows; in two it is described as dim; in two the patient could not read Jaeger No. 20; in three the patient read No. 20; in two No. 16; in three No. 4; in two the condition of vision is not recorded.

Disappearance of Mercurial Effects.—In all the cases, although no special note is made on this point, the constitutional effects of mercury passed off in a day or two, and in none do I recollect to have met with any injurious effect whatever which could be traced to the use of mercury.

Relapse of Iritis.—In one case only have I any record of a relapse,

and this relapse disappeared rapidly under atropine alone. This fact tends to confirm Gräfe's assertion "that the principal cause of recurrence of iritis is the existence of synechiæ;" in other words, when iritis is cured with a pupil free from adhesions, it seldom evinces a tendency to recur.

Mode of using Atropine and Mercury in Iritis.—Use of Atropine.— On first seeing a case of iritis, whatever its degree, I order atropine, of the strength of two grains to the ounce, to be dropped into the eye six times, at intervals of five minutes, in the morning, and six times also in the evening. On the following day, if the pain is lessened and the pupil is beginning to dilate, I conclude that the case is slight, and that atropine alone will cure it. If, however, the pupil is affected, and the symptoms unabated, I commence mercurial treatment without delay.

Use of Mercury.—The patient is ordered to lie in bed, to wrap round each arm a broad piece of flannel, well smeared with mercurial ointment, and to wear this mercurial bandage until the gums are slightly tender, a small quantity of fresh ointment being added every evening. It is not necessary to *rub in* the ointment. I suspect that the "rubbing in," by producing irritation, impairs the absorbing power of the skin.

Discontinuance of the Mercury.—As soon as the symptoms of the disease begin to abate, or the gums begin to be tender (and these two conditions are generally coincident), the mercury is discontinued. In none of these cases has mercury been given by the mouth (except in two cases, which had been so treated before coming under my care), and in none has the ointment been rubbed in.

Discontinuance of the Atropine.—As soon as the pupil is fully dilated, as far as any adhesions will permit, the instillation of atropine is reduced to once or twice a day, and continued at this rate as long as redness or tenderness of the eye remains.

This mode of treating iritis coincides very nearly with that described by Gräfe (on Iridectomy, New Syd. Soc. 1859), in using atropine as the main remedy, and mercurial inunction in cases too severe to yield to the atropine. It differs from it in dispensing with *rubbing in*, and with the use of mercury by the mouth. Mr. Dixon, in his early remarks on iritis, condemns belladonna; in his later work he speaks timidly of its use as an appendage to other treatment. The cases here recorded prove Gräfe to be correct in claiming atropine as the sheet anchor, and in making other remedies subordinate.

William Lawrence and most opthalmic writers give mercury by the mouth, and do not mention its introduction by the skin. They speak of the coincidence of the improvement in the symptoms with the first appearance of constitutional effects of mercury, and make this the signal for reduction, not as I have done, for the entire omission of mercury.

Blood-letting, local and general, is usually urged as indispensable in iritis. That it is not so I think the foregoing cases prove. I believe, however, that local blood-letting may be a valuable addition to other means of treatment, and that it facilitates the absorption of atropine and accelerates its effects.

Note on the Action of Atropine.—Writers on iritis generally rest the credit and value of atropine or belladonna on its power of dilating the pupil, in setting at rest the muscular tissue of the iris and ciliary body, and in diminishing the risk of the formation of synechiæ. I cannot, however, but suspect that it does more than this—that it acts as a direct sedative on inflamed and congested tissues, and that much of its power depends upon its influence in contracting the blood-vessels. I cannot in any other way explain the remarkable value of this drug in many cases of ulcer of the cornea, and so-called strumous ophthalmia, a large proportion of which I treat by atropine only. Nor can I explain in any other way the immediate improvement, and rapid and complete recovery by means of atropine alone, of many cases of syphilitic iritis. That atropine does reduce the size of blood-vessels I have no doubt, having several times satisfied myself of the fact by observing the calibre of delicate vessels traversing the cornea, before and shortly after the instillation of atropine.—*London Opth. Hosp. Rep.*, April, 1866.

Art. V.—*Treatment of Anthrax by the Cupping-glass.*

ON March 8th, 1866, a cabinet maker, about forty-eight years old, entered the Hospital *Saint Antoine*. This man, previously in good health, had upon the left dorsal region, on a level with the spine of the scapula, a tumor presenting the characteristics of anthrax, of fifteen days' standing.

Of the size of a hen's egg, this tumor was soft to the touch, without obvious fluctuation, ill-defined, and resting upon a considerable base. The skin covering it was of a violet hue, and the part most swollen was perforated with little holes discharging a sero-sanguinolent pus. The tempepature was elevated on the level of the tumefaction; and the pains, which were lancinating, were aggravated by pressure. The general condition of the patient was good, with little fever.

It was then that M. Foucher determined to try a plan recommended by facility of application and feasible to every practitioner. He sent for a cupping-glass four or five *centimetres* in diameter, to which was fitted a small air-pump. He placed this cupping-glass on the summit of the tumor, and exhausted the air. The cavity of the glass soon filled with bloody pus and mortified fragments contained by the tumor. This glass was left on for some moments, and when removed, the first effect, beyond the discharge of the tumor, was the disappearance of pain.

Three applications of the cupping-glass were made in as many days. Every time the tumor was emptied of the organic detritus which it contained, and at the third application the portion of skin covering it was detached, leaving open a wound in good condition, entirely discharged and already beginning to granulate. The edges of the solution of continuity were irregular, cut perpendicularly and rather deglutinated; the suppuration of good character. It was

dressed with emollient cataplasms, and the ulcer entered on the healing process, which continued without accident till the recovery of the patient, towards the end of March.

This experiment exhibits an unforeseen surgical resource, which, besides its ingenuity, is almost painless, simple, available to all, and need not alarm the most timid patient. Moreover, this method answers advantageously the surgical *desiderata* prescribed in the academic discussion: it discharges without incision, and thereby seems to defy erysipelas and the other complications which are dreaded in the treatment of anthrax.—*Jour. de Méd. et de Chir.*, June, 1866.

ART. VI.—*Cuneiform Resection of the Knee for Angular Osseous Anchylosis, with projection internally:* By Prof. E. BOECKEL.

THE operation of which the following report is an example, has been performed but once before, under similar conditions, by Bauer, of New York, for valgus knee of traumatic origin. There are reported fifteen cases of cuneiform resection of the knee, as having been performed for angular anchylosis with flexion of the leg and projection anteriorly, but the difference between these cases and the one in question is considerable. When the knee is simply bent and cannot be straightened by forcible extension, the patient may still be enabled to walk by means of a *sellette*, and the necessity for an operation is rendered doubtful; but when the projection of the anchylosed knee has occurred internally, the leg being extended but forming an obtuse angle with the thigh, it is no longer a question of *sellette*, but one of operation, for the purpose of enabling the patient to walk. He cannot even use crutches, for at each step the helpless limb strikes the shaft of the crutch, tripping it up. Such was the condition of the patient operated upon with success and brought before the medical society of Strasbourg, in session June 21st, 1866. The following is a complete report of the case:

Henry Murat, born in Wesserling, forty-eight years of age and by trade a blacksmith, entered the Strasbourg hospital the 27th of July, 1865, to be treated for an affection of the knee. He is a married man, small in stature, and his muscular system not very well developed. He suffered in his youth from some cutaneous disease, some traces still remaining in the shape of well-marked patches of psoriasis in the vicinity of the joints.

When fourteen years of age he suffered from an inflammatory affection of the right knee, which terminated in suppuration and the formation of a fistula, that was three years in healing. Finally the knee got well, and he was enabled to learn the blacksmith's trade. The knee remained sound and firm from that time up to six months ago, when, without any apparent cause, it became a second time the seat of inflammation, resulting in the formation of abscesses. The patient for treatment entered the hospital of Winterthur (Switzerland), where he was working. After six months' treatment he was discharged cured. There was considerable deformity, however,

which depriving him of the use of his limb, necessitated his leading an inactive life.

The 27th of July he came to the surgical clinic, and requested to have his deformity rectified. In the examination, Professor Boeckel found this condition: the right knee anchylosed, apparently by osseous fusion; the leg almost completely extended, but the tibia forming an obtuse angle externally with the thigh; the tibia rotated outwardly to such a degree that its external condyle was situated posteriorly to the corresponding articulating surface of the femur. He also found the patella fused to the condyles, and around and above the joint several fistulæ, no longer discharging pus. The lower portion of the femur was considerably thickened by the periosteal inflammation which had evidently taken place; moreover, he suspected that anteriorly there had existed an osteitis, resulting in suppuration of the external condyle. A painful spot existed opposite the internal condyle of the femur, which projected considerably internally. The skin covering the joint was of a roseate hue. The patient did not suffer; had a good appetite; but it was almost impossible for him to walk, even with crutches, for the reason previously given. Let us add that, without being a drunkard, he was in the habit of drinking at least two pints of wine a day.

He had heard it said that by an operation his leg could be made useful; and though it had been represented to him as being attended with danger, he earnestly requested to be relieved of his infirmity. Before operating, Professor Boeckel placed him on the iodide of potassium, in order to control the remaining osteitis in the condyle. At the same time he was well nourished, and was given two pints of good wine a day.

On the 21st of August, in the presence of several professors, Dr. Boeckel proceeded to resect the knee. Chloroform was administered to the patient, and a large semi-circular flap cut, its convexity presenting inferiorly, commencing at the lower fourth of the internal surface of the femur, and carried below the patella to the outer aspect of the thigh, not quite so high as the inner cut. The flap included the fistulæ; the tendon of the triceps was divided and the patella reached, which was found attached to the condyles by strong fibrous bands. These attachments were divided, and as the bone was healthy, it was raised with the flap without being removed. The condyles were then laid bare a little above their largest portion. The articulated sound of Blandin was then passed between the posterior part of the bone and the soft parts, and the periosteum divided. The whole thickness of bone was then sawn off with an ordinary saw. The leg being then flexed, the head of the tibia projected from the wound, and with the saw it was also removed. After the removal of the head of the femur, on examination the spongy portion superiorly was found to contain pus, and another section of the bone was made. The coäptation of the osseous surfaces was easy, though the contraction of the muscles had a tendency to bring them pretty forcibly together. By reason of the softened condition of the bone, Dr. Boeckel did not attempt to connect the bones by sutures, as he had at first intended. The leg was washed, and placed in a wire splint previously prepared and extending to the pelvis.

This splint was opened at the knee, so that the wound could be dressed, and it was retained in position by large strips of diachylon plaster. Then the flap containing the patella was adjusted and held in place by several sutures, there being two open places on the sides for the discharge of pus. Simple dressings were applied. During the day thirty drops of laudanum in a warm infusion of chamomile were administered, and a bladder containing ice applied externally.

August 22.—The patient has not suffered much since the operation. He has considerable fever this morning. Pulse 130; temperature 39°.5. Towards night he vomited several times.

August 23.—High fever; pulse 136; temperature 40°. In examining the integument on the anterior aspect of the thigh, between the strips of plaster, there are found several erysipelatous patches. The limb has not moved in its position in the splint, but the patient complains that the pad lining the splint is not sufficient, as the pressure of the leg against the wire pains him. This is remedied by additional pads. To the erysipelatous patches an ointment of sulphate of iron is ordered, and sulphate of quinine administered internally.

August 24.—Pulse 120; temperature 38°.5. The sutures are removed. There is union in several parts; the wound commences to suppurate; the erysipelas has not advanced farther and remains within its original limits.

August 25.—During the night the patient, to ease his leg, shifted its position and displaced the bones. On examination the flap is found completely detached, and the lower extremity of the femur slipped in front of the tibia. Chloroform is administered, and a starched bandage applied, left open opposite the knee.

August 26.—The patient experiences more comfort in the new apparatus, and seems nowise doubtful as to his recovery. The wound looks healthy and is filled with granulations, and the febrile symptoms have almost disappeared.

August 27.—In spite of the starched bandage, the lower extremity of the femur has slipped in front of the tibia. Suppuration is copious, but healthy. The wound presents a good appearance. Temperature and pulse normal; appetite good; sleeps well. His food is of a nourishing character, and he is allowed wine.

Sept. 1.—General condition good; the wound is filled with granulations, but the lower portion of the femur has again moved in front of the tibia. The limb is replaced in the wire splint, which is well padded, and the bones are readjusted. Dressings applied twice a day. Opposite the head of the fibula two abcesses have formed, which are lanced. Nourishing food and wine ordered.

Sept. 2.—Patient complains of his heel, which on examination is found ulcerated. A lotion of camphorated alcohol is ordered.

Sept 3.—The patient complains of the wire splint. It is removed, and an apparatus of Scultetus applied, composed of three splints the length of the leg, two laterally and one anteriorly. These are prevented from pressing on the leg by the interposition of cushions. Wound dressed only once in the twenty-four hours.

Sept. 8.—The ulcer on the heel is healing. The patient feels com-

fortable in his apparatus. The suppuration is slight and of a healthy character.

Sept. 15.—With the assistance of Mr. Hergot, Dr. Boeckel places the operated leg in a plaster of Paris sling, but finds it impossible to replace the bones in apposition, the femur projecting at least three *centimetres* in front of the tibia. Moreover, it is completely covered with granulations, and the wound is contracting every day.

Sept. 26.—The wound still the same, cicatrization being somewhat impeded, particularly in its internal portion, by the displacement of the femur. It is evident that too large a portion still remains of the internal condyle, which causes the leg to bend too much outwardly, very much like the condition that existed before the operation. It is evident that, such a condition existing, bony union will not take place. It is therefore proposed to rectify the evil by a second operation.

The patient is chloroformed, the leg fixed on the thigh, and a fibrous band, connecting the integument on the anterior portion of the knee to the femur, divided. The internal condyle is then exposed, and a piece clipped from its internal and posterior surface. No difficulty is then experienced in bringing the bones in apposition. The limb is then placed in an immovable apparatus, applied in the following manner : A thick layer of wadding is placed entirely around the whole limb, opened, however, opposite the knee, and a slightly concave iron splint applied on the anterior portion, with a triangular opening opposite the knee. This is intended to obviate the tendency in the femur to tilt forwards, without at the same time disturbing the wound. Over this is applied a starched bandage. Moreover, the back part of the limb rests in a plaster of Paris splint moulded to the leg. The patient is then carried back to his bed.

Sept. 28.—No febrile reaction has taken place as a result of the operation. The apparatus is perfectly consolidated to-day, and maintains the leg perfectly straight, without pain or displacement of the bones. The wound has actually contracted down to a finger's breadth.

Oct. 5.—Patient doing well. The wound commences to granulate, and the bones have not moved. The patient is ordered full diet and two pints of wine a day. The leg with the apparatus can be easily raised without pain or inconvenience to the patient.

Nov. 2.—Has fever and complains of pain in the wound. The knee is swollen and reddened. It is supposed that the abscess, which existed previously in that region, has filled up again. Examination shows this to be the case, and the abscess is again lanced.

Nov. 20.—The anterior splint is removed, the bones being sufficiently united to obviate their being again displaced. The wound is entirely healed, with the exception of one or two fistulous openings.

Jan. 3, 1866.—The fistulous openings still remain, from which small particles of bone sometimes come out. The limb only rests in the plaster of Paris splint.

Feb. 4.—The patient is allowed to get up and walk on crutches. The bones are well united, and there is slight motion antero-posteriorly, but none laterally. One fistulous opening yet remains on the inner side of the thigh.

April—Still a fistulous opening, which sometimes closes and opens again. The patient enjoys perfect health. He is in good spirits, and will remain in the hospital until he is able to work.

The 21st of June, 1866, at which time the patient was brought before the Medical Society of Strasbourg, ten months after the first operation, the following conditions were found to exist : the right lower extremity perfectly straight, and the leg rotated slightly outwards; the tibia fused to the femur, and not allowing the slightest motion ; the patella movable, and below it the transverse portion of the cicatrix slightly depressed by the projection of the femur in front ; the ankle still somewhat stiff and its movements limited; the limb is shortened thirteen *centimetres*. This condition is obviated by the use of a high heel, which enables him to walk with the aid of a stick. It is believed that the patient will be enabled to walk in one or two months without the aid of any artificial support.

I will make a few remarks relative to the operation and the consecutive treatment. Of all forms of incision recommended for resection of the knee, that in the form of the letter *U* has appeared to me to be the most suitable in this particular case. It enabled me to include the fistulae in the incisions, and to raise the patella easily. I wanted to preserve this bone, which is often sacrificed uselessly, not only for the purpose of lessening the extent of the suppurating surface, but also for preserving the tendon of the patella. This tendon was in fact divided at its tibial insertion, and it has become adherent to the cicatrix opposite its former attachment. If fibrous anchylosis had resulted from the operation, and motion existed in the knee, the patella would have assisted in giving strength to the leg.

It is easy to calculate beforehand the thickness of the portion of bone to be removed. It is only necessary to apply a splint to the internal portion of the thigh, and to measure on a piece of pasteboard the angle formed below the knee by the deviation of the leg from the splint, and to apply it to the exposed anchylosed bones, and then to remove the triangular piece marked off. This is more easily described than performed, for frequently certain conditions exist which require to be met by modifications of the rule laid down. It is sometimes necessary to remove a larger prismoidal portion than is actually required in order to relax the muscles ; and when the leg is flexed, the piece removed should be thicker in front than behind, to ensure the straightness of the limb.

In the treatment the greatest difficulty experienced is in maintaining the bones in apposition, the femur having a tendency to project in front of the tibia, thereby tearing open the wound and rendering the patient liable to grave accidents.—*Gaz. Méd. de Strasbourg*, Sept. 30,'66.

ART. VII.—*New Mode of Performing Rhinoplasty.*

VERY satisfactory results may be gained by the usual operation, provided the nasal processes of the upper jaw still remain, only the *ossa nasi*, skin and cartilages being deficient. But when the

whole of the bones and soft parts have been destroyed, both the Indian and Italian methods are quite insufficient. The new nose, however large and perfectly formed, sinks gradually, as time advances, to the level of the face, and ultimately projects no further than the original stump.

With the view of rendering the new nose firmer, and, if possible, of giving it a bony foundation, Langenbeck tried in 1859 *periosteal rhinoplasty, i. e.* transplantation of a frontal flap including both skin and pericranium (*'Deutsche Klin.,'* 1859, 48). From five cases thus treated by him he draws the conclusion that the nose so formed is really much firmer, and that by ossification of the transplanted periosteum more or less perfect bone may be formed. Yet even this method fails to form a sufficiently prominent nose, when the nasal processes of the upper jaw are absent. Ollier, in 1861, combined periosteal rhinoplasty with transplantation of the remains of the nasal bones and a portion of the nasal process. The author does not approve of this proceeding; he thinks it best to leave the remains of the *ossa nasi*, however large they may be, where they already are. The object is not to produce a bony apex to the nose, but to support its bridge and root, and it is in this very position that any remains of the nasal bones must be found. It would not be very difficult to transplant with the frontal flap a sufficiently large portion of the external table of the *os frontis*, but the fear of exciting phlebitis or purulent meningitis has prevented Langenbeck from carrying out the idea.

He has accordingly followed another plan—that of transplanting a relatively small frontal flap over a previously erected bony framework. To explain his method more clearly, it will be advisable to preface a few remarks on the pathological condition. In rare cases both *ossa nasi* are destroyed, and then the nasal processes of the *maxilla* are usually more or less defective. Rarely do the latter parts preserve their perfect integrity and normal projection, when the nasal bones, septum and vomer, have been entirely lost. Generally, indeed, the nasal bones are only partially wanting, and their remains are depressed towards the nares. Thus the stump becomes flattened, a change that becomes more decided in proportion to the destruction of the nasal processes.

The ulcerative process by which the nose is destroyed, is mostly very chronic, requiring even ten or twenty years for its cure. Now it is known, as, indeed, the often cited osseous depositions on the tibia in chronic ulcers of the leg show, that the irritation excited during a series of years by such sores very constantly induces the formation of fresh bone, and this process may frequently be proved in respect to the nose. Ossifications form from the edges of the *apertura pyriformis*, and often from the whole inner surface of the nares; they materially diminish the aperture, and sometimes fill the cavity, so that there only remains a central canal as large as a quill. A species of regeneration of the *ossa nasi* occurrs in rare cases, an osseous bridge forming between the nasal processes, no doubt owing to gradual ossification of the granulations. The surrounding skin is dragged towards the middle line by the contraction of the cicatrices. Langenbeck observed these particularities, which had been hitherto overlooked, for the first time whilst performing rhinoplasty on the living

patient; he has since, however, found the same alterations in nearly forty crania existing in different collections.

No new bone had been formed in some cases, in which the osseous framework of the nose had been entirely destroyed, but as the details of the morbid process had generally not been recorded, no certain explanation for these exceptions can be given. Langenbeck suspects, however, that either the integument had not been destroyed, but had been retracted into the nares, or that the morbid process had rapidly destroyed the nose, and then been immediately arrested by treatment.

Langenbeck's operation is adapted for the ordinary cases in which there are some remains of the *ossa nasi*, and in which new bone has been deposited along the margins of the *apertura pyriformis*. It may be divided into three portions:

1. A vertical incision from the nasal process of the *os frontis* along the middle line divides the skin covering the cicatricial stump into two halves, each of which is dissected up towards the cheek. Any remains of the *ossa nasi* or of the nasal processes, and the portions of newly formed bone are now exposed.

2. A piece of bone, $1\frac{1}{2}$—2‴ broad, is partially separated from each side of the *apertura pyriformis* by means of a fine saw. The length of this piece must depend on the skin which it will have to support. The bone is then carefully raised by an elevator, leaving it attached to the upper jaw near the lower margin of the *apertura pyriformis*. Thus a bony framework is prepared, to which the skin dissected off in the first part of the operation is attached by thread. Any remains of the nasal bones, which may have sunk towards the nasal cavity, are separated on either side by the saw, the incision passing from the nasal processes perpendicularly towards the frontal bone, and the elevator is again used to raise them to a sufficient height. The suture between the *ossa nasi* and *os frontis* forms a hinge on which the former may be moved.

3. Transplantation of a frontal flap, including, if necessary, a piece of pericranium.

This operation presents the advantage that a nose quite of normal prominence is produced, with very little expenditure of material. For whilst rhinoplasty by means of the frontal skin alone requires a flap at least 3″ broad, the latter measured in Langenbeck's case only an inch. Four months later no change had taken place in the prominence of the nose. Langenbeck has no doubt that this method may be employed with advantage in raising sunken noses.—*Year-Book of Medicine and Surgery*, 1864.

ART. VIII.—*Fractures of the Patella.*

OF the various fractures to which this bone is subject—the transverse, the longitudinal, the stellate and the compound—little need be said of any but the first or transverse, for the treatment of the remainder is well agreed upon, and that which we have found in use differs neither in principle nor in any important particular from

that which is set down in all the good hand-books. Confining the report, then, to the transverse fracture, it will be convenient to begin by referring to some points which will readily lead up to the question of treatment.

In view of the fact, with which every surgeon is familiar, that transverse fracture of the patella is almost never repaired by bony union, it has been suggested that this defective result is due to the poor supply of blood which the bone, isolated as it is by ligamentous and aponeurotic structures, receives. This explanation, however, is made untenable by evidence so short and so conclusive, that it may be inserted here. The patella shows itself capable of perfect repair in cases of longitudinal fracture, where bony union commonly occurs. There are in the London museums patellæ which, after being broken transversely, have thrown out callus in abundant quantity for producing bony union if the parts had been placed under favorable conditions. There are, although they are undoubtedly rare, specimens of patellæ which, after being broken transversely, have been perfectly repaired by bone. C. Bell and William Hunter had a specimen of this kind. And lastly, there is a case mentioned by Sir A. Cooper (*Surg. Essays*, part ii, p. 96), in which a gentleman fractured his patella transversely and the lower fragment likwise perpendicularly. The transverse fracture united as usual by ligament, the perpendicular one by bone. No doubt the true explanation of the infrequency of bony union is to be found in the difficulty which there is in keeping the fragments in sufficiently close apposition. But to this we must refer more particularly when we come to speak of treatment.

The amount of separation of the two fragments from each other at the time of the fracture will depend, as Boyer pointed out, on the degree to which the aponeurotic structures at the sides of the bone are torn. If at the time of the accident the strain on the muscles is sufficient only to snap the patella itself without laceratieg the tendinous structures at its side, these, by bracing the fragments together, will prevent any wide separation ; but should they be torn, the interval will be much more considerable. Hence some cases of this fracture are from the first more difficult to manage than others are.

But the question which is by many degress the most interesting that can be raised here, is that which refers to the condition of the muscles to which the upper fragment is attached, and which asks whether these are liable, by their contraction, constantly to disturb the fracture unless they are prevented from doing so by some special means, or whether they do not rather remain passive, while the limb is at rest, without exerting any such influence.

Although this is part of the much wider question, what is the condition of the muscles generally after fracture—an inquiry much too extensive to be undertaken in the present paper—we cannot wholly avoid it, as out of its consideration there has recently grown a very important modification in the treatment of the fracture now under notice.

It is generally agreed that a muscle exists in two distinct conditions—the elongated and the contracted ; the former being its condition of rest, the latter of activity. Although a muscle when at

rest is not completely relaxed, but is, on the contrary, slightly contracted, or in the state of what Mr. Bowman has termed "tonicity," yet this contraction is so slight that for all practical purposes it may be wholly disregarded, and we may look upon a muscle, when it is at rest, as being completely relaxed and passive, and as exerting no influence at all on the position of a fracture in the neighborhood of which it lies. Now, of course, it is almost a necessary condition for the well-doing of a fracture that the muscles surrounding it should be in this state of rest, so that they may produce no movement or separation of the fragments from each other. It was long a belief among surgeons, that it was requsite to secure this state of the muscles by placing the limb in such a position that they should be "relaxed." Thus, in fractures of the patella, the thigh was raised to nearly a right angle with the trunk, to relax the quadriceps.

This is now known to have been both an unnecessary and a useless precaution ; unnecessary, for it is found that if the limb is placed horizontally, and in an unrestrained position, the muscles are perfectly relaxed and show no tendency to disturb the upper fragment ; and useless, for it is certain that, if the muscles showed any tendency to contract, they could not be prevented from doing so by any position in which it would be possible to place the limb. Moreover, Mr. Hutchinson has pointed out (*London Hospital Reports*, vol. ii., p. 338), that as the *crureus* and the two *vasti* muscles arise not from the pelvis but from the femur, the raising of the thigh cannot alter the relative position of their origin and insertion, since these move equally and to the same extent with each other in any position of the limb. It is strange that the fact that in fracture of the patella the *quadriceps* becomes, after the first few hours, relaxed, should have been overlooked, since its parallel in other fractures has long been insisted on.

Almost every one has met with a case similar to the following, which we lately saw in one of the hospitals. In a boy who was admitted for fracture of the middle third of the femur, muscular action had been so violent that the limb was drawn up to a right angle at the seat of the fracture, and any attempt to bring it down into the straight position was very strongly resisted. As this was so, nothing further was done at the time than to leave the limb in the position it had chosen for itself, on a pillow.

The next day it was found that the muscles were completely relaxed, and the limb was then drawn down into perfect position and length, almost as readily as would have been the case with the limb of a dead person. If the *quadriceps* is examined two or three days after fracture of the patella, it will be found in the same condition of complete relaxation; and it is useless to raise the thigh on the pelvis to relax the muscles, for it is impossible to place a limb in such position as to prevent muscular action. Any one who lies down on the floor, and flexes the thigh on the pelvis to its extreme extent, or the leg on the thigh, or the forearm on the arm, will find that the respective sets of muscles, the *quadriceps*, the hamstrings, and the flexors of the arm, are still capable of strong action, and would certainly be able still further to shorten themselves, if their lower extremities were detached. But for a confirmation of these objections

to the plan of raising the thigh in fractures of the patella, we may appeal to the results of practical experience.

For upwards of three years Mr. Paget has treated all the cases of this fracture that have been admitted under his care at St. Bartholomew's Hospital by simply keeping the limb outstretched horizontally upon the bed, and in several hospitals this practice is now adopted. We have carefully watched many cases so treated, and have examined them both at the time of their discharge from the ward and in some instances several months afterwards, and we have found that the results obtained are, to say the least, as good as those secured by what may now be called the old method. In several patients, indeed, the interval between the fragments was barely perceptible, and on no occasion have we detected any separation that could lead to material interference with the action of the *quadriceps* muscle. This change in the plan of treatment is of considerable importance. It allows the patient to lie in an unrestrained and easy position, which was by no means the case when the limb was raised, and it makes any special bed unnecessary.

In a large number of the cases to which we refer, nothing has been done besides keeping the limb scrupulously in a state of horizontal rest, but sometimes an effort is made to draw the fragments towards each other by means of some kind of apparatus. A large number of contrivances have been invented for this purpose, but they need not be described here, for we do the majority of them no injustice when we say that they are, on the whole, mischievous rather than useful. They are almost all of them open to the same objections. They are inefficient. We have seen instances in which, after they had been applied with all care, considerable separation still remained. A principal defect is that they do not bring the fragments together with the broken surfaces parallel to each other, but tend to produce tilting of the edges either backwards or forwards, so that the fragments are in contact only at the anterior or posterior margin, while a wedge-shaped interval exists between them in the rest of their extent. The interval is usually widest between the front edges, and the difficulty which is often met with in bringing these closely together depends not on the contraction of the *quadriceps* pulling on the upper fragment, but on the fact that the posterior margins are already in irregular contact. Generally these contrivances are apt, by the circular pressure they cause, to lead to injury of the soft parts and to swelling of the knee, and they are a source of considerable discomfort to the patient.

But we must refer to two plans for adjusting the fragments which claim special attention—the hooks invented by Malgaigne, and the apparatus used by Mr. J. Wood, of King's College. Space will allow only a notice of the use of Malgaigne's hooks in London. A description itself of the instrument may be found in Holmes's "System of Surgery," vol. ii, p. 624. In several hospitals Malgaigne's hooks have been tried, but they have found most favor at the Middlesex and at St. George's. We have seen them in use in several cases. The discomfort and irritation which they produce has been generally slight, but some patients suffer considerable pain from their application. In the large majority of cases they have led to no serious inflammation

either at the punctures through the skin or in the knee-joint. But we have heard of one case in which death resulted from suppuration in the knee-joint, and of another in which, after suppuration in the joint spreading widely among the muscles of the thigh and calf, the patient recovered with a stiff joint. It may be doubted whether this apparatus, except, perhaps, in a few rare instances, accomplishes the object for which it was invented, of keeping the fragments so nicely in apposition as to secure bony union between them; for, as the hooks are fixed into the anterior part of the fragments, there is a strong tendency for the broken surfaces to meet accurately only by the anterior margin, while an interval remains between the posterior. It seems very unlikely that this apparatus will ever be generally used by English surgeons. Wood's method consists essentially in drawing the fragments towards each other by pieces of strapping, which, passing around the upper and lower margins of the patella, cross each other at the sides of the joint, and are fastened to hooks on the back of a wide ham-splint. By this means the patella is grasped only at its front and sides, and all circular constriction of the limb is avoided.

In conclusion, we may refer to the great importance to the patient of wearing a stiff apparatus for the knee for some weeks after the period of absolute rest has elapsed. Mr. Erichson advises that a leather splint should be worn for at least three months. If this precaution is not taken, "the union between the fragments, which at first appear in very close contact, will gradually lengthen, until in the course of a few months an interval of several inches will be found between them."—*Med. Times and Gazette*, Oct. 20, 1866.

Medical Pathology and Practical Medicine.

ART. IX.—*Congenital Marks:* By Prof. A. DUGAS, M. D.

THE love of mysticism and the vain desire to account for every thing, have led men into some of the strangest vagaries with regard to the origin, or immediate cause, of those blemishes of the skin and malformations of the body so often observed in new-born infants. The most common interpretation of these "marks" is, that they result from the longing desire of the mother, during pregnancy, for some particular article of food, which article is thought to be faithfully represented by the blemish on the skin; and, as the color of these marks varies from a pink flush to a reddish brown, they are most frequently supposed to be pictures of strawberries, cherries, or other fruit; sometimes of roast beef, ham, etc. Other marks and malformations are attributed to the surprise or alarm of the mother at the sight of some hideous or frightful object during her pregnancy. The locality of the mark is said to be determined by the application of her hand at the time to the corresponding part of her own body. Hence the precaution recommended in such

cases, to apply the hand promptly to some concealed part of the surface, in order that the mark of the child may be covered by his garments and not be unsightly. Woe be to the child, if the mother carries her hand to her face when she is "longing" for a dish of strawberries, or is shocked at the sight of a toad, for the offspring will then be terribly disfigured! These superstitions are so generally known, and, I may say, believed, that it is unnecessary to enter into a more detailed account of them. Let us now examine the matter a little and see if there are any grounds for the belief, or rather if it be possible for such effects to be induced by such causes.

The only rational grounds for the belief are to be found in the occasional coincidence between the alleged cause and effect. But even these are so rare when compared with the countless number of instances in which the effect fails to follow the cause, that they must lose much of their force upon the slightest investigation. Hideous objects have been known to frequent the thoroughfares of London for many months without giving rise to a solitary well-authenticated instance of deformity in anywise resembling them, although they must have been seen by thousands of women, at all stages of gestation. A cause so rarely followed by any effect can scarcely be entitled to be considered as a spectacle carefully to be avoided by women, lest the fœtus *in utero* be made to bear the marks of their temerity. Again, was there ever a woman who, under the influence of the derangement of the functions of the stomach, and the capricious appetite peculiar to pregnancy, did not, more or less, ardently desire some article of diet she could not obtain? And yet how does the number of children born with marks correspond to the number of those who come into the world without the evidence of such longing? This absence of sequence will become more striking, if we bear in mind that, inasmuch as the mother must have, in every instance, desired quite a variety of things, it can never be difficult to assign the mark to some object it may be supposed to resemble.

But science furnishes us the strongest argument against this superstition. The laws of fœtal evolution have been so successfully studied during the present century, that we are now enabled to solve many problems heretofore incomprehensible, with regard both to the *nevi materni* and to the malformations or monstrosities, as they are technically called, which we occasionally meet. Among the principles that bear upon our subject, the following may be mentioned:

1st. That, with the exception of the heart and organs of digestion, the early product of conception consists of two lateral and symmetrical halves, which subsequently come together and are agglutinated upon the median line so as to constitute one body.

2d. That the process of evolution proceeds from the periphery to the centre; those portions most remote from the median line being formed first, and the others last. Hence, the fingers are formed before the hand, this before the forearm, and the arm proper still later; the ears exist before the eyes, these before the nose; and so also with regard to the trunk.

3d. That any arrest or cessation of evolution before it be completed must result in malformation, corresponding to the stage of evolution at the time of its arrest. If, for example, after the hand

has been eked out of the body, the process of evolution be arrested, the child will be born with a hand where the shoulder should be, and consequently with neither forearm nor arm. If, after the formation of the ears, head and eyes, there be no farther evolution, and the two halves become then agglutinated, the nose and the central portions of the upper jaw will be wanting at birth. Cyclops are thus formed by the union of the lateral portions of the head just at the time when the outer half of each eye has been completed. The arrest of evolution leaving only one-half of each eye formed, these halves have come together so accurately as to resemble one perfect eye on the median line. Cyclops can never have a nose, because of the arrest of evolution, and of the union which has taken place before it could be formed.

4th. The failure to unite the two halves at any point of the median line must leave fissures where none should exist. Hare-lips and cleft palates are thus produced.

5th. Whenever two products of conception or distinct fœtuses become united during their evolution, the connection always occurs between homologous parts; or, in other words, parts dissimilar in the two never unite. Union takes place of face to face, back to back, side to side, sternum to sternum (as with the Siamese twins), shoulder to shoulder, etc.; but we never find the face of one united to the back of another, nor the shoulder to the hip, nor any union of parts dissimilar.

6th. The process of evolution may be excessive as well as incomplete; when excessive in certain portions of the capillaries, these blood-vessels, which are in the normal state too small to be seen with the naked eye, now become so large as to carry red blood and to impart to the locality (if in the skin) a corresponding degree of redness. This is the way in which marks are formed. An excess of evolution may also produce supernumerary fingers or other appendages.

With these principles in view, we must be prepared to admit that, if the emotions of the mother ever affect the fœtus so as to induce deformity, this must be done at the precise time at which the deformed locality is undergoing evolution; for the difficulty would much increase if we had to presume that, after evolution had been completed, the emotions of the mother would destroy it and reproduce an anomalous one in its place. In the case of hare-lip, for example, which is one of the simplest deformities resulting from a failure of timely agglutination of the parts, to suppose it to be induced by an emotion occurring after the formation of a healthy lip, would be to admit the possibility of the destruction of normal tissues and the extension of skin over the edges of the newly-formed fissure.

One of the most hideous deformities, and one unfortunately too common, is that which results from an arrest of evolution before the development of the brain and cranial bones. The child is then born with neither brain nor head proper, while the face is fully developed, which gives it a monstrous appearance, not unfrequently compared to a toad or bull-frog. Would it not be taxing the credulity even of a fanatic in such matters, to suggest that any emotion of the

mother could induce the destruction of such extensive and important organs after they had been formed? The cause, whatever it may be, which gives rise to such a deformity, must be operative before the evolution of these portions of the body; for it clearly results from an arrest of evolution. I may be permitted here to cite an instance somewhat analogous, which was attributed by the accoucheur, a physician of high standing and of large experience, to the sight of a giraffe during the last month of pregnancy. The child presented a deformity of the head, which was said to assimilate it most strikingly to a giraffe. I requested permission to examine the monstrosity with the gentleman in attendance, and found it to be simply a case resulting from an arrest of evolution in the cranial bones; but not in the brain. The consequence was, that the hemispheres of the brain, not being bound down by bony matter, stood up somewhat like cones; and these were the bodies supposed to correspond to the ears of the giraffe! In all other particulars the child was well formed, and lived several days. Now, if the sight of the giraffe had had any thing to do with this deformity, it must have occasioned the destruction of the whole scalp and of all the bones of the cranium in the course of the few weeks which elapsed between the unpleasant spectacle and the birth of the child. And yet it is probable that this wonderful effect will be handed down from generation to generation among the credulous friends who witnessed it, as positive evidence of the correctness of their belief! Almost every family circle hoards up some story of the kind, in which the most circumstantial details are given to establish authenticity; but although I have sought every opportunity to investigate the correctness of the inferences, I have never yet seen one which would sustain the belief in the slightest degree.

Is there any reason to believe that emotions of the mother's mind can affect the evolution of the fœtus *in utero?* This is an interesting question to physiologists, and one that has engaged their serious attention from time to time. In order to answer it, we must first determine the ways, or means, by which communication is established and kept up between the mother and the fœtus. There is between the two an obvious communication by means of the blood; for it is through the mother's circulation that the fœtus is nourished. The placenta is attached to the inner surface of the uterus, whence it continually derives nutritious blood from the mother, and returns that rendered unfitted for this purpose by its course through the fœtal vessels. So far as the minutest anatomical investigations may be relied upon, there is no nervous communication whatever between the two. No nervous filaments have ever been found running from the uterus to the fœtus. I believe that some anatomists have imagined that they traced nervous filaments into the placenta, but I can just now recall none who pretend to have followed them any farther. In the present state of our knowledge, we cannot admit that there exists any other than a sanguineous communication between the mother and fœtus; and this seems to be all that is necessary for the well-being of the product of conception. If analogy be worth any thing in settling such questions, we should observe that in oviparous reproduction all communication is cut off as soon as the egg becomes

encased in the shell. The chick is nourished and developed at the expense of the pabulum enclosed in the shell. This yolk, or pabulum, having been supplied by the mother in sufficient quantity, all communication is cut off, and with it the nervous influence, if any previously existed. It should also be remarked that malformations are exceedingly common in our domestic fowls, and that they occur in strict accordance with the principles we have adduced as governing them in the human family.*

In conceding that the fœtus *in utero* derives its nourishment directly from the mother's blood, it follows that the development of the fœtus may be influenced by the quality of the food supplied. But, while this might affect the development of the body as a whole, it is not easily understood how it could affect only certain localities, and, still farther, do so under the temporary influence of a desire for special articles of diet, or of a sudden emotion, however strong. A mother pining away under protracted derangement of the functions of digestion, or long-continued grief, which might likewise impair her functions of nutrition, might give birth to a puny child; but this does not reach the cases under consideration, in which the defects are altogether local. Indeed, it is generally found that those who are born with malformations, referred to an arrest of evolution in a certain locality, are rather prone to an excess of evolution in the unaffected parts of the body.

Finally, if the mental emotions of the mother ever reach the fœtus, this must be done through the nervous system, which can alone convey them from the brain. We know of no other channel through which the operations of the brain may be conveyed to the other parts of the system. It is through them that the brain receives the impressions made upon all parts of the organism, and it is likewise through them that the mandates of the will are transmitted to every muscle of voluntary emotion. If there be no nervous communication between the mother's brain and the system of the fœtus, and none has ever been detected, is it not preposterous to attribute an extensive and most curious class of phenomena to the influence of the mother's mental condition upon the intra-uterine offspring?

There is no denying the occasional occurrence of coincidences well calculated to impress the unreflecting classes of society with a belief in the superstition we are combating. The case I have cited, in which the sight of the first giraffe that was brought to this city was followed by the birth of a child deformed in that particular manner, carried conviction to the minds of those who may have doubted before; and especially when sustained by the credulous accoucheur. It is probable that any other deformity would have met with the same interpretation in that case, for the menagerie containsd quite a large collection of wild beasts, some one of which would have supplied the place of the giraffe, if this had not answered the demands of the imagination. If the child's skin had presented a number of marks, the leopard might have been made to father them.

* The Medical College of Georgia contains a very valuable collection of monstrosities, not only human, but also representing nearly all our domestic animals. In every instance, whether of single or double monsters, the same laws are observed, and the deformities of the lower animals correspond exactly to those in the human subject. Will it be urged that the mental emotions of the hen, the cow, the mare, the sow, etc., have occasioned these modifications of development in their young?

I saw another striking case of coincidence, which occasioned quite as much sensation as the one referred to. I was requested to visit a little negro who was suffering with paraphymosis, attended with retention of urine, and was waited upon by a negress in her last month of pregnancy, who assisted me in drawing off the urine with a catheter and in reducing the strangulation. About a month after this a messenger came for me, stating that this woman "was delivered the night before of a son who was affected just as the other little negro was, and could not pass his urine." I found accordingly that the new born infant had a fissure of the prepuce, resulting from an arrest of evolution, and an occlusion of the *meatus urinarius* by mucous agglutination, which prevented the escape of his urine. The meatus being opened with a probe, the urine was immediately passed off. Nothing could be more conclusive, and it is needless to add that no argument I could adduce had the least influence in shaking a faith so strongly confirmed. And yet, in this case, the fœtus was eight months old when the unpleasant sight was witnessed; his genital organs were then, of course, fully developed, or rather deformed, in the way in which he came into the world. If they were not deformed at eight months, how could they become so at a later period? The history of dreams, and of coincidences in general, is full of curious and inexplicable facts, which we must admit, but which we should be careful not to invoke in support of superstitions entirely at variance with sound knowledge and subversive of all we know to be true.

We are now prepared to understand the philosophy of the simplest, as well as the most complex, deviations from the normal evolution of the body; and if we cannot fathom their remote or ultimate cause, the reason is to be found in the law of nature which fixes a limit to our understanding. We know the ultimate cause of nothing whatever. Why does an apple fall to the ground? Newton has discovered the *law* by which this is effected, and answers that it is attracted by the earth. But why is it attracted? We can go no farther. The discovery of the law is the limit of our abilities. We are continually asked why it is that one person is born with blue eyes and another with black; why is one person fair and another brown; one with good teeth and another with bad ones! We know the laws by which all these peculiarities are brought about, but can not divine why these laws have thus controlled the evolution of each individual so as to make it different from others.

Nevi materni may involve the blood-vessels, the pigment coat, and the hair follicles separately or jointly, and be slightly raised above the general surface, or not at all so, giving very different appearances to the "marks."

When the blood-vessels of a certain part of the skin are in a state of hypertrophy, or of excessive development, the "mark" presents various hues of red from a slight flush to crimson, according to the different degrees of hypertrophy and quantity of blood there concentrated. These marks are more florid in the spring and summer, when the cutaneous circulation becomes more active, which circumstance is attributed by the vulgar to the relation the marks bear to certain fruit which ripen and turn red at that time.

Although this condition of the blood-vessels usually remains stationary after birth, instances are not rare in which, if not excessive, it gradually disappears. I have seen a number of children born with slight florid marks on the face, which entirely disappeared in one, two or three years, without any interference. Sometimes they are cured by the supervention of some disease. A child a few months of age was brought here from the country with quite an extensive red *nevus* on one side of the face and lips. A surgical operation was proposed for its destruction, which I opposed, because of the danger it involved. The child, fortunately, escaped the ordeal, and was taken home. Not very long afterward, the whole face became invaded with crusta lactea, which ran its usual course, with the exception that it was worse over the *nevus* than elsewhere, and left the child relieved of her congenital deformity.

But sometimes the hypertrophy goes on increasing after birth, or may begin to do so in the adult, so as to result in a very formidable disease. They occasionally degenerate into malignant affections more or less unmanageable.

An excessive or perverted action of the pigment coat, by which the coloring matter of the skin is secreted, will produce patches more or less dark; and if the hair follicles are also affected, these marks may be covered with a more abundant growth of hair than the adjacent surface. An arrest of the evolution of the pigment coat in the whole skin of a negro will make him an albino. White rabbits, white mice, white crows, etc., are all produced in like manner; and it is curious that in all these cases the coloring matter of the eyes is equally wanting; hence the intolerance of light, with which they suffer.

In some cases we find the development of hair growth to be excessive and general. The hirsute woman and children, who exhibited themselves throughout our country some years ago, were striking instances of this kind. Simply bearded women are more common.

Hare-lip and *cleft palate* we have seen to be dependent upon an arrest of the union of the lateral parts of the body before its completion. This occurs occasionally in the spinal column. The whole, or only a portion, of the posterior surface of the spinal canal remaining open, the watery fluid, which fills the membranes by which the spinal marrow is surrounded, accumulates. As these membranes are not supported by the usual bony walls, they gradually yield, until they form a large pouch projecting from the affected region, and give rise to considerable deformity. This is what we denominate *spina bifida*. It is not only a malformation, but a frightful disease, which goes on increasing, and is necessarily fatal.

I have already noticed some of the most striking cases of deficient evolution in the brain, cranium and scalp. Children may be born with imperfect hands, feet and limbs; sometimes without any at all.

The most curious monstrosities are those which result from the union of twins. In the case of the Siamese twins, so generally known, it seems that their development went on naturally and separately until they were brought in such close contact that they adhered or grew together just at the lower end of the sternum or breast-bone. Why did not the sternum of the one adhere to some other part of

his brother? Simply because the *law* which governs such cases forbids it. Instances are on record in which twins have been thus cemented by the soles of their feet, others by the crown of the head, some face to face, back to back, side to side, etc. In all of these cases the individuals were at one time separate and distinct, and the subsequent union does not obliterate their individuality, however great may be the apparent fusion of both into one. *Ritta Christina*, extensively known in Europe, had two heads and necks, four arms, and only two legs. From the umbilicus down there appeared to be but one child—a well-formed girl. While one head was asleep, the other might be awake and playful, or crying. They lived upward of a year, when one of them sickened and died; the other, in good health until then, gasped and died, also, immediately. A post-mortem examination showed that their brains, spinal marrows and nerves were distinct; that they each had a heart, but that these were inclosed in a common sac, or pericardium; that the digestive organs were distinct down to the large intestines, where they became merged into one canal. It was thus explained why their appetite was distinct, whereas their desire to defecate was common or simultaneous. Pain was perceived by the right head when the corresponding leg was pinched, and by the left when the same impression was made upon the other limb. Now, what had become of the missing portions of each body? They were absorbed or destroyed by the pressure by which the individuals had been forced together, when the tissues, being in a soft and almost gelatinous state, would readily lose their vitality.

Sometimes the pressure operates unequally upon the two beings, and results in the destruction of a very large portion of one body, while the others have not suffered. We then have fragments of one body attached to another, which is otherwise well-developed. A cow was to be seen in our streets for a number of years which had the fore-leg of a twin dangling from her shoulder. It is remarkable that in all these cases the fragment, however large or small, obeys the law already enunciated, and unites only to a corresponding portion of the body of the other.—*Southern Med. and Surg. Jour.*, Oct., 1866.

Art. X.—*The Microscope in Pulmonary Disease.*

WE have been recently directing the attention of our readers to the application of the thermometer as a very practical and reliable aid in the diagnosis of disease, and particularly in the diagnosis of tuberculous disease. We must now say a few words about the use of the microscope. Every practical man is aware that a good deal may often be gleaned from an ordinary examination of sputa, but there are probably very few who know how much information a microscopical examination may give, the great delicacy of the test, and the important nature of the evidence afforded. It has been known for some time that elastic fibre was occasionally present in the expectoration of patients laboring under ulcerative disease

of the lung. Van der Kolk, Dr. Andrew Clarke and Dr. Bennett have directed the attention of the Profession to this subject; but there were many difficulties in the way, and the examination was so tedious, and often so unsatisfactory, that the microscope is rarely used. Physicians preferred to place all their reliance on the stethoscope, and seldom indeed employed the microscope, although it is at all times a very useful adjunct, and occasionally the evidence it affords will be very decisive where the stethoscope fails.

The attention of the Profession has been directed to this subject by Dr. Fenwick, and we would strongly urge our readers to peruse the abstract of his paper read before the Medico-Chirurgical Society. Dr. Fenwick has investigated the subject with great care and labor, and he has hit upon a process for examining the sputa which appears to be both easy and satisfactory. Although our experience is a limited one, it has been sufficient to assure us of the value of Dr. Fenwick's observations, and to corroborate the accuracy of his description.

Every one has met with cases in which the physical examination of the chest fails to afford *decisive* evidence of tubercle, in persons whose symptoms were very suggestive of its presence. Among such cases are the following: 1st, where the amount of tuberculous deposit is small, seated towards the posterior aspect of the apex, and leaving a comparatively insignificant cavity on breaking up; 2ndly, when the symptoms of tubercular disease become engrafted upon an old bronchitis, the patient bringing a history of chronic cough, recurring every winter and ameliorating every summer, and bronchial râles overwhelm all the other sounds; 3rdly, where emphysematous disease overlies the tuberculous, and counteracts or conceals the dullness it induces; 4thly, where pulmonary phthisis becomes superadded to, or grows out of, the symptoms of a pneumonia. It would be tedious and unnecessary to detail instances of these complications, but we recently witnessed an example of the last-named in the person of one of our most accomplished provincial Surgeons.

Hæmoptysis and consolidation of a whole lung followed an injury of the chest; the dullness was gradually clearing away from base to apex, but persisted in the latter region, and the evidence of breaking up of the pulmonary tissue became clear. The question came, was this disintegration due to ulcerative tubercular, or to pneumonic, softening? Dr. Fenwick was kind enough to examine some of the expectoration in our presence, and there could be no doubt whatever about the presence of several small portions of elastic curly fibre in it, in addition to a portion of a small bronchial tube, and the casts, as Dr. Fenwick surmised, from some of the follicles in the pharynx. The patient, curiously enough, remarked that he thought his cough was in part reflex, and due to the irritation caused by a sore place in his throat. He died about five weeks afterwards.

The intra-cellular lymph present in pneumonic consolidation, under ordinary circumstances, undergoes a liquefactive, fatty, or semi-purulent transformation, and the permanent structures of the lung may never be involved in disintegration. Under other circumstances, these structures undergo such disintegration, in the form of an acute or chronic ulceration; but when tuberculous deposits soften, the tis-

sues in which these are placed would appear to be invariably involved, and we may obtain evidence of the fact by the detection of yellow fibre constituents of the pulmonary cells in the expectoration when examined with the microscope. We hope that Dr. Fenwick will continue his labors, and tell us the characters of the expectoration in other morbid processes, and when, and under what circumstances, pulmonary tissue is to be found in it.

On the one hand, it must be allowed that the microscope does not avail us in the most anxious stage — the primary deposit stage of phthisis; but on the other, softening and molecular disintegration are more frequently present than is commonly thought where the stage of deposit only is supposed to exist, and the microscope then becomes the only instrument capable of demonstrating it. Dr. Fenwick says lung-tissue was discovered in the sputa in 13 out of 24 cases where the earliest stage of phthisis was suspected.

We must remember that the second and third stages of this disease are artificial creations in reality. There is no actual and natural separation, save one of degree, between the stage of softening and cavity. They form very practical and very necessary divisions for a description of the process of pulmonary tuberculosis; but still, where a single tubercle becomes softened and expectorated, a solution of continuity has taken place in the organ. Now, it is in the stage of softening that the microscope is so useful, because it gives us the earliest intimation of its existence. Although portions of yellow elastic fibre may be commonly detected in the case of a chronic cavity, yet it is during the formation of such cavities that these elements of the pulmonary tissue are most abundantly, and most certainly present in the expectoration.

The process followed by Dr. Fenwick is the following: A solution of pure caustic soda should be kept of the strength of about fifteen grains to the ounce of distilled water. An equal quantity of this and the sputa to be examined should be employed. The mixture is then to be boiled for two or three minutes in a wide beaker over a rose gas-burner or spirit lamp. It is then to be poured into a large conical-shaped glass, three or four times its bulk of cold distilled water gradually added, and the whole set aside, in order that all the particles not capable of solution in the soda may subside. The deposit may then be placed in shallow cells for examination.

A word as to the delicacy of this test, because it will serve to remind us of the precaution and care required. As a test increases in delicacy, the necessity for accuracy in its performance increases in a direct ratio.

One-tenth of a grain of lung-tissue was divided by needles into ten parts, and the 100th of a grain thus obtained was placed in the expectoration of a person affected with bronchitis, and treated in the way we have described. The piece of lung-tissue was easily discovered by the microscope, the expectoration having been proved by previous examination to contain none. But as $\frac{1}{100}$th part of a grain of lung-tissue consists of from twenty to thirty cells, and as the presence of elastic fibre can be determined with certainty by means of the microscope in even half a cell, it is evident that it might be possible in this way to detect the $\frac{1}{4000}$—$\frac{1}{6000}$th of a grain of pulmonary tissue in

sputum. Such minuteness is, however, never requisite, as we no more expect to meet with part of an isolated air-cell than to be consulted by a patient with a single tubercle in his lungs.

The hollow tubes to be employed as pipettes must of course be perfectly clean. To prevent the adhesion of anything to the glass, a current of water ought to be made to run through them from a tap, and it is also well to pass one of the small wire brushes used by smokers for cleaning the stems of pipes down the tube.

The fluid which is in contact with the sides of the conical glass near its bottom should be selected, for it is here that the minute portions of lung-tissue are more frequently found. It is very important, also, that a large surface and a very thin layer of fluid should be used for examination — the first, in order to secure a larger field of observation; the second, to insure that the pieces of delicate fibre be detected, and not overlooked by reason of their floating in a thick layer of fluid.

The soda solution injures brass and dissolves marine glue and Canada balsam. A piece of flat glass should therefore be placed on the stage of the microscope. By using a very thin sheet of "vulcanite," about the thickness of a visiting card, one can punch out large cells very easily and quickly. These may be made to adhere to the slides by means of a cement used by philosophical instrument makers: then a thin glass cover is placed over the fluid, and all is ready for the microscope.—*Med. Times & Gazette*, Oct. 13, 1866.

ART. XI.—*The Organic Impurities of Water:* By WILLIAM PROCTOR, M. D., F. C. S.

THE injurious effect which the use of impure water produces on the health is a fact which is universally admitted. The evidence in proof of it is insuperable, and Dr. Snow has shown indisputably the great influence which foul water as a vehicle of the morbid poison had on the spread and mortality of cholera. The source of the evil is found in the organic impurities, either visible or invisible; and whether we adopt the doctrine of Liebig, that the effects are produced by a species of fermentation set up by the introduction of decaying matter into the system, or the opinion that it acts directly as a poison, the fact remains the same. The noxious influence of this matter is increased by its solubility in water. Water at 32° dissolves scarcely any amount, but at 40° one or two grains are dissolved in ten or twelve hours. Ronalds and Eyre, in experiments with regard to the action of water on peat, found that at 67° nine grains, and at 84° fourteen and a half grains, were dissolved in forty-eight hours; the deduction from these facts being, *cæteris paribus*, that in summer water contains more organic matter than in winter. The atmosphere is a source of these impurities, so that water exposed in tanks, etc., acquires by absorption the germs of *algæ* and *fungoid* vegetation, or even of animalcules, and by the decomposition of matter obtained in this manner, becomes vitiated.

Light expedites the change, and it is accelerated by stagnation and retarded by motion; hence the difference in purity between stagnant waters and streams. The quantity of organic matter existing in water depends essentially upon circumstances. In streams the percentage of injurious constituents is regulated by several conditions, such as wet or dry seasons, the amount and quality of sewage discharged into them, etc. In wells, this result will be controlled partly by the nature of the strata through which the water passes, but more particularly by the situation which admits of the infiltration of decomposing or offensive matter into them.

The organic impurities of water are of two kinds: they occur either in a state of solution or in a solid form. The nature of the latter can be readily ascertained either by the naked eye or by the aid of the microscope, and consists of living or dead animal or vegetable matter. But the former, being in a state of solution, allows of no such investigation, and, being generally accompanied by the presence of carbonic acid and alkaline nitrates (the result of decomposition), communicates a sparkling appearance and cooling taste, rendering the water deceptively agreeable to the palate. There is a curious circumstance with regard to the production of the different kinds of organisms found in water. If the water is alkaline, *infusoria* chiefly show themselves; but if acid, *fungoid* vegetations are more extensively found. This statement admits of verification by experiment: if a small quantity of albumen is mixed with water, in a few days more or less putridity is exhibited, with the development of animal and vegetable life; but, if previous to the decomposition the liquid is rendered alkaline, it rapidly putrefies, animalcula are developed, and it speedily becomes in the highest degree offensive. On the other hand, when the water is acidified, the impurities will be found to be composed entirely of *fungoid* vegetation.

Almost all water contains some organic matter derived from the soil. Even that from the granite districts contains from 0·3 to 0·7 grains per gallon, whilst water which has permeated vegetable soil may afford 12 to 30 or even more grains per gallon.

Confining our attention only to the soluble organic matter, this will be found to be of two kinds—(1) non-nitrogenous, composed of carbon, hydrogen and oxygen, the result of vegetable decomposition; (2) nitrogenous, made up of carbon, hydrogen, oxygen and nitrogen, from the decomposition of animal matter. Occasionally sulphur and phosphorus are added to these constituents; but when this is the case, the odor produced by the resulting sulphuretted or phosphuretted hydrogen at once reveal their presence. Therefore, practically, the elements of noxious and insidious organic matter will be carbon, hydrogen, oxygen and nitrogen. An invariable result of the decomposition of all animal matter is ammonia, and as the result of a similar change on vegetable matter, Hermann has given a list of ten distinct substances. But, without entering into needless detail, we will simply consider the general results of vegetable decay.

When the vegetable mould or humus is boiled with an alkali and an acid is added to the filtered solution, a brown precipitate falls, which (according to Mulder) consists of—

Humic acid.....$C_{40}H_{12}O_{12}$
Ulmic acid.....$C_{40}H_{14}O_{12}$
Geic acid.....$C_{40}H_{17}O_{17}$

These substances are all soluble in alkalies and precipitated from that solution by acids. There are two other constituents of humin, the so-called crenic and apocrenic acids, to which the term "acid" is improperly applied, as they are soluble in acids as well as alkalies. In the formation of these acids no notice has been taken of the contemporaneous formation of carbonic acid and carburets of hydrogen. The decomposition of animal matter gives rise to an extensive series of compounds, among which ammonia and the nitrates prevail largely with the fatty acids and other substances not well understood. One great character of the organic vegetable acids, the result of decomposition, is their disposition to unite with ammonia—in fact, unless prepared pure by artificial means, they always occur in water with 2·5 to 7 per cent. of ammonia.

The sources of nitrogenous organic matter are evident and numerous, and are derived from animal *excreta* or from decomposing animal matter and the refuse of manufactories. The contents of sewers or cess-pools drain into springs or rivers, or the water permeates soil more or less impregnated with these things. Water may be contaminated in this manner by a nuisance at a considerable distance from it, but dependent on the porosity or tenacity of the soil. Professor Ansted states that the deepest (non-artesian) well will not drain a circle which is more than half a mile in radius.

Organic matter in water may be detected by adding to it a few drops of solution of gold and boiling; in proportion to the amount of organic matter, the gold is reduced and precipitates as a dark powder. The alkaline permanganates are extremely useful in this respect: when solutions of these salts are placed in contact with oxidisable organic matter, they speedily lose their beautiful pink color, the solution becomes colorless, depositing at the same time a brown precipitate. The addition of a few drops of permanganate of potash to water, and undergoing this change, indicates the presence of organic matter. The rationale is simple. The permanganate of potash is a substance rich in loosely combined oxygen; with that agent it oxidises the organic matter which is destroyed, the permanganic acid itself is deoxidised, reduced to the binoxide, and precipitated. Dr. R. Thompson made a general estimate of the quantity of organic matter by a series of solutions of different strengths, noting the time required to destroy the several colors on the addition of a given quantity of the water to be examined.

The estimation of the actual amount of organic matter present in water is of vast importance, and is not a matter of difficulty. This is obtained chiefly by two methods—(1) Evaporate a known quantity of the water in a platinum dish on the water bath, having previously added a measured quantity of a solution of carbonate of soda of known strength. The evaporation being completed, the dish is exposed to a temperature of 248° to 260° in an oil bath, and continued until it ceases to lose weight. It is now weighed, and the weight of the dish and the carbonate of soda being subtracted gives the amount of solid residue in the quantity of water employed. The

dish with the residue is now exposed to a dull-red heat until all the organic matter is destroyed. When cool a solution of carbonic acid is added, and the dish again dried until its weight is constant. The difference between this last weight and that before ignition represents the amount of organic and other volatile matter present. (2) The other method of estimation is by permanganate of potash, and has been carefully investigated by Dr. Woods (*Jour. of the Chem. Soc.*, June, '63). Weigh one gramme (15·43 grains) of dry permanganate of potash, and dissolve in 1 litre (35·28 fluid ounces, of pure distilled water, then graduate the solution with oxalic acid by taking 40 c. c. of centinormal oxalic acid (*i. e.* 0·63 grammes of the acid in 1 litre of water) in 300 c. c. of pure water and 2 c. c. of sulphuric acid, heating to 140° Fahr., and dropping in the permanganate from a buvette; 13 c. c. of the pink solution should be exactly decolorised. If not, the correction must be made by a little calculation. Then take 1 litre of the water to be examined, add 2 c. c. of strong sulphuric acid, heat to 140°; remove the heat; drop in the standard solution from a buvette, stirring continually, and stop when the faintest pink tint is perceptible. If after a time this disappears, add a little more of the permanganate, and so on until a tint permanent for half an hour is obtained. Then read the number of c. c. used; deduct 0·24 c. c. as the quantity of permanganate necessary to give a red tinge to 1 litre of water. We have now the quantity of permanganate decolorised by 1 litre of water, and Dr. Woods has ascertained that 1 c. c. of solution of the above strength is decomposed by 0·005 grammes (=5 milligrammes) of oxidisable organic matter; therefore multiply the number of c. c. of permanganate solution by 0·005, and the result gives the amount of organic matter in grammes per litre, or, to bring it to grains per gallon, multiply it by 70. This gives of course only the amount of oxidisable organic matter, and is used by Dr. Frankland and others to determine the amount of oxygen necessary for this purpose. Therefore, nitrates, etc., may exist and not be detected by this process. It is not applicable to waters containing protosalts of iron or hydrosulphuric acid.

Having in this manner proved the existence and quantity of impurity, the next point for consideration is the purification of such water. Ordinary filters simply remove suspended matters; ebullition destroys (and vast is its importance) the vitality of animal and vegetable impurities. But filtration carried on through sand and clay, or animal charcoal, not only deprives water of mechanical impurities, but, in the latter case especially, removes from it organic matter most effectually, and in all probability by a process of oxidation.

The tendency of the physiology of the present day is to show that the origin of zymotic diseases is due to the presence of living germs capable of remaining dormant until they are placed in a condition appropriate and necessary for their development. If this is so, and such sources of disease may exist in water, it is questionable if they are, like dead organic matter, susceptible of destruction by oxidation. It is a certain fact that these organisms are capable of destruction by a number of caustic substances, as salts of iron, carbolic acid etc., which are impracticable when water has to be used for dieteti

purposes. The temperature of boiling water likewise destroys the vitality of these germs, admits of practical application, and is in this respect a perfect purifier. Whilst it is doubtful how far the use of filtration through charcoal and permanganate of potash is effectual in the removal of insidious living germs, no doubt can exist of its efficacy in the removal of dead and noxious organic matter. Hence, by a combination of these three methods, the danger of disease from these sources is removed.

Dr. Medlock has offered a suggestion for the removal of organic matter from water. He observed that water of this description had the amount of organic matter materially lessened after passing through iron pipes — the action of the metal upon that matter being an oxidising one, converting the nitrogen into nitrous acid, and in this manner breaking up the affinities of the carbon, hydrogen and oxygen. He states that, by allowing water to remain in contact with a coil of iron wire for twelve hours, all trace of organic matter is removed, or that it is converted from a soluble into an insoluble state, and in this condition capable of being removed by ordinary filtration.

The superiority of the permanganates for purifying water over filtration through animal charcoal may be shown by passing water containing organic matter through the latter substance; on testing this filtered liquid with Condy's fluid, it will become in many cases decolorised. The simplicity of the process is one of its great advantages, and even if, from careless application, a portion of the salt is left in solution, or of the peroxide of manganese in suspension, no harm can result. But if the adjustment is carefully made, all the metallic oxide is precipitated, as well as the carbonate of lime (if present) held in solution by excess of carbonic acid, which is neutralized by the liberated alkali of the permanganate, and the water by simple decantation is obtained pure, except probably (when used alone) in the destruction of some organic germs.

In sulphur water—*i. e.*, that containing hydrosulphuric acid, sulphurous acid, etc.—the color will be destroyed in the test (on account of the deoxidising properties of these gases) without the presence of organic matter, and the water left free from the impurity with the precipitation of the oxide of manganese and free sulphur. If sulphide of ammonium is present, carbonate of ammonia is formed. Lead, iron and copper can be separated from water by the same method.

In the application of these salts to the purification of water on a large scale, many questions of economy are involved, but, as Dr. Letheby remarks, "it must not be forgotten that only a small part of the water delivered by a company is used for primary domestic purposes, the great bulk of it being employed for flushing closets, drains and sewers, for watering streets, and for many manufacturing purposes. It would therefore manifestly be an unnecessary wasteful application of a tedious and expensive process to do that at the works which can be so easily, so surely, and so much more economically done at the point of consumption."

Water which is employed for drinking purposes should possess the following qualities: It should be clear, colorless, inodorous and

tasteless; it should be well aërated, and especially cool. It is difficult to fix the exact amount of dissolved constituents. As a general rule, subject to limitation, it should not contain more than—of organic matter, 1 grain; of carbonate of lime, 16 grains; of sulphate of lime, 3 grains; of chloride of sodium, 10 grains; of carbonate of soda, 20 grains, per gallon.

Great as may be the injury which is entailed on the health of a population by the use of water containing animal and vegetable matter, the manner in which the water supply is conducted in many towns has the effect rather of increasing than diminishing this sanitary evil. The employment of open conduits, reservoirs and cisterns, with free exposure to both light and air, is the very condition adapted to promote the growth of animal and vegetable life, to assist their decay, and to facilitate the absorption of contaminating matter from the atmosphere, and charge the water with soluble impurities. This state of things has moral as well as physical evils dependent upon it. The visible polution, absence of coolness and aëration indispose the poorer population to the use of water as a beverage, and too often, it is to be feared, drive them to the habitual indulgence in intoxicating liquors. In a sanitary point of view the absence of a continuous supply of water which exists in many towns is of great importance, and is to be highly deprecated. To the poorer classes it is a great evil. One or more water taps are supplied for a few hours each day, and serve to furnish probably many houses in a yard or small street. Some vessel is filled daily from this tap, and the water allowed to stand in, perhaps, their only close and badly ventilated room; it becomes speedily polluted by absorption, is deprived of its gases, and loses coolness, aëration and purity.—*Medical Times and Gazette*, Sept. 8, 1866.

Art. XII.—*The connection between Epizoötic and Epidemic Diseases.*

THOSE who have had occasion to study the history of the great epidemics which at various epochs have desolated almost every country, must have observed that it is generally recorded that these outbreaks of pestilence amongst the human race have been preceded or accompanied by epizoötics among the lower animals. Thus, in his account of the epidemic which ravaged the Grecian army during the siege of Troy, Homer points out that the contagion was first developed in the lower animals—

> "On mules and dogs the infection first began,
> And last the vengeful arrows fixed in man."
> (*Pope's Iliad*, i, 50.)

Livy, too, speaking of the epidemic fever which raged in Rome, in the Roman year 576, stated that the disease was first observed in cattle before it attacked mankind—"Pestilentia, quæ priori anno in boves ingruerat, eo verterat in hominum morbos." (*Livy*, lib. xli, 21.)

In the foregoing citations from the early Irish and Anglo-Saxon

Chronicles, I have already shown how constantly the connections between cattle plague and some succeeding epidemic pestilence was observed, and consequently I need not here again refer to these annals. I shall, therefore, pass at once to the fourteenth century, so memorable in the history of epidemic plagues, when the "Black death" repeatedly swept through Christendom, and in its irresistible progress reduced the thickest centres of population to all but uninhabited solitudes. And at this time we find that the relationship of epidemic to epizoötic disease was well illustrated. Every outbreak of the "Black death" being preceded or immediately succeeded by the appearance of a murrain or plague of a similar type among cattle. This was the case in England, in the year 1348-49, when, as Dr. Hecker has observed —"The plague which then seemed to be the sole disease, was soon accompanied by a fatal murrain among cattle. Wandering about without herdsmen, they fell by thousands; and, as has likewise been observed in Africa, the birds and beasts of prey are said not to have touched them." ("Hecker's Epidemics of the Middle Ages," p. 28.) A century later the sweating sickness was also accompanied by murrain in England.

In his "Account of the Plague in London" in 1665, Dr. Hodges states that: "On the year before the late pestilential sickness, there was a very great mortality among the cattle from a very wet autumn, whereby their carcasses were sold among the ordinary people at a very mean price; and a great deal of putrid humours in all likelihood produced from thence. And this, in the opinion of many, was the source of our last calamities; and many knowing persons ascribe the pestilence to this origin, as the morbid disposition which such a feeding must needs subject the people, could not but facilitate both the infection and progress of that fatal destroyer." (P. 59.)

In another part of the same work, Dr. Hodges says: "Moreover, in this regard we may consider the frequent mortalities amongst cattle which forego an infection amongst mankind; for these creatures living for the most part in the open air, not only are more influenced by it when tainted, but are also hurt by the infectious venom which gathers upon the herbage; as, likewise, they are more liable on other accounts to feel its first approaches, because its freest progress is in open places." (*Loimologia*, p. 142.)

In one of the pamphlets on the cattle plagues of the last century, entitled "An Essay concerning the Pestilential Contagion occasioned by the Distemper now Raging among the Cattle," by Iater, London, 1748, there is a very curious reference to a supposed connection between that epizoötic, and what was then called "pestilential sore throat," which seems to have resembled what we now term diphtheria so closely as to leave little doubt they are the same disease. Another writer of that time, Dr. Short, describing some cases of this disease, in 1743, just before the outbreak of cattle plague, says: "On looking into their mouths, the tonsils, velum pendulum and uvula were seen covered with a thick white slough which reached but a very little beyond these parts towards the roof. They had a long, rattling, deep inspiration, with a sound as from a metal tube, a livid countenance and * * * a difficult motion of the thorax. But what was most remarkable, they spit large pieces of the lining of their

trachea an inch and a half or two inches long and as thick as a shilling." ("Short's History of the Air." Lond. 1749, vol. ii, p. 307.) No one that reads this passage can admit that diphtheria is a new form of disease. It is significant that diphtheria was prevalent during the time of the cattle plague in this year, and the attention of the Medical Society was directed to it by Dr. Belcher, who, in his paper on "Diphtheria," alluded to "Iater's" pamphlet.

Observations made in Germany, in India, and in this country during the great epidemics of cholera since 1832, show that, coïncident with the epidemic cholera in man, the lower animals were affected by an epizoötic disease of a similar character. This was extended to animals of every kind, but was more especially observed in the domesticated animals, such as dogs, cats, horses and cattle; in a word, was of almost frequent occurrence in the animals most exposed to the same contagion which produced the epidemic in man.

From these histories of the evident connection between epidemics and epizoötics in former times, it was not very difficult to foresee the probability of this being again shown by the occurrence of some epidemic on the cessation of the prevailing epizoötic. Accordingly, in this essay, which was written early in May, and placed in the printer's hands in June last, although since unavoidably delayed till now, I ventured to predict that the "epidemic constitution," in which the cattle plague had originated and had developed itself, would now, as on former occasions, extend its influence from the lower animals to mankind, and signs of what was termed by the older physicians the "epidemic constitution, or morbific tendency of the season" (words which, I may remark, do not appear to me superseded by any of the more euphonious modern phrases by which a similar idea is still conveyed) were not wanting, even in Ireland, where the visitation of cattle plague was very slight. Some months before any case of cholera was observed in Dublin, diphtheria had been unusually prevalent; cases of fever assumed a peculiarly asthenic or low type, the prevalence of puerperal fever led to the closing, for a time, of the Lying-in Hospital. Such were the precursory symptoms of an "epidemic constitution," or "contamination of the atmosphere," before epidemic cholera made its appearance in Dublin on the 29th of July, 1866, having been imported from England. The outbreak of epidemic cholera in London in the commencement of July, and the fearful mortality it occasioned for a time in East London, was, I think, but another illustration of the law that there is some connection, however occult it may be, between pestilences which attack the lower animals and those that invade the human race, and that whenever an epizoötic rages we may anticipate that it will probably be followed by an epidemic. Not that it can be imagined that cholera was in any way occasioned by the preceding rinderpest, but simply that both were developed and spread by the "epidemic constitution of the atmosphere" which remained after the cattle plague, having exhausted its virulence, was declining; and in which state of the air any zymotic poison would have developed and diffused itself. In this case the zymotic agent was cholera, then slowly advancing on its irresistible progress westwards, but which was probably brought into

England by the "epidemic constitution," already spoken of, sooner than it would otherwise have been.

In conclusion, the chief point I have endeavored to prove in this essay is, that there is a very close connection between epizoötic and epidemic diseases, and that when either form of pestilence appears in any place, we may ere long expect the other to follow. Had this law been more generally acknowledged and acted upon by the adoption of suitable sanitary precautions, and some efficient system of quarantine immediately after the first appearance of cattle plague in England, in June, 1865, it is, I think, possible that the mortality occasioned during the present autumn, both here and in England, might have been at least largely diminished.—*Dublin Med. Press & Circular*, Oct. 17, 1866.

ART. XIII.—*Baths in the Treatment of Disease.*

CASE I. *Rheumatic Fever.*—John B., Newmarket, aged 30, employed at the gas works, was attacked in November, 1865, with rheumatic fever, and was bedridden several months. He gradually recovered, and in April attempted to return to his work, but after a very few hours found himself quite unable, and had a severe relapse in consequence of his effort to do so. The pains were most severe all over his body and limbs, and his joints became so rigid he was scarcely able to walk. He was ordered to take the improved Turkish bath at 120°, with feet in hot mustard and water, followed by the warm douche and partial cold douche, twice a week, and tepid followed by cold sheet every morning at rising, and a mild dose of antacid saline three times a day.

After the first bath, all pain and much of the stiffness left him. While in it, he perspired most freely. The perspiration had a very peculiar sour smell and highly acid reaction. A bath was given every third or fourth day, gradually raising the heat to 160°, and the cold douche prolonged. After a few baths, he was able to walk with comfort six miles at a stretch. He has much improved in health and appetite, and is quite free from pain, and enjoys the bath.

The effect of the bath in improving the firmness of the muscles and healthiness of the skin was remarkable. His general health and appetite are also very much improved.

The baths were continued with slight modifications for three weeks. At the end of that time he was quite well, and returned to his employment, where he has continued ever since.

CASE II. *Rheumatic Fever.*—C. F., aged 35, laborer, near Newmarket, had, ten years since, a severe attack of rheumatic fever. He was bedridden and helpless for months, suffering the most violent pain. It took him nearly a year to get over it.

The present attack came on in the beginning of May, 1866. It began with rigors, and great heat and thirst, restlessness, followed by severe pains attacking all the joints with such extreme tenderness that the slightest motion was attended with intolerable anguish.

The joints were puffy; the tongue covered with white fur; pulse sharp and incompressible; urine scanty; bowels torpid; the skin was covered with unctuous perspiration of peculiar acid odor. Examination of the heart showed that it had been implicated in a previous attack, accounting for the occasional fits of numbness to which the patient was subject.

The portable hot air bath was ordered, with a magnesian saline aperient. The patient was kept in the bath twenty minutes, at the heat of 120°, and perspired very freely, the perspiration being most pungently acid. He was sponged over with warm water under sheets, and got quickly into a warm bed. He was ordered to be carefully sponged over with warm water night and morning, care being taken to uncover only part of the body at a time. He felt none the worse for the bath; and on the next visit his pulse was found to be softer, the kidneys and bowels acting freely; all the signs of acute inflammation had subsided, and he had slept well; he was perfectly free from pain, and had partly recovered the use of his limbs. After a week, a second bath was given, and his improvement was so rapid that in a few days he was able to get out of doors, and expressed himself highly delighted with the treatment and result. He has since continued to improve, and is now suffering from debility only.

Remarks.—In this case, the debilited state of the patient, and the injury to the heart from the former attack, rendered imperative the greatest caution in the use of the bath; therefore it was only used for a short time and at long intervals. The result shows that, even where the heart has previously sustained injury, its use is perfectly safe—indeed, tends to ward off disposition to cardiac affection. The patient's blood was loaded with morbid poison, which Nature was seeking to eliminate by means of the skin and kidneys. By the assistance to the natural powers of these organs afforded by the bath, more poison was eliminated in a day than, without its help, could have been thrown off in a month; hence the disease was enabled to run its course quicker; and, instead of the sufferer being in agonizing pain for weeks and slowly recovering, his sufferings were speeedily terminated, and a cure effected in Nature's own way.*

A gentleman, now in the most robust health, some years back, when reduced to an almost hopeless condition, was cured by similar means in a very few weeks, after all other remedies had failed, and may be referred to, so satisfied is he of the value of the means which he justly says "saved his life."

Case III.—On Monday, May 16th, 1866, at 10 A. M., Dr. Mead was requested to visit a stable-lad in Newmarket, who had been for a day or two complaining of pain and difficulty in swallowing, for which a saline mixture with acid gargle had been used.

There were redness of the velum, uvula and fauces; restlessness and anxiety; difficulty of deglutition, each attempt being attended with sharp cutting pain; the act of inspiration was protracted, whistling with throttling noise. The voice was a hoarse whisper; the countenance anxious, ghastly; the eyes protruded; there was a pain-

* The apparatus used was invented by Dr. Mead; it is portable, and, by a very simple contrivance, allows a ready adjustment of the heat.

ful sense of suffocation. The cough was harsh, stridulous and husky. There was great tenderness of the laryngeal cartilages, which were painful on pressure. Pulse 120, hard; skin hot and dry.

The patient was stripped, placed in a chair, and enveloped in blankets, with his feet in hot mustard and water, and hot fomentation-cloths around the throat, and, by means of the portable apparatus, subjected to a heat of 130° Fahrenheit. After about ten minutes, copious perspiration was caused, with feeling of sensible relief. After fifteen minutes longer, he was placed upright in a shallow bath and drenched with tepid water, enveloped in dry sheet, rubbed dry and put into a warm bed, when the pulse was found to be 90, the pain nearly gone, and the breathing easier. He swallowed some aperient medicine with very little difficulty.

At the evening visit the pulse was 80; skin moist; bowels not opened. He was ordered to take two aperient pills and saline mixture every four hours.

May 17th.—He had a good night. The bowels acted early in the morning, without pain. Pulse 80; skin moist. He took soft food readily, swallowing without difficulty.

May 18th.—He continued to improve, and by the end of the week was able to resume his employment.

Remarks.—This treatment and its success will bear most favorable contrast with that recommended by any medical author. It afforded immediate relief. In less than two hours the patient might safely be pronounced out of all danger. The rapid recovery that ensued was owing to Nature's vital powers not having been sapped by violent bleeding or strong mineral medicine. A physician, subject to sudden and violent attacks of this dangerous disorder, has several times obtained immediate relief in this manner; and there is no doubt that, if laryngitis be treated thus, a fatal issue is almost impossible.—*British Medical Journal*, Sept. 22, 1866.

ART. XIV.—*Detection of Lung-Tissue in the Expectoration of Persons affected with Phthisis.*

DR. SAMUEL FENWICK gives the results obtained from the examination by the microscope of the expectoration of one hundred real or suspected cases of phthisis. The plan hitherto recommended of searching for pulmonary tissue in sputum has been to spread it on a flat surface, and to pick out of it with needles any portions that might appear likely to contain elastic fibre. He has, on the contrary, been in the habit of liquefying the expectoration by boiling it with a solution of pure soda, and then placing the fluid in a conical-shaped glass, when every particle of elastic tissue falls to the bottom, and can be removed and placed under the microscope, as is done in the examination of urinary deposits. In this way he has easily found $\frac{1}{100}$th part of a grain of pulmonary structure after it had been mixed in bronchial mucus; and he calculates that $\frac{1}{4000}$th to $\frac{1}{6000}$th part of a grain may be detected in any expectoration that may con-

tain it. In thirteen out of twenty-three cases in which tubercle was suspected to be in the first stage, lung-tissue was found in the sputum. In seven of the twenty-three cases, there was no physical sign of tubercle, but its existence in the lung was suspected from general symptoms only; and in the expectoration from these there was no pulmonary tissue. In sixteen cases there were stethoscopic signs leading to the belief that tubercle was present; and in thirteen of them elastic fibre was found in the mucus coughed up. There were twenty-four cases in which auscultation and percussion indicated softening of tubercle in the lungs, and in all pulmonary tissue was present in the sputa. In fifteen the physical signs were of a doubtful nature, and seven of these presented microscopic evidence of ulceration of the lungs. In thirty-five cases the stethoscope indicated cavities, and in all these there were fragments of lung-tissue in the expectoration. In two cases the author had diagnosed enlarged bronchial tubes, and in neither of them was there any appearance of elastic fibre in the sputum. In sixty-nine cases he counted the numbers and size of the fragments of lung expelled. In one specimen, coughed up in twelve hours, 800 fragments were found; and often 50 or 60 fragments were detected, where, from stethoscopic signs alone, no great destruction of lung could have been anticipated. The proportion of bronchial tubes the author found to be least in the stage of softening, and greatest where the stethoscope indicated cavities. The greatest proportion of fragments of single air-cells was found in the first stage, and the largest proportion of large fragments of lung where cavities existed. The author concluded his paper by giving a number of practical directions as to the best method of conducting the examination of the expectoration, in order to find with quickness and certainty any pulmonary tissue that may be present.—*Med. Times & Gazette*, Sept. 29, 1866.

Obstetric Practice.

Art. XV.—*Uterine Displacements.*

I HAVE been much interested of late in reading the communications of Drs. Griscom, Banning and others, published in the *Reporter*, on the above subject, for the main reason that I have treated such cases almost continuously for a number of years past, and am now engaged in the management of some. I therefore naturally feel a desire to compare my experience with theirs, with which, as well as with their observations generally, I am pleased to state that I am ready to concur. The derangements under consideration are of more frequent occurrence than is generally supposed, and for their removal our best efforts and judgment are often put in requisition.

As a supporter, I have used all kinds of pessaries that I know of, but give the preferance to that known as the "horse-shoe" pessary, for with it I have best succeeded. But it is not of easy application,

as those who have never used it will find on trial, and requires judgment and an acquaintance with the matter to adapt it.

I always invest the instrument with some extraneous covering, as sponge or animal membrane, so that it shall rest more securely and not abrade the parts. I prefer the membrane, which I am using now, as it is not easily decomposed, and partakes of qualities similar to that of the parts with which it is to be placed in contact. I have at present a case on hand, which I will briefly relate, which will give a better *exposé* of my views than I could otherwise do.

Miss ——, a delicate lady, nearly twenty years of age, sent for me on the evening of April 26th, 1866. On my arrival, I found her suffering much with ischuria, which had afflicted her for some time previous, but never more sorely than at present. Various things had been tried, but with no permanent success. I advised the catheter as being likely to afford the quickest relief; it was used with success and entire relief for the time. I noticed some inflammation about the parts, and ordered a saline diuretic. I told her I thought it would answer then, and was retirtng, when she asked if I had trusses. I told her I had. She said she had had a "burst," and had been advised to wear one. She said she could not cough (though quite disposed to do so), laugh, sneeze, or turn in bed (being able to sit up for only a few minutes at a time), without applying both hands to the abdomen, because she felt as if her "inwards would come through." I told her I should have to examine in order to see what kind of truss would be required, and on doing so discovered at once that she had no rupture at all—nothing of the kind. I told her so unequivocally.

Well, what could it be? She had been living two or three years in a part of the State some distance from home, and had been under the care of a very skillful physician for eight or ten months, and she supposed he understood her disease. I told her it might be that she had uterine disorder. That was a new idea to her. She had been treated for dyspepsia in its worst form. Stomach very capricious, with paralysis of the upper extremities. I examined the spine, found nothing wrong there, and after stating my views plainly, she consented to be examined.

I found the uterus, or so much of it as was accessible, and the entire passage to it, quite inflamed, as proved by great tenderness, tenseness, heat, etc., and a complete anteflexion or version of the uterus, the fundus lying against the *os pubis*, the inferior portion of the uterus *(os uteri)* resting on the perineum completely down, and it was with great difficulty that I could reach the *os uteri* at all, as it was thrust back against the rectum.

I now had a key to the case. The uterus, rotating as it did on the pubes, when the muscles were called to act, caused the bursting sensation, as the sequel proved; also the difficulty in voiding urine, because the womb at times pressed the urethra.

Costiveness had been a great trouble, her bowels not moving oftener than once in ten or twelve days, for the reason that the transverse position of the womb obstructed the rectum. I told her at once that her only chance depended on a proper restoration of the womb, and therein was a chance. She said the picture to her was

dark, and that she did not expect to get well. She had taken iron profusely, and other medicines skillfully prescribed, but never seemed benefited. She consented to my making a trial. I told her it would take some months, probably, to accomplish much. I had no supporter with me, but extemporized one on the spot, and after bringing the womb to its proper position (which is easier said than done), I applied my supporter, which was rather small, and compressible of necessity, since if it had been large and firm it could not have been applied, for obvious reasons; and after continuing the same for some time, until the parts had become more tolerant of appliances, I resorted to the *horse-shoe*, which has more than exceeded my expectations, and she is now almost well, cheerful, happy, and attending to her business. Dyspepsia, which she had been so long treated for, as well as paralysis, are no longer even thought of; her appetite is excellent, and every kind of food acceptable. She gains flesh daily. Her urine is now voided as freely as any other person's; costiveness has no existence. She is all right; a cough, and bronchitis which she had had, I have treated successfully. The latter was severe when I first saw her. I examined her chest thoroughly and found no fixed disease of the lungs, as she had been told; resonance good, except a small portion of the inferior right lobe. And what had been, above all others, the bane of her existence for years, annoying her constantly, was profuse leucorrhœa; her clothing was frequently much soiled by it; but it is now all gone, much to my gratification. For this trouble I directed her to use detergent solutions. For bronchitis she applied to her chest every night a napkin moistened with an astringent mineral solution. I have given her but little medicine: she took enough before I saw her. I have strictly cautioned her against using opium or morphia. She has had none, with the exception of a mild opiate for her cough, so as to enable her to rest at night. With her nervousness I could easily have induced the habit of using opium; but, thank God, I have been careful, because I consider such a habit, confirmed in a young person, equivalent to death.—*Philadelphia Med. and Surg. Reporter*, Sept. 29, 1866.

Art. XVI.—*A Self-Retaining Vaginal Speculum.* By Geo. Syng Bryant, M. D., St. Louis, Mo.

THE Speculum has now become so familiar in the treatment of uterine and vaginal diseases and injuries, that even the merest tyro in medicine is not wholly unacquainted with its use.

Since the revival of the speculum by Recamier, one of the physicians to the Hotel Dieu in Paris, numerous shapes have been invented, each variety having its advocate, claiming for it superiority over all others.

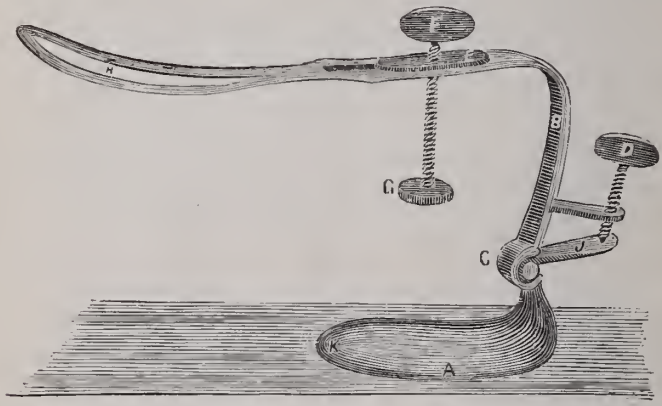
So badly constructed were the most of these different instruments for exposing to view and touch all the parts of the vagina, that little

advance had been made in uterine surgery until Dr. Marion Sims, formerly of Alabama, brought forth by his inventive mind the peculiar speculum known as the "duck-bill," or Sims' Speculum.

This invention was made about twenty-one years ago, and since that time uterine surgery has made such progress that it is now regarded of the highest importance in the proper management of many diseases and accidents incident to women.

In vesico and recto-vaginal, and vesico-uterine fistules; in polypoids and fibroids of the *os, cervix* and cavity of the uterus; and in operations upon the *os, cervix* and internal *os*, the Sims' speculum was the only instrument which enabled the surgeon to get a proper view of the parts, and to manipulate with ease and certainty.

The only objection to Dr. Sims' speculum that can be urged is, that an intellgent assistant is required to hold it in position during the entire time while it is introduced into the vagina. The services of an intelligent assistant can not always be readily had.



This great inconvenience led me to so modify the duck-bill blade as to make it self-retaining, and to be, at the same time, easily adjusted to any sized woman. This instrument consists of a blade, *A*, and lever, *B*, with screws attached, so as to completely fit the lever to the sacrum and back, and to elevate or depress the blade at will.

This speculum operates precisely in the same manner that the Sims speculum does, with the exception that it retains itself. The blade, *A*, is introduced into the vagina, and then connected with the lever, *B*, by the notched joint, *C*. At the end of the fenestra, *H*, in the lever, a strap is attached which is to be carried around the body or waist, and tied before the pad, upon which the button, *G*, rests, is to be placed upon the sacrum.

Above the bend of the lever is a slide, *E*, to which is attached a screw with a button, *G*, at the end. This button rests upon the pad on the sacrum, and the screw is then turned until the requisite amount of tension is made upon the perineum.

The screw, *D*, at the lower end of the lever, which rests upon the arm, *I*, of the blade, is now turned until the free or distal end of the blade, *K*, is elevated or depressed, as may be desired, to the proper degree to bring into view the *os uteri* and the whole of the vagina,

except that portion upon which the back part of the blade rests. This speculum is easily fitted, and its introduction is without pain to the patient. It was made by Leslie & Co., of this city, from a diagram. The accompanying cut is only one-third the size of the instrument. I deem it proper to state here, that at the time of submitting the diagram of my speculum to Profs. Pallen and Pope, of this city, I was not aware that any one had made the effort to so modify the "duck-bill speculum" as to make it self-retaining. Recently I have had the pleasure of seeing the self-retaining speculum of Dr. Emmet, of New York. It is a beautiful and ingenious instrument. I have used it, and also seen it used several times by Dr. Montrose A. Pallen. It does not do well in muscular women; but when the patient is lean and flaccid, with a thin and weak perineum, Dr. Emmet's speculum answers a good purpose. Another objection to it is, that it can not be well adjusted to different sized persons, and even when it fits the patient "the left lateral semiprone position" of Dr. Sims must be rigidly maintained, or displacement of the instrument will occur.—*St. Louis Med. & Sur. Journal*, Oct. 1866.

Art. XVII.—*Gossypium as an Emmenagogue and Parturifacient:* By W. C. Bellamy, M. D., Columbus, Ga.

HAVING been, during the last few years, on account of the late terrible and disastrous war, cut off from the rest of the world by the blockade of our ports, and commercial intercourse with the northern part of our own country being closed, it became a matter of necessity with us to develop and apply to the alleviation of disease whatever indigenous remedies we might possess. Under the pressure of this necessity, many of our ablest physicians made numerous experiments in the practical use, not only of those substances which, though possessing medical properties, had never been used to any practical extent, but also to bring to light the medical properties of many articles hitherto unknown to the profession.

Being myself, among the rest, subjected to the the same inconvenience, necessity compelled me to experiment with and finally to develop, to my entire satisfaction, the therapeutic effects of the gossypium (our southern staple product, the common cotton plant), as an emmenagogue and parturient. Needing, but not being able to obtain, the ergot, and remembering the observations of Dr. Bouchelle, of Mississippi, in regard to this plant, as recorded on page 388 of the U. S. Dispensary, edition of 1858, I determined to put it to the test. The paragraph referred to says: "The root of the plant has been employed by him, and he believes it to be an excellent emmenagogue, and not inferior to ergot in producing uterine contractions. He also states, that it is habitually resorted to by the slaves of the South for producing abortion; and he believes it acts in this way without injury to the general health." To assist labor, he makes a

decoction by boiling four ounces of the root in a quart of water to a pint, and gives a wine-glass full every twenty or thirty minutes.

The first case in which I tried the remedy was a negro woman, patient of one of my *confrères*. It was a case of tedious labor, and not being able to obtain the ergot, a consultation determined him to try my new remedy. But the large size of the dose, and the shortness of the intervals, given as recommended by Dr. Boucheile, deterred me, fearing the bulk would overload the stomach and nauseate the patient too much. I therefore prepared a compound fluid extract, and concentrated it, so as to reduce the size of the dose to a tea-spoonful, gave him a bottle of it with directions to give a tea-spoonful every twenty or thirty minutes, requesting him to give me the result of his observations. On the following morning he called upon me and informed me that the medicine had subjected him to a considerable degree of mortification; that the labor was progressing very slowly; that he had little confidence in the medicine, and that he thought he would have ample time to visit another patient near by. Gave a dose of the medicine, and leaving the bottle with directions to give a tea-spoonful every twenty minutes, went to visit another patient; was gone perhaps three-quarters of an hour, or an hour at farthest, and returned to find to his no less astonishment than mortification, that the labor was completed—that the woman had given birth to a good-sized, healthy child, with very little trouble, after having taken not more than two or three doses of the extract of gossypium.

Soon afterwards I had occasion to use it myself in several cases of tedious and protracted labor (no one case where the labor had lasted over forty-eight hours) with the same happy results, and I had the pleasure of seeing all the patients to whom I had given it go into a rapid state of convalescence, without observing a single pernicious symptom in any of the cases. Finding the remedy to act so charmingly as a parturient, I felt sure it would succeed equally in amenorrhœa and dysmenorrhœa. I fortunately soon had an opportunity of trying it in the former, as well also as in dysmenorrhœa. The patient was Mrs. W., a most estimable lady, of full plethoric habit, short neck, weighing about two hundred pounds, and about thirty-five years of age. She had been troubled with a suppression for more than twelve months, and had been at irregular intervals troubled in the same way for some years previously. She was troubled with it at this time, as I said, for more than twelve months, with all the accompanying unpleasant symptoms, when she applied to me. After the exhibition of aloëtic laxatives, I gave her my new remedy, with which she was to commence about a week before her regular period, and take a tea-spoonful night and morning until the day arrived for the regular menstrual discharge, when she was ordered to take her bed, make her feet and body warm between blankets, and take a tea-spoonful of the extract of gossypum every hour until some show should appear, when, towards evening, to her great relief and delight, she discovered a little show. But that period passed by without much benefit. She was, however, ordered to repeat the same treatment at her next period, which she did, and was entirely restored, having used an aloëtic laxative occasionally, as she was continually constipated.

Shortly after this, I had another opportunity of trying it in a case of dysmenorrhœa, in a robust, sanguine young widow. To her I gave during the period a tea-spoonful every half hour, under which treatment the discharge soon became natural and without any pain.

I am fully satisfied, from the experiments and impartial trials I have given the remedy, that it is fully equal, if not superior, to ergot in promoting the various functions of the uterine organs. I look upon it as a sure, speedy and safe remedy, not only for difficult, painful, contracted labors, but also to control all the irregularities of females and to alleviate their peculiar monthly sufferings. It is very certain that its effects are so powerful upon the uterine system as to produce miscarriage, if administered during pregnancy. I feel that its merits cannot be too highly extolled, and hope you will call attention to it and that it may be brought into general use. It is too valuable a remedy to remain hidden in the depths of obscurity. I have made arrangements to have it prepared from the recipe I used after the manner of Tilden's fluid extracts, for the convenience of physicians who may like to use it. I consider it preferable to ergot.

The proper time to gather the root is, when it is as old as possible without being injured by the severe frosts; therefore it is best when gathered during the months of October and November. If gathered before October, it is not sufficiently matured to possess its virtues to the fullest extent, and if taken later than November, it is apt to be injured by the frost. As soon as I am able to get some of the extract prepared, I will send you a bottle of it, with the desire that you try it, and give us, through the medium of your valuable journal, the result of your experiments and observations on its use. I do not propose to prepare it as a patent medicine, for it is too great a blessing to suffering females not to place it within the reach of all. —*Atlanta Med. and Surg. Journal*, Oct., 1866.

Art. XVIII.—*Monthly Period of Infecundity.*

We have received from Dr. Avrard, a physician at Rochelle, an interesting little work, printed at Bordeaux by Gounouilhou, entitled "Generation and the duration of Pregnancy in the Human Race." The object of this work is to determine with almost mathematical precision, "when fecundation is possible in woman, and to assign a limit of time in the menstrual cycle to the generative faculty."

The determination of this law forms the subject of the first part of the pamphlet before us; in a second part the author treats of pregnancy, and inquires into the possibility of recognizing its commencement, of determining its duration, and of assigning to its termination a physiological period.

The theory of M. Avrard concerning the moment when fecundation takes place, is no other than that of M. Pouchet, *verified*, *completed* and *determined* in its mode and phases. "Fecundation," says

M. Pouchet, "presents a constant relation with menstruation; also, in the human race, it is easy to determine exactly the intermenstrual period when fecundation is physically impossible, and that when it can offer some probability." By observation he endeavors to gain a confirmation of this assertion; to establish upon a solid and scrupulously exact basis the duration of the intermenstrual period, during which fecundation can alone take place; and to fix, as well as possible, the limits of this period.

M. Avrard, after having learnedly related and discussed the facts which seem to him calculated to throw light on the question, arrived at the following conclusions:

(1) The cycle of generative functions lasts twenty-eight days. It is divided into three periods of unequal length, which the author calls *menorrhagic*, *generative* and *hypnotic*.

(2) Menstruation returns normally every twenty-eight days, starting from the accession of the courses. Its duration is indefinite.

(3) A certain time elapses, most frequently, and perhaps always, between the end of the courses and the beginning of the generative period; this time the author calls the *interperiodic phase*.

(4) The generative period ends always the fourteenth day after the beginning of the courses.

(5) It has been shown by an observation of fifteen years, and resting to-day upon thousands of facts with proof and counter-proof, that woman is physiologically barren during fourteen days in twenty-eight, that is to say, after the fourteenth day, commencing with the appearance of the courses, till the end of the following period.

M. Avrard does not admit, as does the Professor of the Obstetrical Clinic at Paris, the possibility of impregnation during the period of the courses.

In the second portion of his work the author maintains, contrary to the opinion of M. Matéi, that parturition, at natural term, coincides neither with the ninth or tenth catamenial period; but is effected always 270 days after impregnation, whatever be the moment (often difficult to determine) of the generative period when the woman was impregnated. This normal limit can be exceeded, which is rare, or not be attained, which is common enough.

We regret our inability to analyse more at length this very attractive work of a distinguished observer, where are treated with so much taste and talent questions of the highest interest, as regards midwifery, legal medicine and hygiene, and also in a still more imtant respect. In short, far from considering the popularization of the physiological fact of which he treats as necessarily involving immoral results, a very learned theologian, to whom the author had submitted the question of temporary infecundity, has thought on the contrary that, man being free to use marriage, if not *as* he pleases, at least *when* he pleases, many men being prevented on prudential grounds from cohabitation, through fear of a too numerous progeny, will hereafter be able, thanks to the doctrine of temporary infecundity, to allow themselves in all security *complete, normal* and consequently *lawful* intercourse; without which, in the opinion of moralists, economists and physicians, domestic happiness cannot exist.—*Jour. de Méd. et de Chir.*, Nov., 1866.

Art. XIX.—*Treatment in Placenta Prævia.*

Dr. Greenhalgh first alludes to the great mortality in cases of placenta prævia, both to mothers and children, 1 in $4\frac{1}{4}$ of the former and about two-thirds of the latter, which he attributes mainly to the severe and repeated hæmorrhages, to the delay in effecting the delivery, and to the mode of turning usually resorted to in these cases. He then gives the history of twenty-four cases occurring in his own practice, and refers to statistics to show that the expulsion of the child generally takes place before the full period of utero-gestation, premature labor being the rule and not the exception; that nature, unaided, frequently terminates the delivery with safety both to mother and child; that complete and partial artificial separation of the placenta before the birth of the child has failed in many cases to arrest the hæmorrhage; and that these modes of practice and turning had proved most unsatisfactory. A close observation of the way in which nature terminates these cases with safety to mother and child is insisted upon, and the result of his observations enables the author to confidently recommend the following plan of treatment: First, that in case of hæmorrhage, whether profuse or not, occurring after the second month of utero-gestation, and ascertained to be due to placenta prævia, artificial premature labor should be induced at once, or as soon as the patient's condition will admit of it. Secondly, that in order to effect this without hæmorrhage, an air-ball, covered with spongio-piline, should be passed empty into the vagina, and then inflated so as effectually to fill the passage, while a bandage is placed firmly round the abdomen, and ergot and borax are to be administered in repeated doses. Dr. Greenhalgh concludes by strongly condemning the use of hæmostatic remedies, by which he is convinced many lives are lost. In the discussion which followed, Dr. Barnes objected to the use of a *vaginal* plug. It acted by exciting uterine contractions if the uterus was excitable; but in the worst cases the uterus was paralysed, and in these the plug was useless. If, in combination with rupturing the membranes, the placenta was detached from the cervical zone, the *cervix* then artificially expanded by means of his *cervical* dilators, and the bimanual mode of version, as practised by Dr. Hicks, resorted to, a much greater measure of success would be obtained than by any other special method. —*Year-Book of Med. & Surg.*, 1864.

Art. XX.—*Induction of Premature Labor.*

Dr. Kühn records the cases of induction of premature labor which have occurred in the practice of Professor Braun, at the Vienna Lying-in Hospital, during the last three years. Of the 20 cases, puncture of the membranes with the English elastic catheter or Simpson's sound was adopted in 4; intra-uterine catheterism with the elastic catheter or catgut bougie in 12 cases; puncturing the membranes with catheterism, twice; intra-uterine injection with the apparatus of Larazewitsch in 2 cases. The causes which necessitated

the operation were as follows: Contracted pelvis, 9 cases; uræmia, 4 cases; dyspnœa from Bright's disease, 2 cases; and once for each of the following—tetanic spasms, pneumonia, chronic bronchitis, acute tuberculosis, chronic tuberculosis, The operation was performed at the following periods: 1 in the 23d week of pregnancy; 1 in 24th; 1 in 29th; 3 in 30th; 6 in 32d; 2 in 34th; 2 in 35th; 3 in 36th; and 1 in 37th. In 13 cases the child was born alive, but in 6 of these it died shortly after; in 7 the child was born dead. Of the women, 8 recovered perfectly; 1 died 8 weeks after, of phthisis; 1 recovered from the operation, but was attacked with acute inflammation of the knee; 10 died after labor—4 of puerperal fever, 4 of Bright's disease, 1 of acute phthisis, 1 from hæmorrhage. Of the different methods, the preference is given to catheterism — Dr. Simpson's mode—especially in those cases where no dilatation of the *os* is to be detected. The catheter is introduced with comparative ease through the long, soft, narrow *cervix*, and after the stilette is withdrawn pushed up on either side towards the fundus of the uterus, between it and the membranes, and left lying there. In the 12 cases where it was employed, the first pains supervened, on an average, in $5\frac{1}{2}$ hours; the child was born, on an average, 30 hours after its introduction. The operation was in no single instance followed by hæmorrhage, great care being taken to avoid the placenta. Puncture of the membranes with some blunt instrument is rather to be recommended in cases where the *cervix* is shortened, or where the *os* is dilated enough to admit of the introduction of the finger, *e. g.* in cases of contracted pelvis with head presentation. The intra-uterine injection is longer in operation than the catheter. Prof. Braun advises that the opening through which the water is injected shall be at the end of the catheter, and not at its side, in order that the stream of water may penetrate further; and states that the caoutchouc bladder of Lazarewitsch loses much of its injecting power by being softened with the warm water, so that it is not to be preferred to the common enema syringe. Dr. Moir thinks that the dilatation of the *os uteri* should be effected very slowly and gradually. He separates the membranes from within the *os uteri* by means of the fore finger passed within the *os* and turned round, so as at once to separate the membranes and slightly dilate the orifice. The importance of obtaining a head presentation in cases of premature labor, and avoiding the use of the forceps, if possible, is insisted upon. In one of the cases related, dilatation was commenced a week before delivery, and repeated every day until labor set in.—*Year-Book of Med. & Surg.*, 1864.

Materia Medica and Pharmacy.

ART. XXI.—*Phlorydzine, and its uses.* By Dr. DE RICCI.

PHLORYDZINE is a neutral principle which exists in considerable quantities in the bark of the root of the apple, plum and cherry tree — also, I believe, in some others; but principally in the

root of the apple tree, from which source we are mainly supplied. Phlorydzine, as at present in the market, is in the form of a powder of a dirty white color, consisting of broken up silky needles, in appearance not unlike quinine which has not been well bleached. When rubbed between the fingers it has a soft velvety feel, very like that of French chalk; but if the substance be crystalized by the slow cooling of a dilute solution, previously treated with freshly prepared animal charcoal, it will then be obtained perfectly white, and in the form of long, flat, brilliant, silky needles.* Its taste is peculiar; it is very bitter at first, but ends by leaving a somewhat sweetish taste, with a flavor of apples, on the tongue.

The cases in which I have employed phlorydzine with most success have been those forms of atonic dyspepsia, occurring in delicate females, to whom it was impossible to administer either bark, quinine or salicine in any shape, without bringing on serious nervous excitement. I have also found it extremely well adapted for the treatment of young children of delicate constitutional habit, or when recovering from hooping cough, infantine fever, or any other disease. I have given it in these cases combined with syrup of phosphate of iron and manganese, and with syrup of iodide of iron. The doses I have been in the habit of employing are five grains, three or four times a day, for adults, and proportionately smaller ones for young children.

I recommend a trial of this remedy in every adult case where quinine is not easily tolerated, as also in every case where young children require a tonic treatment either in consequence of constitutional debility, or from the debilitating effects of some previous illness; it is much more easily taken than either bark, quinine, or salicine, the bitter being of an agreeable kind, and changing, as I said above, into a sweetish taste, with the flavor of apples. I have never known it to disagree, even in large doses of 10 grains three or four times a day; and I have, in very many instances, found it of great use where other tonic substances could not be taken.

In prescribing phlorydzine it must be borne in mind that it is almost insoluble in cold water; but the addition of a very small quantity of ammonia instantly dissolves it; thus, by adding to an eight ounce mixture, containing a drachm of phlorydzine, a few drachms of aromatic spirit of ammonia, the fluid, which previously was milky, becomes perfectly clear; and the addition of the aromatic spirit rather improves the mixture than otherwise.

If a small quantity of phlorydzeïn be previously added to the water, its solving power is increased, and the mixture will be of a beautiful blue color, but it will not dissolve as much phlorydzine as when aromatic spirit of ammonia is employed.

I could subjoin several cases from my notes where the effects of phlorydzine have been manifestly favorable; but I do not wish to tire the attention of the reader, and shall content myself with giving the details of one which came under my notice last summer. It was an unmistakable case of chlorosis occurring in a young lady of a decidedly strumous constitution, well characterised by the clear blue

* See Stass in Annales de Chimie et de Physique, vol. lxix.

eyes, broad square under jaw, transparent complexion, and decided auburn hair. Her mother informed me that she had been ill for about eighteen months, and that during that period many remedies and many doctors had been tried, but unavailingly, as her daughter could not take iron in any shape, and that was the drug which had been invariably prescribed. I at once took the opportunity of telling her how injurious it was to the patient, and how unfair towards the medical man to be so constantly changing her physician, and gave her to understand, in very determined, still most courteous language, that I would much rather have nothing to do with the case if she did not intend to give me fairer play than she had given to the other doctors. I suppose I rather astonished the elder lady, who had not been in the habit of hearing such decided language, and which to her ears sounded somewhat almost like impertinence; she, however, agreed to leave her daughter in my hands for at least four months. Taking for granted that there was either some idiosyncracy against the use of iron in the case, or that her nervous system was, from disease and weakness, unable to bear it at the time, I commenced by prescribing grain doses of quinine, in wine, three times a day, requesting her to come again in a few days to inform me how it agreed. She returned on the second day; she had then taken four doses of quinine. She told me it had affected her in a very strange manner ; shortly after each dose she had been attacked by the most unpleasant feelings in her head; it was not pain she felt; it was rather a strained, tightened feeling inside her head, especially at the back of her eyes ; she did not complain of noises in the ears, but every sound seemed much louder than in reality; and her own voice, when speaking, reverberated and reëchoed through her brain in the most distressing manner. This state of affairs generally commenced about half an hour after taking the quinine, persisted for about two hours, and was followed by considerable lassitude. I at once stopped the use of quinine, and prescribed two-grain doses of salicine in infusion of orange peel, with aromatic spirit of ammonia and chloric ether. In three days the patient returned, giving a somewhat better account of herself; but the effect of the salicine had been unsatisfactory; it had acted in a similar way to the quinine, only in a lesser degree. Her appetite was, however, improved, and she felt less languid, so I determined to persevere with tonics; and thinking this was a favorable case for giving a trial to phlorydzine, I prescribed five grains of it in half a wineglass of sherry, three times a day. I did not see the patient for a week — when she came to tell me that the medicine *agreed quite well*, that her appetite was very much improved, that she had lost much of her lassitude, and that on the whole she felt considerably better. I desired her to persevere, and to return in another week. Before the end of that time, however, she walked into my study one day to tell me that she felt a most uncomfortable sensation of weight in her stomach every day after dinner; that her appetite was greatly improved; but that after eating she always felt uneasy, and especially after dinner, when she always felt as if she had swallowed a lump of lead; but that she was quite free from any unpleasantness in her head. I desired her to continue the phlorydzine; and, in addition, to take, after her dinner, 10 grains of pepsine sprinkled between two

small and thin slices of bread and butter. I saw no more of my patient for a fortnight; at the end of that time she again made her appearance in my study; she looked brighter and more cheerful than usual; she told me that she had quite lost the unpleasant feeling in the stomach after taking the pepsine, which she had now dropped for the last four days without any inconvenience; and that the phlorydzine was agreeing well with her. I thought it now high time to begin the introduction of a little iron into her system, and I gave her the citrate of iron and strychnia, in grain doses, three times a day. This agreed perfectly. After a short time I ordered her to the seaside for change of air; and had the satisfaction of seeing her return to town in perfect health.

In this case it is evident that the intolerance of the iron was not due to any constitutional idiosyncracy, but to an enfeebled condition of the gastro-intestinal tract; this was to be corrected and removed by such remedies as increased its tone and vigor. Quinine was tried, but she could not bear it; then salicine was tried, but also unsuccessfully; against these substances she evidently had an idiosyncracy. Phlorydzine, on the contrary, was well borne, and perfectly succeeded in carrying out my views. I could add several cases more, especially among young children, where phlorydzine fulfilled my purposes to perfection, and where neither bark nor quinine could be tolerated.

In conclusion, let me again recapitulate the advantages of this drug: it is tolerated where neither quinine, nor salicine, nor bark can be administered with impunity; it is particularly adapted to young children; it is not expensive; and we are not depending for its supply on the rapidly-diminishing cinchona forests of South America, but have abundant supplies of it at home.—*Dublin Quarterly Jour. Medical Science*, Aug. 1862.

Art. XXII.—*Sulphurous Acid Gas.* By James Dewar, M. D., Kirkaldy.

In a village which stands upon a steep incline, and where fever had made its appearance, a boy of fourteen was taken with headache, etc., and upon the third day of his illness I was asked to see him. I found him evidently *in* for an attack, but without any prominent symptom demanding special interference. Next day, I was surprised to find him almost comatose, with irregular pulse and some other indications of ominous import. Upon careful investigation of the premises, I discovered in rear of the house that *three* piggeries, *up-hill* of my patient, each contributed to form a small stream of pestilential liquid, which found its way by a back door to a closet within six feet of the boy's bed, and attached to one of these was a dung-hill, the deposit of the refuse of a family in which the epidemic had found a resting-place some weeks previously, and where for weeks afterward the disease lingered. The obvious course was to remove the nuisance, but here the old difficulties about "middens" presented themselves, although, in this case, I am glad to admit that

they were all but insuperable. I made a compromise, therefore, that a crucible should be set in the offending closet, and that sulphur should be kept burning therein night and day, and I made the due fulfillment of this promise the condition of my continuing attendance upon the case. With the exception of having his hair cut, cold applications to the head, and a simple laxative, no other treatment was adopted, yet within twelve hours consciousness returned, was never again impaired, and the ordinary stages were rapidly gone through, so that on the twelfth day the convalescent was by the fireside. The preventive measures were continued for a fortnight thereafter, and the disease spread no farther in the family. Next door, where the process was sneered at, the fever had possession of the premises for three months.

Another case of equal interest has been communicated to me. An elderly man, a master carpenter in the country, had recently returned home from waiting upon two sons and a daughter-in-law, all of whom had died of "typhoid fever." His home is at an inland hamlet, about thirty miles distant from the infected locality, and within a few days of his return he was laid down with fever. A day or two afterwards the medical man was sent for, and he found that, meantime, a female inmate had sickened also. This naturally gave rise to great alarm, the more so that a number of the carpenters who worked there boarded with their employer. "Sulphurous fumigation" was at once resorted to, and perseveringly carried out by an energetic neighbor with the most satisfactory results—viz., speedy recovery of the patients and extinction of the epidemic.

Ephemeral and catarrhal fever are at once cut short by inhaling the "fumes," while their soothing influence in "scarlet fever" encourages both patients and attendants to frequent repetition of the process. In one family where I attended there were five children under scarlatina at the same time, and the fumigation was given in charge to the father, who was most assiduous in his attention to it. The room was filled almost every hour, and was scarcely ever free from a taint of the disinfectant. The repeatedly observed sedative effect was, in this case, satisfactorily tested; for, especially during night, whenever the inmates showed signs of restlessness, my friend gave them an extra dose, with the invariable effect of inducing quiet and sleep.

In this, as in typhoid fever, it has an undoubted power of both mitigating the severity and shortening the duration of the illness. And I have no hesitation in saying, that to its adoption, accompanied by the diligent application of "sulphurous acid" to the "tonsils," both in scarlatina and diphtheria, is due the merit of having rescued several individuals whose general condition otherwise was unpromising in the extreme. And I may add that, although it may be in some measure attributable to good fortune, while I have had no fatal case of scarlatina during the late epidemic, neither have I seen, out of more than twenty cases, a single instance of "secondary complication."

In "diphtheria" my experience has been equally satisfactory.

"Hay fever" has been checked, and at once, by this simple appliance; and several cases of "hospital gangrene" can now be in-

stanced, in which the morbid action was immediately arrested, and this quickly followed by marked change for the better in the condition and appearance of the wound. This last, besides being of itself interesting, afforded an opportunity of testing the comparative merits of "carbolic" and "sulphurous" medication; and, accordingly, it was found that after the former had failed to give the desired relief, S. A. G. was still able to achieve the happiest success over the enemy.

The application of sulphur fumes to the relief of aching bones, as in "gout and rheumatism," has been so fortunate as to revive the old-fashioned belief in its virtues, and to establish its title to be considered a trustworthy resource, which, from its simplicity, is equally within the reach of "rich and poor," and can be entrusted to the management of the most innocent domestic.

A gentleman, long a martyr to gout, was threatened some weeks ago with a severe attack. When I saw him the storm was just about to burst, and he was looking forward with horror to the ordeal through which he was about to pass. It just occurred to me that, as sulphur baths had proved useful in such cases elsewhere, why might not we upon this occasion bring the "mountain to the prophet" by improvising a sulphurous vapor bath in the chamber. I accordingly had the room filled with "fumes," and desired that a set of bed-clothes should be hung up in a dressing-closet, and then to be fumigated for an hour or two until they had become saturated. This was most efficiently carried out; the clothes were spread over the patient, who shortly afterwards fell asleep. He became bathed in perspiration, slept for many hours, and awoke with his acute symptoms greatly mitigated.

In rheumatism, likewise, this mode of management has given relief in every case where I have heard of its having been tried, the sedative properties of the agent employed soothing the pain and promoting a tendency to sleep.

I trust that these facts will prove sufficiently definite to my professional brethren to warrant their recommendation of the system to extended trial, being fully persuaded that no one who intelligently and determinedly carries it into practice will ever have cause to regret his having been induced to do so.—*Dublin Medical Press and Circular*, Sept. 5, 1866.

Art. XXIII.—*Rectified Oil of Amber for Hæmorrhoids.*

THE editor of the American Journal of Pharmacy, Mr. William Proctor, jr., contributes the following interesting communication to the journal of which he is editor:

"Of the large number of persons who suffer from this annoying complaint, very many never consult a physician, and many others after renewed treatment give up the idea of becoming cured, viewing the affliction as some do old ulcers, as a burden to be borne while life continues. Various external applications are constantly prescribed, as an ointment of acetate of lead, tannin or nutgall, and

opium, which is often successful in affording relief. Numerous secret nostrums have, from time to time, attracted attention, indicating the prevalence of the disease. Several years ago my curiosity was excited by the repeated calls for rectified oil of amber by a person who was not in any way connected with medicine, and he was asked the use to which it was applied. He said it was for piles, and that he rarely knew it to fail; the numerous calls that had been made being for friends and acquaintances who were sufferers from the complaint. After that, on several occasions where opportunity offered, it was suggested and tried with success, in many cases of piles where the tumors were external and annoying. The manner of its curative action I am not aware of. The oil is applied as a lotion to the tumors, and around the anus where the swellings exist. It occasions a smarting sensation at first, but after several applications the sensitiveness disappears, and the tumors are dissipated. So far as is known to the writer, the influence is entirely local, and does not extend beyond the parts to which it is applied. I am not aware that it has been applied beyond the sphincter ani to the internal tumors, but know of a case wherein both internal and external piles existed, the latter disappearing, and the others continuing to give annoyance. The object of this note is to ask the attention of medical men to the subject, that the actual value of the oil of amber as a remedy for piles may be satisfactorily tested. It may be that, in some cases, admixture with lard or cerate would be preferable, and in the form of an emulsion, or associated with glycerine or olive oil, it might be applied in the rectum by injection or by a bougie. These are mere suggestions to the physician.

"It is to be regretted that so little genuine oil of amber is to be obtained, as has been conclusively shown by Mr. Ebert, of Chicago, who finds that it costs as much per ounce to make the oil as it sells for in commerce per pound. Failures may be attributed to the spurious oil made from turpentine and coal oil, shaken with oil of tar and oil of amber."—*Atlanta Med. & Surg. Journal*, Aug. 1866.

ART. XXIV.—*Viburnum Prunifolium.*

THIS small tree grows in rich, dry woodlands from Florida to the Mississippi river, and northward. For description, see Chapman's "Flora of the Southern United States," and other works. The part used is the bark, 3ss to 3i, in powder; infusion f ℥ss; or saturated tincture f 3i.

It is nervine, antispasmodic, tonic, astringent, diuretic, and may be used to very good purpose in urinary affections, ophthalmia, aphthous sore mouth, chronic diarrhœa, dysentery, indolent ulcers, etc. It is an excellent remedy in colic, cramp, spasms, palpitation, and other affections incident to pregnancy, or arising from uterine disorder, and for after-pains. But it is *particularly valuable in preventing abortion and miscarriage, whether habitual or otherwise; whether threatened from accidental cause or criminal drugging.*

It tones up the system, preventing or removing those harassing nervous symptoms that so often torment, wear down, and disqualify the pregnant woman for the parturient effort. It enables the system to resist the deleterious influences of drugs, so often used for the purpose of procuring abortion. It is well known, that the inner bark of the cotton root is used by many to induce miscarriage—one pint of the strong decoction being sufficient for this purpose. The regular exhibition of the viburnum completely neutralizes the effect of the gossypium, compelling the delinquent mother, however unwilling, to carry the fœtus to full term. Some farmers, on whose plantations I have used this medicine, and who have seen much of its effects on negro women who always managed to miscarry, declare their belief, that no woman can possibly abort, if compelled to use the viburnum. This may be claiming too much for it. But it has certainly prevented abortion in every case in which I have ordered it for the purpose. Negatively:—miscarriage has never taken plpce, so far as I am informed, in any case in which this medicine was used as a preventive.

Brief notes of a few cases will give a better idea of my mode of employing this medicine.

Case I.—Mrs. ——, widely known as authoress, of very pale, delicate appearance, aged about 27, when some three months married, aborted, from injury received in leaping from the floor into bed. Once or twice subsequently, she aborted at the same stage of pregnancy; once, I learned, twins. In August, she came under my care for severe intermittent fever; and, on 16th September, 1864, being again pregnant, she consulted me with a view to prevent abortion. I ordered tinctura viburni, f 3i *bis, vel ter in dies;* oftener, when threatened, till the danger is passed. She continued going on well for more than three months after the usual time for her misfortunes, when, removing beyond my reach, I lost sight of her. Several times she had to use the medicine very freely. I think it was on the 6th of October, an artillery and cavalry fight took place near the house where she was boarding; her husband, wounded some time before this, was compelled to fly for safety; charges were made through the yard; a number of soldiers were killed about the place; the house was ransacked; and an old gentleman living with the family murdered; yet, she passed safely through this time of excitement and trial.

Case II.—In March, 1865, Mr. W. consulted me in regard to his wife. He said she had never gone to full term, but had had several children at the eighth month, all of them dying one month after birth. Frequent pregnancies and hæmorrhages had seriously impaired her health, for improving which I ordered suitable remedies. To prevent premature parturition, she being again pregnant, I directed tincture of viburnum. At the eighth month, as usual, labor commenced vigorously, with copious sanguineous discharge. Both were soon arrested by a free exhibition of the viburnum. She went on to full term, and gave birth to a healthy boy, who still survives at a year old.

Case III.—Mrs. M——, mother of several children, has, for several years, suffered much from dysmenorrhœa, leuchorrhœa, hæmorrhages, and abortions, and is pale, feeble, and despondent. I or-

dered iron by hydrogen, to improve the blood and nervous system, Fowler's arsenical solution, to check leucorrhœa and prevent hæmorrhage, and tincture of viburnum to allay uterine congestion, pain, irritation, and to tone up the reproductive organs. Some months afterwards, March 2d, 1865, I was summoned, in haste, to see her. She was much improved every way, and supposed two or three months pregnant. Two bodies of troops had been ordered to form a junction and prepare for battle, instantly, at a point a mile distant, but visible from the upper story of the dwelling. Running hastily upstairs to see the array, she was hurt; pains commenced, and, almost immediately, pretty free hæmorrhage, which alarmed her excessively. A viburnum tree growing within a few paces of the house, I ordered infusion of the bark, which soon put a stop to both hæmorrhage and contractions. On the 16th August following, before day, she was alarmed by the escape of liquor amnii, and I saw her early in the morning. As there was no pain, contractions, or other indications of labor, I left her. This was a small leak, and she informed me that labor had been brought on in a previous pregnancy by a similar leak. About dark of the next day, forty hours after the flow commenced, I again saw her, and at 11, P. M., delivered her of a healthy eight months child, which still survives.

CASE IV.—January 22d, 1866, Mrs. L——, eighteen months married, had miscarried last year, in consequence of which she had suffered long and much, now pregnant and threatened with abortion. I ordered tincture of viburnum f 3 i thrice a day; oftener if necessary. She went on well till the 10th of April, when she was severely injured by a fall from her carriage. Strong uterine contractions ensued, but were arrested by the medicine, which had to be used freely for several days, gradually diminishing the quantity per diem. For nearly a week abortion was threatened whenever the use of the viburnum was too long omitted. From this time she went on to full term without further accident, and was delivered of a large boy.

CASE V.—January 25, 1866, Mrs. H.——, married in 1862, has had no children, but an abortion or two, now pregnant, and threatened with abortion at the usual stage with her. I gave her tincture of viburnum, with directions to use *pro re nata*. March 4th, summoned again to see her. I find she has had considerable pains, contractions, and discharges for two days. She had taken the medicine as ordered, and was now up, easy, and the discharge of a slight oozing merely. Ordered the medicine discontinued for the present. She had to use it again a month later, and from that time continued well, and at full term gave birth to a healthy child.

CASE VI.—July 11th, 1866, Mrs. J.——, six or seven months pregnant, has had labor pains increasing in frequency and force for over thirty hours. I ordered tincture of viburnum every hour, or as often as needed, till pains cease. Labor was soon arrested, and no further trouble has occurred.

CASE VII.—Mrs. P.——, April 16, 1866, has had severe colic, after noon, several days. Tincture of viburnum f ℥iss was ordered, and the single dose only was required.

Many cases might be cited, but the above handful will suffice as well as a thousand. There will be cases and conditions, of course,

in which no intelligent practitioner would attempt to prevent abortion by the use of viburnum. or any other means ; as where the placenta is extensively detached, the membranes ruptured, the fœtus partly expelled from the uterine cavity, etc.

I have heretofore, for some years past, made known the use of this valuable agent, in conversations with members of the profession, as well as by letter. Its value as a medicine is so well ascertained as to justify a lengthy article in print, and its general use by the medical profession. The bark may be gathered at any time, but is best, perhaps, gathered in October and November. When practicable, I have preferred obtaining it from trees in open, exposed situations. Situation materially affects the qualities of plants. A plant, for instance, which, gathered on the level of New Orleans is inert, gathered here, is probably the best remedy in the world for tetanus ; of which, more another time.—*Atlanta Med. & Surg. Journal, Nov.* 1866.

Art. XXV.—*Alcohol as a Dressing for Wounds.* By W. Lockwood Bradley, M. D., New Haven.

WHILE State Legislatures have been endeavoring by laws of prohibition and license to restrict the use of alcohol as a beverage, its employment as a medicinal agent has steadily increased. As it has been well expressed by Dr. Wilks, editor of the London *Lancet*, "there are few things more remarkable in the recent history of medicine than the extent to which alcohol has been introduced, and the importance which has been attached to it in the treatment of disease."

In the present paper it is proposed to offer some remarks upon the treatment of wounds, surgical and traumatic, with alcohol. The idea thus enunciated is by no means original; on the contrary, it was known to Hippocrates, Galen, and Ambrose Paré. An analysis of preparations employed by them in the treatment of wounds, need not be very searching to prove that alcohol was often the basis of their interminable and now superannuated formulas. Two illustrations will be sufficient. The "balsam of Fioraventi" was composed of turpentine, myrrh, aloes, ginger, canella, with other substances and more than three thousand parts of alcohol. Again, the barbarous practice of scalding gunshot wounds with boiling oil, was changed by Ambrose Paré for the employment, with other applications, of the alcoholic solution, or tincture of myrrh.

Coming down to more modern times, alcohol was used by Baron Larry during the campaigns of the first Napoleon. Since then it has been employed as a popular remedy both in France and America. In the year 1859, M. Batailhé, of Paris, published *(De l'alcool et des composés alcooliques en Chirurgie)* the result of some experiments performed upon the lower animals. Among other points, it was proven that alcohol favors the immediate union of wounds in three ways: first, by arresting hæmorrhage from the smaller vessels

(blood being a great obstacle to perfect coäptation); secondly, by producing immediate coägulation of albumen; lastly, by promoting the plastic secretion.

At a somewhat later period, alcohol was introduced as a surgical dressing in two of the principal hospitals of Paris—by M. Dolbeau, at the St. Louis Hospital, and M. Nélaton, at the Clinical Hospital. Of forty-eight cases treated at the latter hospital during the first eight months of 1864, forty-two healed rapidly, and three after an attack of erysipelas. Three terminated fatally—one from cancer, one from phthisis, and one from purulent absorption. Thirty-nine were the result of important operations, such as amputation of the leg and the removal of an enormous tumor. In one case the denuded surface measured six inches in the transverse diameter. The record for 1863 shows an equal degree of freedom from pyæmia, erysipelas and like accidents. M. Nélaton and others believe that these results are dependent, in a great measure, upon the therapeutical effects of alcohol.

I propose to consider these effects with special reference to changes which may take place in wounds healing by the second intention. For an accurate and scientific description of these changes, I am indebted to Mr. Paget. (*Lectures on Surgical Pathology*, Philadelphia, 1860). He informs us that after the infliction of an open incised wound, the blood gradually ceases to flow, and is followed by a blood-tinged or serous looking fluid; this gradually becomes paler, and collects like a whitish film or glazing upon the surface of the wound. Moisture, whether in the form of water, dilute alcohol or glycerine, will produce this result.

According to the same authority, this condition, called by him the state of calm or inactivity, is ended in from two to eleven days, by the return of blood to the part. In what way the ordinary water dressing can favor this return it is difficult to understand. On the contrary, alcohol assists reaction, not only by its known power as a local excitant, but also by being absorbed, and thus stimulating the general circulation.

M. Chédervergne, of Paris, has published (*Du traitement des plaies chirurgicales et traumatiques par les pausements à l'alcool*, p. 15, 1864) three cases going to prove and illustrate the truth of this statement. He states that in December, 1863, a patient entered the Clinical Hospital, carrying an enormous tumor, situated upon the posterior part of the left leg; this was removed, leaving a large denuded surface, extending from the propliteal space to the heel. An alcoholic dressing was applied, and five days after the patient showed symptoms of intoxication, which it was impossible to attribute to any other cause than the treatment employed. He also mentions (ibid. p. 21,) two other cases in which a feeling of exhileration was excited.

Looking at the subject merely from a theoretical point of view, we should fear that alcohol, by its local and constitutional effect, would excite excessive reäction. Such, however, is not the result of actual experiment at the Clinical Hospital; and M. LeCourt, Professor at the Medical School of Caen, states ("*Une lettre avec des observations cliniques sur l'emploi des alcooliques en chirurgie*"—Paris, 1859) that he has employed alcohol as an application to wounds in at least fifty

cases, and that in only a small proportion of the entire number was he compelled to suspend the use of the dressing on account of too great inflammatory action. Some degree of inflammation seems necessary, since, in the opinion of M. Paget (p. 140), the ordinary process of granulations in its commencement, is morbid, and resembles inflammation in at least two points—namely, 1st, that the increased quantity of blood in the part producing granulations moves more slowly than in health; and, 2dly, that the increased supply of blood precedes the increased production of material." This material is similar, in every visible respect, to coagulable lymph. If undisturbed, it will soon present minute points of vascularity; these gradually increase in extent, and in two or three days give place to granulations.

It is at this stage of the healing process we so often observe the inefficiency of water or cerate. The circulation in the part is so languid, that the granulations frequently become large, flabby and livid. On the contrary, when alcohol is employed, the granulations are uniformly florid, granular and scarcely raised above the surrounding tissues. Suppuration or degeneration of the plastic lymph is hardly perceptible.

M. Nélaton and others do not claim for alcohol an infallibility which does not belong to quinine or any other so-called specific; on the other hand, they *do* believe in its prophylactic power against pyæmia and erysipelas, and in confirmation of their belief, bring forward facts relating to the non-occurrence or diminished frequency of these affections. To appreciate the full meaning of these observations, we must remember that they were not collated from private practice, but in one of the largest hospitals of Paris — a hospital situated in one of the most unhealthy districts of the Latin Quarter, and presenting an unusual array of circumstances predisposing to surgical complications. Among such we may enumerate crowding, poor ventilation, insufficient or inappropriate food, absence of the consolations and encouragements of friends, and generally constitutions naturally weak or debilitated by disease.

All of these influences were present in the surgical wards of the Clinical Hospital, and yet, under the employment of alcohol, only one case of pyæmia occurred during the first eight months of 1864. In like manner, during the first five months of the same year, there was not a single case of traumatic erysipelas, although numerous cases of an epidemic nature happened in other Parisian hospitals. About the first of June, however, the Interne of M. Nélaton reported three cases, of which the following is an abbreviated translation:

Observation 1*st.* The first case was that of a young man aged sixteen years. He submitted to an operation for the removal of a large ganglion, situated in the region occupied by the parotid gland. General symptoms of erysipelas set in, with chill, fever and derangement of the stomach. The wound looked well, but on the third day of the fever, an erysipelatous inflammation was discovered, occupying the shoulders, the scalp and the eyebrows — in other words, surrounding the parotidean region, but always respecting the borders of the wound, and the parts bathed with alcohol.

Observation 2*d*. The second case was that of a woman aged sixty-two. On the 23d day of May, 1864, she underwent an operation for the removal of a cancerous tumor of the breast. The same general phenomena, as in the first case, showed themselves; in two days erysipelas appeared with its customary character, upon the trunk, then upon the arm, near to the breast which had been removed, but did not invade the part which had been dressed with alcohol.

Observation 3*d*. The third case was that of a woman forty-nine years old. On the 24th day of May, she sustained an operation for the removal of a tumor on the thigh. The wound was dressed with alcohol, and for a time all went well; suddenly the appetite diminished, and a febrile rëaction supervened, followed by a red œdematous inflammation upon the back. In three days this disappeared; but after seven days there was erysipelas of the face.

The three observations thus presented possess an interest even greater than those relating to the non-occurrence of erysipelas; they show the enemy no longer kept in the back-ground, but actually making the attack and suffering defeat. In other words, they picture an erysipelatous inflammation spreading to the very precincts of the wound, and there being arrested.

In addition to what has already been said, it may be remarked that alcohol, in common with water, surpasses all other applications in point of cleanliness. When first applied to a denuded surface it causes a sensation of heat, but in a few minutes this disappears, and after two or three applications, on successive days, does not return. Patients questioned upon this point, do not complain so much of the hot as of the cold sensation occasionally experienced.

A stranger, entering for the first time the surgical wards of the Clinical Hospital, will notice that the atmosphere is unvitiated by any foul odor, and unchilled by evaporating water.

And now a few words upon the best method of applying alcoholic dressings. The alcohol employed at the Clinical Hospital is about equal in strength to the dilute alcohol of the U. S. Dispensatory. Generally it contains a proportion of camphor ; but this is not considered essential. Occasionally circumstances may require that the alcohol should be further diluted. We may raise the temperature of the mixture, and so avoid the disagreeable sensation of coldness, by taking the strong officinal alcohol, and just before applying it, adding an equal volume of water. The preparation may be brought in contact with the wound by lint or oakum, and the evaporation be prevented, in a great measure, by thick cloth or oiled silk. Usually it is sufficient to renew the dressing once or twice in the twenty-four hours.

In conclusion, I would say, that I have purposely avoided the discussion of theoretical points. Nor have I noticed an opinion which I once heard expressed by M. Maisonneuve, in effect, that alcohol causes paralysis of the blood vessels, and so predisposes to secondary hæmorrhage. This theory was first proposed by Claude Bernard, to account for the non-absorption of a certain poison, and, so far as I am aware, its truth has never been demonstrated. It has rather been my object to present facts which have been clinically observed by the Surgeons and Internes of the "Hôpital des Cliniques." It now

remains with clinical students of this State and America to substantiate or subvert the foregoing conclusions; to determine how far the beneficial action of alcohol, as a surgical dressing, will warrant its substitution for less expensive and time-honored applications.—[*From Proceedings of Connecticut Medical Society*, 1866.]—*St. Louis Medical Reporter*, Oct. 15, 1866.

Bibliographical Record.

A Handy Book of Ophthalmic Surgery, for the use of Practitioners. By John B. Laurence, F. R. C. S., M. B., (University of London,) &c., and Robert C. Moon, House Surgeon to the Ophthalmic Hospital, Southwalk. Philadelphia: Henry C. Lea, 1866. 8vo., pp. 191. [From Geo. Ellis, Bookseller, New Orleans.]

This little volume of 185 pages is beautifully printed, and it presents, as regards arrangement, the usual English features. It contains most of the more recent modifications in the operative surgery of the Eye. The style is quite good, and the descriptions are generally lucid.

A book should be judged by the manner in which it accomplishes the purpose for which it was *specially* designed. Examined by this standard, the one before us is very far from being perfect. The essential fault of the work consists in the fact that it does not give sufficient prominence to those diseases which most interest the practitioner.

Among the subjects, a knowledge of which is of chief importance to the practitioner, are injuries of the Eye and the neighboring parts, diseases of the cornea, of the conjunctiva and of the iris. These diseases are by far the most frequent, and they most often cause injury to the sight ; while they, in the majority of cases, especially in their earlier stages, are thrown on the practitioner for assistance. These subjects are treated of in a too general manner to be in a high degree profitable to the practitioner. It is true, that his mind would be burdened by a minute account of all that is known of the above diseases ; still a much more minute history of a given disease, its complications and treatment, is necessary to entitle a book to the claim of being a good guide to those who, as a rule, know but little of the Eye and its diseases. Some of the most important local

remedies barely receive mention ; and the dangers incident to their use, and the precautions necessary therefor, are hardly noticed.

The operations which the practitioner should scarcely attempt, are treated of at greatest length ; while these which he might perform successfully, when necessary, are mostly passed over quite superficially.

It is merely an outline, interesting, it is true, but it is not a sufficient guide. It seems best adapted for the use of students attending a clinic for diseases of the Eye, who, however, do not desire to give special attention to the subject.

The Science and Practice of Medicine. By WILLIAM AITKEN, M. D., Edinburgh, Professor of Pathology in the Army Medical School, &c. From the fourth London Edition, with Additions, by MEREDITH CLYMER, M. D., late Professor of the Institutes and Practice of Medicine in the University of New York. 8vo. Vol. I, pp. 955. Philadelphia : Lindsay & Blakiston, 1866. [From Geo. Ellis, Bookseller, New Orleans.]

THIS great work, of which the last three editions have followed each other in rapid succession, is now for the first time issued from the American press, and we are informed that the remaining volume will soon be forthcoming. The appearance of the first volume warrants the belief that this treatise will receive the same high appreciation in the New World which has been awarded in Britain, and we await the arrival of the other to give the whole such an examination and notice as its merits deserve.

As regards the scope and object of the work, we quote from the American editor : "It is no retrospect of the progress of Medicine, or record of old-time vagaries and doctrines, but a fair exposition of the Medical Science and Art of the day, summarized understandingly. Intended for the use of the Medical Officers of the British Army, the influence of climate upon disease has been kept in view, and the author has largely availed himself of the practical contributions of the Medical Staff of the British Army and Navy, and of the resident physicians of the East Indies, both in the description and treatment of the disorders of hot countries. The Department of Medical or Noso-Geography, which treats of the conditions by which health and disease are distributed over the globe, and is the basis of hygiology, receives attention for the first time in a Treatise on the Practice of Medicine."

We are indebted to Dr. Clymer for a number of additional articles on a variety of diseases, some of which, by their prevalence in

camp and hospital during the late war, others from the attention which they have lately been paid by medical writers, have gained an importance that establishes their claim to a place in an extended systematic treatise. While we commend the fidelity and ability with which he has discharged this duty, we must observe that his fondness for new and unusual words savors of pedantry rather than correct taste, especially in the use of some not yet recognized by the best of lexicographers.

A Treatise on the Practice of Medicine. By George B. Wood, M. D., LL. D., &c. Sixth Edition. In two volumes, 8vo. pp. 1934. Philadelphia : J. B. Lippincott & Co., 1866.

We have received from the publishers, through Messrs Stevens & Seymour, Booksellers, a copy of the above work. The first edition, published nineteen years ago, established the reputation of Prof. Wood as a writer in this branch of medicine, and the additions made in the successive editions have served to render it during this period the generally accepted standard authority of Practice in this country. The interval which has elapsed since the appearance of the fifth edition in 1858, has been marked by unexampled activity and investigation in the profession, and by numerous advances and improvements in the application of medical science to the art of healing. Observant of all this progress and alive to the importance of maintaining the usefulness of his work, and the position which it had won, he has thoroughly revised it, adhering, however, strictly to the original plan. With the incorporation of nearly two hundred pages of new matter, it again becomes as complete as any other systematic American treatise, and bears the marks of the author's well-known industry, sagacity and judgment. Happy is it for the public, and especially for the profession, that the long and honorable career of Prof. Wood has been lengthened so as to allow him again to present the fruits of his mature understanding. Hardly may we look for another crop from that teeming tree, but the memory of its generous fruitfulness shall be given while votaries are found at the shrine of Medicine.

A Manual of Medical Jurisprudence. By Alfred Swayne Taylor, M. D. F. R. S., &c. Sixth American, from the eighth and revised London Edition, with Notes and References to American Decisions, by Clement B. Penrose, of the Philadelphia Bar. 8 vo. pp. 776. Philadelphia : Henry C. Lea, 1866. [From Geo. Ellis, Bookseller, New Orleans.]

A work like this, of long established reputation and accepted author-

ity, does not require an extended review nor need commendation at our hands.

The changes thought proper by the author, in preparing a new edition, he thus states in his preface: "The subjects have been reduced in extent by the omission of the details of cases, which now find a more appropriate place in the large work lately published under the title of 'The Principles and Practice of Medical Jurisprudence.' * * * * For the information and guidance of medical men, two chapters on evidence and the duties and responsibilities of medical witnesses, have been placed at the commencement of the volume, and some medico-legal subjects, not hitherto treated in the previous edition, have been introduced. Among other changes may be noticed the introduction of numerous engravings, respecting the crystalline forms of poisons, and the apparatus used for their detection."

The American editor, in order to render the work more complete in itself, has thought proper to restore some of the omitted matter, and borrow some material from the larger work alluded to. He has also made "numerous references to American practice and decisions," and thereby increased the value of the work as a store of refereuce and authority in this country.

A Practical Treatise on Diseases of the Skin. By J. MOORE NELIGAN, M. D., M. R. I. A., etc. Fifth American from the second revised and clarged Dublin edition. By T. W. BELCHER, M. A., M. D., etc. 12mo., pp. 462. Philadelphia: Henry C. Lea. 1866. [From Geo. Ellis, Bookseller, New Orleans.]

THE authority of Dr. Nelligan on cutaneous diseases was perhaps second to no other; but his treatise, though excellent at the date of his first edition, 1852, had become imperfect from the great advances made in that special branch of medicine during the lapse of sixteen years.

The death of its author, in 1863, might have left a new edition of the work still a desideratum, had the Dublin publishers not been able to secure as editor a pupil of Dr. Neligan, and one greatly interested in this class of diseases. Without omitting any matter contained in the former edition, Dr. Belcher has incorporated all the late discoveries bearing upon the subject, with an increase of 100 pages of new matter, consisting in part of the following additions:

"1. A copious Table of Contents.

2. Considerable additions to Chapter I, on Classification; chiefly as regards the modern nosologies of Hardy, Hebra, Buchanan and others.

3. Derivations and meanings of technical terms; and their synonyms.

4. Reference to Dr. Neligan's *Atlas of Cutaneous Diseases*, as also to the plates of Cazenave and Hebra.

5. References to Professor Macnamara's sixth edition of Dr. Neligan's *Materia Medica.*

6. Quotations from, and reference to authorities in every case, particularly where the full description of the subject is excluded by reason of the practical nature of the work.

7. Explanations of the peculiar modes of treatment, and in some cases the prescriptions, of the best home and foreign dermatologists.

8. An entire translation of the numerous prescriptions in the first edition, with those now added, into the technical language of the *British Pharmacopœia.*

9. A Posological Table of the most important, and mostly poisonous, medicines used in the treatment of cutaneous diseases.

10. A copious Bibliographical Index of the chief authorities quoted.

Notices of the following, among other diseases, are now for the first time added: Rubeola, Scarlatina, Variola and its allies, Furunculus, Anthrax, Pustula Maligna, Lepra Hebræorum; a full account of Elephantiasis, Morphie, Frambœsia, Morbus Tauricus, Aleppo Evil, Ngerengere, Pellagra, Morbus Addisonii.

The Chapter on Parasitic Diseases, or Dermatophytæ, has been revived and considerably added to, as also that on Diseases of the Hair and Nails, and that on Therapeutics."

The work thus forms a complete embodiment of what is now known of Dermatology; and though perhaps less valuable to the specialist than the large work of Wilson, to the general practitioner it must prove an invaluable *vade mecum*, reliable, convenient, and sufficiently comprehensive for all ordinary purposes.

Cerebro-Spinal Meningitis; being a Report made to the Illinois State Medical Society, at the meeting held at Decatur, June, 1866. By J. S. Jewell, M. D., Professor of Anatomy, Chicago Medical College, &c. Pamphlet, pp. 68. Chicago, 1866.

We are indebted to the writer for a copy of this monograph on a disease which has lately excited anew the attention of the profession, and the public at large, by its fatality and extended prevalence through the country. He has evidently investigated the subject extensively and carefully, and he expresses his views with candor and force, supported by close observation of its rational phenomena, and the result of numerous examinations of its pathological effects. His opinions are, therefore, entitled to a high consideration, and for this reason, as well as the interesting nature of the subject, the essay no doubt will, as it ought, circulate widely.

The author first gives a brief historical sketch of the disease, as it has prevailed in the Eastern Hemisphere and in the United States. He then treats the subject under several distinct heads : (1) Symptomatic History ; (2) Post Mortem History ; ; (3) Etiological and Pathological History ; (4) Pathological Deductions ; (5) Therapeutic Deductions ; (6) Therapeutic History. It seems not to have entered into his plan to give a connected description of the course of the disease, for the several symptoms are treated separately, without regard to their order of succession. To one familiar with the disease from personal observation, this may be of small consequence ; but to the learner this arrangement, or rather want of it, must fail to afford a definite idea of its progress.

In its nature, he believes the malady to be specific and epidemic, but not contagious in any sense.

As regards the mode of action of the cause, his views are highly interesting. Premising that this cause is an external one, unknown save by its effects, becoming active by absorption into the blood, he observes :

" We will then suppose the essential cause of the disease so to act on the organic nervous system, or that part more *particularly*, which controls the circulation of the cerebro-spinal axis, as in various degrees to destroy its influence over the same, namely, the small arteries which ramify *so richly* in the *pia mater* and ventricular walls of the brain, and which do not have, as the larger arteries do, an *elastic* but a *muscular coat.* I should expect, *a priori*, any consequence which would flow from this state of the vessels to be most plainly marked where the vessels are most abundant, or on those parts of the *pia mater* most richly supplied with vessels, namely, parts at the base of the brain, along its fissures, sides, and upper surface of the brain, and on the medulla oblongata, and cervical and lumbar portions of the cord. This accords *entirely* with the *facts* of pathological anatomy.

Now, I suppose this poison to be capable, sometimes, of acting so energetically in destroying the excitant energy of the organic nervous system, and probably directly on the brain and spinal cord, as to produce death so soon that no considerable traces of disease shall be left to be observed after death, sufficient to account for the fatal result. Again, I suppose it may so act as to produce disorder of the capillary circulation, especially that of the cerebro-spinal axis, in the way already indicated. In various degrees its controlling influence over the circulation is destroyed. There is paralysis, more or less complete, of the muscular coat of the small arteries, the chief function of which, aside from that of a mere conduit, I believe to be to communicate a new impulse to the blood, *necessary* to circulate it through the capillaries. What I suppose to take place in the pia mater, *e. g.*, is similar to what *is observed* to take place in the con-

junctiva or ear of a rabbit, when the influence of the organic system is withdrawn from the muscular vessels. I suppose the same phenomena to occur here as in the mesentery of a frog or the wing of a bat, at or toward the close of the experiments detailed. The vessels cease to contract, they relax, increase in size, not only for this reason permitting the blood to accumulate, but because they have lost the power to propel the blood onward, which is necessary to circulate it through the capillaries, which latter are entirely passive, as regards the circulation of the blood."

The analogy between this supposition and one which has recently been uttered on the mode of action of the Cholera poison, is worthy of notice. If this latter agency, in accordance with the doctrine of selection in its operation, after absorption into the blood invades the organic system of nerves, and particularly and primarily those presiding over the portal circulation ; why might not the morbific cause which the writer recognizes expend its force first and chiefly on the organic nerves controlling the cerebro-spinal circulation? These questions involve ideas highly interesting and attractive in theory ; and with the light already afforded by observation, both clinical and *post-mortem*, are, in our opinion, the most satisfactory yet offered.

Practical Therapeutics, considered chiefly with reference to Articles of the Materia Medica. By Edward John Waring, F. R. C. S., F. L. S., etc. From the second London edition. 8vo., pp. 815. Philadelphia: Lindsay & Blakiston. 1866.

Whether we have regard to the number or to the character and standing of the works which have very lately been added to the already much enriched literature of "Therapeutics," it is safe to conclude that this branch does not fail to keep step in the *rôle* of progress of medical science, and further, that it is not to be permitted to lag behind even the most progressive department of professional study. In this country, Stillé's Therapeutics and the customary edition of the Dispensatory are the latest therapeutical publications that, at this moment, occur to our recollection, but European writers have supplied ample material to fill any hiatus which may be supposed to have been occasioned by the reticence of American authors. In France, besides a new edition of their Codex, Bouchardat has published a fourth edition of his *Manuel de Matière Médical de Thérapeutique et de Pharmacie*, and the excellent work not yet completed, *Dictionnaire de Thérapeutique Médicale et Chirurgicale*, by Bouchut and Despris, deserves especial mention. In England we have the exhaustive treatise on stimulants and narcotics by Anstie; a new edition of "Headland on the Action of Medicines," with other interest-

ing and instructive monographs. But at this time we call the attention of our readers chiefly to a "Manual of Practical Therapeutics," (2nd edition), by Edward John Waring. The author of this treatise was assigned to special duty in H. M. Indian Army, as Editor of the Pharmacopœia of India, and growing out of this service has contributed a number of articles upon various subjects connected with Indian Medicine, which his countrymen seem to appreciate highly. None of the above mentioned works have been reprinted by the Publishing Houses of America, except the "Manual of Therapeutics." This has been republished by Messrs. Lindsay & Blakiston, of Philadelphia, in highly creditable style, and may be had at the Bookstore of George Ellis, of this city, to whom we make acknowledgment for the receipt of an early copy.

Whether the power of expressing one's opinions with the expenditure of very few words and of rendering, at the same time, that expression full and to the point, be as Scaliger said of Dictionary-making, an endowment of the Deity, or an acquirement, it is certainly characteristic of Dr. Waring's manual to a remarkable degree. Opening the book for the purpose of exhibiting to the reader a specimen of the author's manner of treating his subjects, we have selected his general consideration of narcotics, and quote the whole paragraph, including their classification; objects of employment; mode of action, and observations on their use.

"Narcotics are medicines which cause stupor or sleep, this state being preceded by a certain amount of vascular and cerebral excitement. Other names have been given to this class of medicines, as Soporifics, Hypnotics, Cerebro-spinants, and Sedatives; but the last named are distinguished from narcotics by the absence of a primary state of excitement in their operation. Under the head of Narcotics are comprised Opium, Stramonium, Belladonna, Conium, Hyoscyamus, Cannabis, and Camphor.

"*The objects for which they are employed.* 1, to procure sleep; 2, to allay pain or spasm; 3, to arrest inordinate secretion; 4, to control inflammatory action or irritation.

"*Modus Operandi.* The greater number of narcotics act mainly on the brain and spinal column. 'Their primary action,' observes Dr. A. T. Thompson, 'is not confined to the nerves of the stomach; for, if any narcotic be applied to the surface of the body, the same results follow, although in a minor degree, as display themselves when they are taken into the stomach. If the application be made to entire membranous surfaces, the energy of the narcotic influence is in ratio to the absorbing power of the surface; and if it be injected into the thorax between the lungs and the ribs, the action is more energetic than when a narcotic is taken into the stomach. Applied to a wound or denuded surface, they are absorbed into the system,

and produce their specific effects. From these facts it is evident that narcotics operate on the brain and spinal column, having been previously absorbed and carried to these organs by circulation.' Fully admitting the justice of these observations, it appears undeniable that narcotics exert a degree of local influence directly on the nerves to which they are applied, independent of the brain and spinal cord, *e. g.*, the immediate alleviation of pain, or pruritus in the extremities, by the application of Opium or Belladonna. 'As a part of their general sedative influence upon the nervous system,' observes Dr. Ballard, 'they diminish the secretions of the liver and kidneys, arrest more or less the performance of those functions which severally attach to the different parts of the alimentary canal, retard digestion, and constipate the bowels, both by lessening the secretions poured into them, and by rendering their movements sluggish. Some dilate, while others contract the pupil; some appear to concentrate their sedative action more particularly upon the functions of the encephalon, others upon the contractile power of the alimentary or bronchial tubes; while a strict distinction is to be drawn between those which occasion constipation and those which do not, all these things being of great practical importance."

In ¶1939, under the caption of "Remarks on the use of Opium," the author gives merely a passing allusion to the antagonistic properties of opium and belladonna. The subject is one of much importance, but we presume it did not enter Dr. Waring's cast of a manual to devote more space to its consideration. In his article on belladonna, however, while noticing its indications in delirium tremens, he refers to its beneficial application to a case of "furious delirium, *the pupils contracted.*" A case which has occurred in our own practice within the past few days, strengthens our opinion that this intimation of the value of belladonna in certain morbid conditions associated with contracted pupils may be found serviceable to the practitioner. The case in point was this: A man aged about twenty-five years, of apparently good constitution, largely developed brain and quite intelligent, labored under a severe attack of dysentery. The exhibition of nearly 2 grains (partly by enema) of opium every fourth hour was followed by insomnia for a period of nearly seventy-two hours, although the narcotic was persistently administered during all that time. We inferred the existence of some counter idiosyncracy to the usual effects of opium, and the contracted pupils suggested to our mind the possibility that the relations of the pupil dilators to this idiosyncracy would undergo corresponding change, and that they would be found sleep-inducing agents in measure as opium produced wakefulness. We accordingly gave a pill composed of one-third grain of extract of belladonna (known to be energetic), two grains of extract conium and two of extract of hyoscyamus.

The patient slept all night, but complained of nausea the following morning, which he referred to the pill, and which must have been ascribable either to the opium or the other narcotics. We do not propose to predicate any new principle of practice upon this solitary observation; yet we feel satisfied that it, together with the hint from Waring, are worth remembrance on the part of medical practitioners. Further observations on these points may evolve valuable facts.

The articles of Materia Medica in Dr. Waring's manual are arranged in alphabetical order of sequence. It is likewise provided with an index of medicines, so as to facilitate speedy reference, in the office of the practitioner, or at the desk or lecture-room of the student. There is also an index of diseases with remedies appended. To each nosological designation in this index is attached a very long, or a very short list of drugs reckoned as appropriate to its cure, accordingly as the disease is less or more amenable to treatment. Under the head of epilepsy the practitioner, if in the slightest perplexity as to his choice, may select from an armory of seventy-five weapons, differing widely as to object, composition, or finish; under the head of phthisis the store is increased by thirty additional pieces, with commensurate extension of variety as to purpose or polish. Alas! to think with what eagerness young members of the profession will scan these catalogues of medicines, appended respectively to two diseases but little subject to our art, and appeal from one remedy sinking into disgrace, to another rising in reputation; forsake it in turn for a third and a fourth; until at last, when disappointed and dispirited, the truth bursts upon them, that in following these lists, as a child goes over its alphabet, their attention has been directed to *names* of diseases rather than to *conditions* of diseases. We make the statement, and feel assured it will be sustained, that Waring's Manual of Therapeutics meets a real want on the part of the profession, and is therefore well worth a place in every Medical Library.

Notes on Epidemics: For the Use of the Public. By FRANCIS EDMUND ANSTIE, M. D., F. R. C. P., etc. 12mo., pp. 95. Philadelphia: J. B. Lippincott & Co. 1866.

OUR thanks are due to Messrs. Blelock & Co. for a copy of Dr. Anstie's work on Epidemics. An English reviewer terms it "Dr. Anstie's dainty little volume," and the appositeness of the qualification will not be questioned, whether it be regarded as applying to

the admirable good sense and brevity the author has displayed in treating his subjects, or to the excellent taste with which the publishers have executed their task. Dr. Austie's book is not a history of epidemics, but is merely "the expansion of an article" published in one of the British Reviews, and written for the purpose of conveying information on these subjects to the non-professional public, and educating them up to such a standard of sanitary knowledge that they may at the same time aid the medical profession in its present great work of sanitary improvements, while they increase their own protection against the inroads of epidemic disease. We know that the movement of the influences affecting human vitality render *some* certain death rate necessary and inevitable. We know also that this unascertained quantum of inevitable deaths is, in all countries and in all years, greatly enlarged by the addition of numerous deaths unnecessary and preventable. This latter proposition is especially true in reference to all epidemics, and it is to the end that he might enlighten the public mind on this point and reduce the death rate from these sources, that Dr. Anstie has written his book.

A lengthy notice of so short a book would be out of taste; but we hazard the statement that but few intelligent readers, medical or not, will complete the perusal of this little volume without regretting that its author had not added more; acknowledging at the sane time that it is one of the most practical and interesting treatises of the day.

A Practical Treatise on the Physical Exploration of the Chest and the Respiratory Organs. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine in the Belleveue Hospital Medical College, etc. Second edition, revised. Philadelphia: Henry C. Lea. 1866.

Messrs. Blelock & Co. have courteously sent us the revised edition of this valuable work. We are gratified to learn that the able author has determined to restrict his teaching to fewer words. No one in this country is more competent to dictate a book upon the interesting and important subject of auscultation; yet we oftentimes question the propriety of spreading a subject over a space of six hundred large pages, when the same important facts can be taught in twenty familiar lessons. We must, however, in equal candor, state that we regard the book of indispensable value to every one who wishes to acquire a knowledge of auscultation and percussion. In proof of this assertion, we keep a copy near at hand for constant reference.

A Manual of Auscultation and Percussion. By M. Barth and Henri Roger. Translated from the sixth French edition. Philadelphia: Lindsay & Blakiston. 1866.

Through the politeness of Mr. George Ellis, we have received this little volume of 161 pages. It is neatly bound, is portable, and of convenient size for a student's pocket. In 1847 Dr. L. M. Lawson edited this work, as translated by Dr. Newbizzing, of Edinburgh. Since that time, a good edition of this practical teaching has not been published in this country. The present work aims at brevity, which is always desirable in a manual; and we recommend it, as a just exposition of the subject of auscultation and percussion. In evidence of this fact, we urge all students to add this volume to their collection of text books.

Editorial.

As cholera has again visited our shores, and is extending its ravages over various parts of the country, we feel it to be our duty, as a journalist, to place before our readers the latest information afforded by our exchanges in reference to its nature and treatment.* But even when we shall have discharged our full duty in this respect, and shall have given our readers the gist of the most recent dicta on this subject, we fear they will still have good cause to exclaim, "*Cui bono?* Wherein are we better prepared to appreciate the nature or treatment of the disease under discussion, than before we had read your editorial ?"

Although we may not be able to answer these enquiries in a manner satisfactory to either querist or questioned, we still believe that the recent utterances of the profession in regard to cholera are worthy of attentive perusal and study. Some of them advocate theories ingenious and specious ; but the practice which has been cut to fit the measure of these theories has not been found to *cure* cholera with any more frequency and certainty than that based upon principles less philosophic in appearance, or, we had nearly said, based upon pure empiricism. Others of these recent publications

*We prepared the following editorial remarks for our November number, but pressure of material induced us to lay them over. We now publish them because we believe that the probability of the prevalence of cholera during the ensuing spring and summer will make them interesting to our readers even now, although there is at this time scarcely an intimation of warning that this mysterious invader of our shores may not have taken its final departure.

are simply absurd ventilations of personal opinion, without intrinsic point or value. But even these latter teach us some lessons of professional interest, for they show the medical mind to be in that state of incertitude and vacillation which marks the transition periods of medical philosophy. For instance, none of these writers of the latter category would dare to publish crude opinions, differing from all others of their profession, in reference to any disease whose pathology and treatment were definitely established ; yet in regard to cholera they may deliver the most pompous pronunciamentos, and demand adoration each for his particular dogma. If one attempts to upset their idol, they say, show us the one you will erect in its stead, and prove that he is the true God. But few of us have any fancy to become Iconoclasts upon such terms. Nothing in recent medical literature enables us to write more authoritatively than formerly, with regard to the intimate nature, chemical or physical, of cholera-producing causes. It may, however, be accepted that, like other diseases which may be termed "specific and spreading ;" it has for its cause a "special poison" : Whatever is the character of this poison, or where originated, let others more learned than we discuss.

Notwithstanding our confessed ignorance on this point, it is important to keep in view certain phenomena which attend the multiplication and diffusion of this poison. One of the most prominent characteristics of cholera poison is the marvellous rapidity of its multiplication, and a corresponding rapidity in its cessation and destruction. An epidemic of cholera may in the course of a very few hours reach a climax of fatality altogether awe-inspiring to even the best balanced medical minds ; while in an equally short space of time it may entirely disappear from its field of desolation. The *rationale* of these now mysterious phenomena cannot, it may be presumed, always escape the acumen of human research, but the period of their interpretation has not yet arrived. The following laws may be safely stated to govern with great uniformity the spread of cholera poison :

1st. Its latitudinal range is between 64° north and 21° south. (B. W. Richardson, Trans. Epidem. Society.)

2d. Elevations of temperature favor its spread. If it has been observed to continue its ravages during the cold of a Russian winter, the explanation may be found in the unsanitory condition of Russian dwellings.

3d. This cholera poison, although apparently susceptible of a limited aërial transportation, cannot be specifically classed among the air-borne causes of disease ; as, for instance, the exciting cause of influenza ; neither have we in this country any instance of its origination *de novo*, as of diseases exclusively dependent upon telluric agencies for their production ; nor have we instances of its origination in, and spread from points removed from lines of travel, without some attendant circumstance to warrant a suspicion of its transportation by human intercourse. We therefore hold that the remark made long since by Dr. Graves is still susceptible of confirmation, "that cholera seemed regulated by no common physical circumstances, except human traffic and human intercourse"

But however firm may be our belief in the necessity of the introduction of some germs of cholera poison to the production of an outbreak of the disease, all observers agree that it finds a soil most genial to its development in a population debilitated by malarial or other depressing influences, or where the air is vitiated by neglect of cleanliness or other sanitary observances. It is, therefore, the duty of the physician to endeavor to prevent cholera attacks by the most careful hygienic injunctions as it respects diet, water, pure air, and complete purifications of dwellings ; avoidance of exhausting influences, or irregularities of habit ; but above all the observance of the utmost attainable cleanliness around the beds of the sick ; removing immediately and destroying by disinfection, fire or burial, the poison of all egesta and saturated clothing. The nurses should be instructed to exercise great care that the material thrown off by the sick can find no possible access, through means of their hands or clothing, to articles of food or drink. Whether Dr. Snow's theory with regard to propagation of cholera by means of matter from the *primæ viæ* of the sick being taken with the diet or drink into the stomachs of the well, be tenable or not, it is certainly so disgusting as to cause us to keep these considerations constantly in view.

By the way, it may be well to mention, in connection with Dr. Snow's theory of the introduction of cholera poison into the system with food or drink, that very lately a rumor has become current in London that the company which supplied the infected district had, by some means, constructed their supply pipes so badly that feculent matter found admission, and in this manner the choleraic poison was diffused over all portions of the city supplied by this water, below

the point of infection. We cannot advise our readers of the credibility of these rumors, but can only state that, at our latest information, they were discussed in respectable circles.

4th. Whatever speculations may be entertained as to the phenomena and behavior of cholera poison exterior to the human system, pathologists are generally agreed that, once introduced into the system, its force is principally expended upon the nerves of organic life.

Dr. Mesnet (as translated in the *Brit. & Foreign Med. Chir. Rev.*) says: "Cholera well shows the difference between the nerve-functions of animal life and the expression or features of mental life (*les expressions de la vie de relation*). In the algid state the patient is restless, cadaverous-looking, with the visceral innervation apparently extinguished, the functions of organic life at a stop, yet preserving his intelligence, and almost to the last able to converse: oppressed in spirit and having his ideas slow, his memory in need of being refreshed, yet when roused and his attention fixed, he gives correct answers to questions. This state is not that of cerebral disease, but a kind of yielding to the general depression with which the organic life is well-nigh overwhelmed." "Cerebral action is slow; sensibility to external stimulants is lessened; hearing is deficient; the sight is feeble, and general sensation blunted. As the algid state passes off, the senses—the means of relationship with the surrounding world—resume their wonted power."

So far as we are capable of making up a verdict from the current literature of the day, a decided revolution, both as to ideas of pathology and treatment of cholera is extending itself over the professional mind of Europe. That this has been principally brought about by Dr. Johnson's ingenious and logical theory, seems evident from the general drift of European writings and practice. Even among many of those who decline to accept his doctrines outright, we think we can discern, from the modification of their practice, the outcropping of an unmentioned sentiment of apprehension—a silent mental solicitude lest, after all, this fascinating and almost unattackable theory may be right and others wrong. Dr. Johnson may well congratulate himself upon this tribute to his genius; for the leader of a revolution in any branch of medicine should feel sufficiently complimented if even his disciples in following, yet fail to keep pace with him; while to obtain show of acknowledgment, tacit or expressed, from opponents, is triumph indeed It is too, probably better for the practical

interests of our profession and those with whose lives we are entrusted, that very few followers of medical revolutionists do keep abreast of their leaders, since it so often occurs that the enthusiasm and ardor of the discoverer cause him to transcend the line dividing truth from error. Scarcely any of our readers are at this day unacquainted with this theory, but as we mean to present another which in part coincides with, and in part differs from it, we will, for purposes of comparison, very briefly copy his theory in his own language, as published in a little pamphlet of recent issue:

"The most reasonable theory of choleraic diarrhœa is, that a morbid poison enters the blood either with the air through the lungs, or with the food and drink through the alimentary canal; and that this poison excites certain changes in the blood, in consequence of which some blood materials are spoiled, and thus rendered not only useless, but noxious. These morbidly changed blood-materials are then discharged from the blood-vessels through the mucous membrane of the stomach and bowels, and are ultimately ejected by vomiting and purging.

"Various as are the remote and primary causes of diarrhœa, this one condition is common to all classes of cases; viz., that the contents of the bowel are unnatural and offensive. These offending materials are the immediate cause of the purging; and they must be expelled from the bowel before the diarrhœa can come to an end.*

"From the above considerations we deduce one important and guiding rule of treatment, which is this—*not to attempt by opiates, or by other directly repressive means, to arrest a diarrhœa while there is reason to believe that the bowel contains a considerable amount of morbid and offensive materials.* It is certain that these offending materials must be cast out from the bowel before the diarrhœa can permanently cease. The effect of an opiate at this stage is to prolong the disease, and to increase the risk of mischief, from the retention and reabsorption of the morbid contents of the bowel. If the opiate have the effect of retaining within the blood-vessels some of the morbidly changed blood-constituents, this astringent action will probably be more injurious and even deadly than the retention of morbid secretions within the bowel.

"The purging is the natural way of getting rid of the irritant cause. We may *favor* the recovery by directing the patient to drink copiously any simple diluent liquid—water cold or tepid, toast-water, barley-water, or weak tea; and we may often *accelerate* the recovery by sweeping out the alimentary canal by some safe purgative, and then, if necessary, soothing it by an opiate. Castor-oil, notwithstanding its unpleasant taste, is, on the whole, the safest and best purgative for this purpose. It has the advantage of being very mild and unirritating, yet withal very quick in its action. A

* We need not here take into consideration those cases of diarrhœa which result from ulceratio or other local disease of the bowel itself

tablespoonful of the oil may be taken, floating on cold water or any other simple liquid which may be preferred by the patient. A mixture of orange-juice or of lemon-juice with water forms an agreeable vehicle for the oil. If the dose be vomited, it should be repeated immediately; and the patient should lie still, and take no more liquid for half an hour, by which time the oil will have passed from the stomach into the bowels. Within an hour or two, the oil will usually have acted freely. Then a tablespoonful of brandy may be taken in some thin arrowroot or gruel; and if there be much feeling of irritation, with a sense of sinking, from five to ten drops of laudanum may be given in cold water. These means will suffice for the speedy arrest of most cases of choleraic diarrhœa. If the patient have an insuperable objection to castor-oil, or if the oil cannot be retained on the stomach, ten or fifteen grains of powdered rhubarb, or a tablespoonful of the tincture of rhubarb, or a teaspoonful of Gregory's powder, may be substituted for the oil.

"If the diarrhœa have continued for some hours, the stools having been copious and liquid; if there be no griping pain in the bowels, no feeling or appearance of distension of the intestines; the abdomen being flaccid and empty, and the tongue clean—we may conclude that the morbid agent has already purged itself away. There will, therefore, be no need for the castor-oil or other laxative, and we may immediately give the brandy in arrowroot, and the laudanum, as before directed. The rule in all cases is, *not to give the opiate until the morbid poison and its products have for the most part escaped; not to close the door until "the enemy" has been expelled.* While there are some cases in which the evacuent dose is not required even at the commencement of the attack, there are many more in which the opiate is unnecessary in the later stage. In some cases of severe and prolonged diarrhœa, it may be necessary to repeat the oil and the laudanum alternately more than once, at intervals of three or four hours. Practical skill and tact are required to discriminate these cases. It must be borne in mind that when the choleraic secretions are being actively poured out from the blood-vessels, the bowel, though it may have been completely evacuated by a dose of oil, may quickly again become filled with morbid secretions, and hence the need for an occasional repetition of the evacuent dose."

This theory, in so far as it gives birth to eliminative treatment of cholera, is not by any means new. Many of our readers can call to mind practitioners in America, who advocated this treatment during all our epidemics, from 1833 to the present. We have more particularly in view recollections of one, whose sole treatment of cholera has been purgative doses of calomel, diluent drinks, warmth and stimulants to the surface. Sometimes, in very alarmingly excessive vomiting and purging, he would venture upon repeated doses of an alkali dissolved in mint water with five drops of laudanum added to each dose. This was in days when humoralistic doctrines were in the ascendancy; and although the practitioner to whom we refer

had not, like Dr. Johnson, so elaborated his theory as to make converts of his brethren by the ingenuity and plausibility of his reasoning, still there must have been, at the bottom of his practice, a philosophy holding that it was an error to attempt to check choleraic discharges by astringents solely. This was prior to our days of medical study, but we have a very clear impression that this physician, once eminent, but now too far advanced beyond his three score and ten to take part in either the discussions or practice of his profession, had a reputatien for successful treatment of cholera beyond that of all others in his locality.

Dr. Johnson's friendly critics very properly acknowledge that the most plausible objection to his teachings lies in the fact that, when cholera prevails, most observers admit that diarrhœa, and as they think, the diarrhœa premonitory of cholera, yields to opiates and astringents; whereas, if left without treatment, characteristic cholera discharges and collapse ensue. Dr. Johnson contests the accuracy of these observations, and can only escape from the pressure of these accumulated facts by denying that those cases which recover so quickly and surely are cases of true choleraic diarrhœa. Supposing that he be correct on this point, we confess to a belief that there is no means of distinguishing between non-choleraic diarrhœa and the very first periods of choleraic diarrhœa, if indeed there be any such division in the natural history of the disease; consequently we shall, amid our present lights, continue to administer astringents to those who appeal to us for advice as to the proper treatment of diarrhœa during cholera epidemics. Of course the practice of every prudent physician will be adapted as nearly as may be to the present symptoms of his patient. If there be headache, fever, recognized disorder of secretion, or knowledge of the presence of offending material in the alimentary canal, he would endeavor to correct these conditions before resorting to astringents.

Another serious difficulty in utilizing Dr. Johnson's teachings to practical treatment of cholera, will be found in our inability to determine the period when nature and art—we had nearly said nature and castor oil—had eliminated the poison, and the sluices might be safely stopped. We have for some time held that, in typhoid fever, the diarrhœa of its early stage should not be checked; but we all know that there sooner or later arrives a period when we have to turn our attention to lesions already inflicted, and must keep the intestine at rest: Cholera, as well as typhoid fever, inflicts its lesions upon the

intestinal tract; but, unlike that disease, it gives precious little time to cast about and determine by careful analysis of symptoms when it becomes proper to change our treatment.

The theory we proposed to give our readers as in contrast with Dr. Johnson's, is that of Dr. Lyons, of Dublin. He is "of opinion that we must recognise in cholera as the essential conditions:

I. A state of constant hyper-stimulated, paralysed, or suspended vasi-motor power most observable in the tertiary (radial and tibial) and ultimate arteries, and probably in the accompanying veins, corresponding to the collapse of cholera, with coldness and blueness of surface, shrivelling of the skin in the hands and feet, and death as an immediate result, when the first impression is sufficiently profound.

II. That the foregoing state may be present to an extreme degree, and may even cause death, without the development of specific lesion cognizable post-mortem, as in cases of cholera sicca, or dry cholera—*i. e.*, without vomiting or purging.

III. That the special portions of the nervous system engaged are presumably the vagi and sympathetic centres.

IV. That congestion of the lungs is an occasional but not necessary condition in cholera, and is due to lesion of the pneumonic plexuses.

V. That gastro-intestinal irritation, with vomiting, purging, and rice-water evacuations, are constant, but not universal or necessary phenomena in cholera, and are due to irritation of the gastric, solar, and splanchnic plexuses.

VI. That in the absence of constant or specific lesion in the nerve centres of the vagi and sympathetic, the phenomena of the choleraic condition, which fall essentially within the domain of these centres of nerve power, are due to a potent dynamic agency influencing the nerve centres in question and their branches as conducting media, but not necessarily leaving cognizable physical changes in them.

VII. That the agency producing cholera is thus analogous in dynamic effect to that by which lightning, an excessive electric shock, severe concussion, a blow on the head, the spine, or the stomach, prussic acid, woorali, snake, or other animal or vegetable poison kills, "and leaves no sign."

VIII. That in this view, rigorously considered, the remedy logically indicated by physiology and pathology, is one capable of acting on the vagi and sympathetic centres with great potency; (*a*) that possibly in some alkaloid of great potency such a remedy may yet be found; or (*b*) in some modification of electro-galvanic agency.

IX. That in view of the foregoing conclusions, it cannot be admitted that a leaven, poison matter, or other material element of either organic or inorganic origin is introduced into the body from without, or generated within, which demands elimination. And that the phenomena of vomiting, purging, and collapse, are the expression of excessive morbid functional disturbance, in the continuance of which life is being eliminated; and lastly, that an eliminative medication, as a curative agency, has no basis or rational foundation in pathology.

Dr. Mapother, the Health Officer of Dublin, author of a work on Physiology, and an earnest laborer in the field of medicine, has suggested the calabar bean as a curative agent. Although we have no faith in any practical benefits which are to accrue from its use, we have nevertheless given our readers the process of reasoning which led him to select this substance as a remedy for cholera, in the November number of this Journal, to which we refer them.

We have given space for these extended extracts because they represent the sum of conclusions arrived at by some of the leading European physicians in respect to the pathology of cholera. While Dr. Lyons' propositions exhibit a reflex of the opinions held by several writers, Dr. Johnson's theory is more original, especially so far as it relates to the elaboration of arguments and cases, in support of the eliminative treatment of cholera, and in defence of his peculiar doctrines. We venture further to say that, among the senior members of the medical profession—those with cool heads—and particularly among the veterans of cholera practice, but few claimants will arise to disturb Dr. Johnson in the quiet possessions of all honors accruing to him in this field of speculation. No small share of such honors would suffice to compensate for the conscientious disquietude and sense of responsibility devolved upon their possessors.

Although the clinical phenomena of cholera cases are not wholly accounted for by any pathological theory hitherto announced, we believe the doctrine of systemic drain and blood drainage, to the extent of greater or less lesion of its functions, explains them more nearly than any other. This doctrine, more universally adopted by the profession than any other, has lately been formulized by Dr. B. W. Richardson, with whose reputation our readers are for the most part familiar. We cannot obtain our own consent to mutilate Dr. Richardson's theories and remarks, and therefore publish them in full, except those relating to the treatment of cholera:

"Theorem I.—*The symptoms of cholera are due to the separation of water from the albumen of the blood and of the tissues.*

This theorem, which the symptoms themselves suggest as true, and which has been accepted by considerable numbers of medical men, is demonstrated by the following synthesis:

"If into a serous cavity of an inferior animal is given a quantity of fluid of a specific gravity 100 degrees above that of the blood of the animal be slowly injected, there is an immediate transference of watery fluid from the blood to the injected fluid, the osmotic current being specially rapid towards the denser liquid that has been injected. The serous cavity thus fills rapidly with fluid, and if the fluid

exuded be drawn off the drain will be sufficient to cause death by mere loss of water. The symptoms consequent on this proceeding are identical with those of cholera ; there is coldness of surface, coldness of breath, convulsive movement, shrinking of tissue and general collapse. After death the morbid conditions found are the same as in cholera, viz: viscidity of blood, dryness of tissue, and shrunken condition of vascular organs.

Modifications of detail, according to the animal, are essential for this experiment ; but all animals are susceptible of the symptoms. Common sugar, chloride of ammonium and chloride of sodium are the three crystalloids most ready for the operator. For an animal weighing 1 lb., from one to two ounces of a solution of one of these salts, having a specific gravity of 1160, is sufficient. Symptoms precisely analogous to those of the collapse of cholera may be induced in frogs by injecting a fluid drachm of a crystalloid solution into the dorsal sac of the animal, or even by immersing the animal in a solution containing saline matter of a proper specific gravity.

THEOREM II.—*The separation of water in the blood in the cholera is due either to a local osmotic change in the alimentary canal, or to a general osmotic change in the blood itself.*

By excluding all other possible causes of the separation, there remain none other but the two causes named above. The evidence in favor of each of these is very evenly balanced. The early symptoms of the disorder, and the fact that there is an unmistakable disposition towards exudation from the alimentary surface rather than from any other surface, strongly support the view that the cause of the disease—in the early stage at all events—is exclusively local in its action. On the other side, we find distinctive evidence of changes in the condition of the albumen of choleraic blood. This blood is deficient in hydrating power—in the capacity, that is to say, for taking up water—and hence it may be argued that the primary change is in the blood ; that the water separates, and that, so separated, being deficient in plastic quality, it finds in the enormous vascular surface of the alimentary canal its readiest point of exit from the body.

Physiological experiment again favors this view. If into the aorta of an animal just dead ordinary water be abundantly injected, the alimentary system is invariably the part that is first distended ; nor is there ever anasarca of any tissue nor serous exudation until the alimentary system is saturated. If, therefore, the watery matter of the blood during life were separated so that the homogeneousness of the blood were destroyed, the first point through which the watery matter would exude under the influence of the *vis a tergo* would be the surface of the alimentary canal ; and further, as this is an open surface, from which the exuded fluid can freely escape, the exudation would naturally continue through that surface until the *vis a tergo* were exhausted.

The view most consonant with all the facts is that the choleraic poison finds its way primarily into the alimentary canal ; that in the albuminous secretions of the canal it sets up catalytic changes, leading to its own further production ; that it is absorbed at first from this canal, and is carried, as alimentary substances are carried, into

the blood ; that in the blood it continues to exert its specific action on albuminous matter, leading to separation of water and after exudation of water in the manner above described. The disease thus becomes general from a local point.

On the view as here stated, and on no other, we have an explanation of the variety of character of the malady in regard to duration of symptoms and degree of exudation. In cases where the poison, as first introduced, is small in quantity or comparatively inactive, the infection of the albuminous secretion of the mucous surface and the absorption into the blood would be prolonged, the separation of water would be gradual, and the exudation, an early symptom, would be progressive and determinately marked. In cases, again, where the choleraic poison produces rapid change of albuminous secretion, with quick absorption into the blood, the homogeneousness of the blood would be destroyed with such rapidity as to leave no time for exudation prior to death.

Theorem III.—*The collapse of cholera is due not only to the elimination of water from the system, but to the removal by water of the heat of fluidity or latent heat of the tissues.*

This argument, which has an important bearing on the question of treatment of cholera, is based on a series of new researches I have recently conducted, and to which, in future papers on the heat of fluidity to the animal body, I shall invite the attention of the readers of this Journal. *In limine*, I may say here that each part of the body that has the property of being transferred from the solid to the liquid, and conversely from the liquid to the solid condition, possesses a given capacity for latent heat, or heat of fluidity, and that the process by which the body is heated from the combustion going on in the lungs, is mainly carried on by the agency of heat rendered latent. Thus fatty matter taken in the liquid form into the stomach, and conveyed unconsumed into the extreme parts of the circulation, in being deposited there yields up an equivalent of not less than 162° of heat. Thus water, which, as the grand menstruum of the solids, must be protected from losing its heat of fluidity, is so protected by the saline substances and the albumen that it cannot be solidified even locally at any temperature above 16° Fahrenheit. Thus, and lastly for the present occasion, by their capacity for taking up the heat of fluidity and for yielding that heat up again, the blood corpuscles become the great carriers of that caloric of the body by which all the soft parts hold and maintain their mobility and physical activity.

But in order that the blood corpuscles should be subjected to the influence of living combustion in the lungs, they must be brought over the pulmonic circuit in proper mechanical suspension—in other words, in a state of proper distribution ; and this obtains so long as they are borne in the fibrine of the liquor sanguinis, the fibrine itself being diffused equally through the homogeneous fluid of water, saline matter, and albumen, which we call serum. The moment, therefore, there is separation of water from albumen, the moment the balance of water, albumen, fibrine, and blood corpuscles is disturbed by the separation and abstraction of water, that moment the blood corpuscles cease to be brought correctly to the lungs to fix

caloric. As a result, there is a reduction in the amount of the caloric of fluidity that should be conveyed to the tissues, and then every ounce of water, beyond what is natural, that is conveyed from the organism carries away so much caloric at the expense of so much tissue. In fact, if it were not for the capacity of the water to abstract caloric from the tissues so as to maintain its own fluidity, the water of the tissues of the cholera patient would fall so rapidly that death would almost be instantaneous on the destruction of the homogeneousness of the blood."

We agree fully with Dr. Richardson, in the adoption of the three indications of treatment set forth in his memoir, to-wit: 1. To arrest elimination; 2. To supply the caloric fluidity; 3. To restore the homogeneousness of the blood. To meet the first indication we have opium, by stomach, if borne; if not, by rectal injection or subcutaneous injection. It is our main reliance, and in the preliminary diarrhœa seldom fails to accomplish the purpose for which it is given. Unquestionably there are frequent errors in the manner of exhibiting opium, but they should not be laid to the charge of the drug. For instance, physicians often administer positive doses in such immediate succession that they have no mental record of the amount the patient has received. There are very many conditions, especially among children, and also in some pulmonary diseases of adults, where we wish to obtain the effects of opium and yet fear its full narcosis; in which it is better to accumulate to the desired gradation, by repeated small doses. This rule does not apply to cholera, in the arrest of which a decided impression is demanded. We feel that it is clearly deducible, both from analogical readings and bed-side experience, that one grain of salt of morphia placed dry upon the tongue and carried to the stomach by a small quantity of fluid, is likely to prove more efficacious and not more hurtful than smaller doses given frequently until that amount or a greater amount has been received. We think the same remark true of calomel, which we hold in high estimation in the treatment of cholera; but whose good effects are, in our opinion, confined to those instances in which it controls elimination by some unexplained anæsthetic influence over the gastro-intestinal mucous membrane. In this latter remark we would be understood to exclude any reference to the treatment of the stage of reaction, or restitution from attacks of cholera. We find further therapeutic means of meeting this first indication, in the employment of astringents and local anæsthetics, keeping the patient in a recumbent posture, encouraging perfect quietude, and where his sensations are comforted by such a course,

applying an elastic but moderately firm support to the abdomen by a flannel compress.

To answer the second indication is not easy of accomplishment. In England, general warm baths are apparently growing in favor. The two great objections are the inconvenience of employing them in private practice, and the disturbance, agitation and movements of the patient, attendant upon their use. In Dr. Richardson's remarks under this head we venture the suggestion, that the Physiologist and Chemist had rule over the Physician at the period of their utterance. He solemnly warns us against the habit of cooling the body down with ice or cold drinks. Fairly collected statistics do not sustain the belief that ice or cold drinks are injurious to cholera patients, except in such quantities as to extend the stomach and bowels and thus excite efforts at ejection. Some instances may occur in which bowel disturbance may attend their injection from reflex influence, as so often observed in placing a child to the breast, but in cholera reflex phenomena, either spinal or cerebral, are but feebly manifest. The patient is clamorous for ice and water, and his most tormenting sensation is frequently thirst. It is cruelty to deny him so great a solace as cold water, unless experience, and not theory, shows it to be baneful.

In respect to third indication, Dr. Richardson well observes:

"If we could see a certain and simple way of restoring the homogeneousness of blood, we should have in our hands an immediate antidote to cholera, and the third suggestion would become the first and only suggestion. Unfortunately, we have yet, by continued experiment, to learn this antidote, and we must, as a consequence, reserve the trial of it for the extreme stages of the disease — a last resource."

We all recognize in chloroform one of the most beneficent and blessed gifts ever vouchsafed to man. It does not withdraw its meed of comfort and relief from sufferers with cholera. No other remedy controls spasm so quickly and certainly. It is now pretty generally given without hesitation through all stages of the disease, either by stomach or inhalation. Even in collapse,* when we count the hours with almost breathless anxiety, in doubt whether the patient's chances tend upward or downward, we may still resort to it to allay the pain of spasm. The most approved method of administration is by incorporation with mucilage or syrup of gum arabic, and in doses of 6 to 10 minims, repeated as often as necessary. We be-

*The syncope of choleraic hæmorrhage, in which, as a rule, we desist from medication and devote our attention entirely to restoring blood homogeneity by efforts to nourish.

lieve that the opinion is worthy of further prosecution, which teaches that some alkaloid or remedy possessing potent influence over capillary circulation will yet be found curative of cholera. We believe that there are very many cases which will be benefited by quinine, either internally, hypodermically or by surface frictions with saturated solutions, as in Turkey and India. We believe this especially true of those cases which are associated with, or preceded by, excessive perspiration. Indeed there can be no violence to strictest rules of pathology in supposing that malarial and choleraic poisons may be combined elements in the same case, or that they may enter jointly into the epidemic type, affecting large masses of population.

Our exchanges bring no information of any new method of treating cholera worthy of particular mention to our readers. Statistics indicate a singular uniformity of death rate per cent., under forms of treatment extremely different from each other. It must be true, however, that amid such diversity of plans of treatment some one must be nearer right and more successful than all others. We have sufficiently indicated what method we suppose to be that one. Our choice has been determined not only by much reference to literature within our reach, but by that better test, no inconsiderable bed-side observation. It is true that our observation of the eliminative or "castor-oil" treatment is limited to two or three cases under care of other physicians, and their results were not particularly encouraging. This theory of Dr. Johnson's is the most seductive of all now principally engaging the professional mind. It chimes in so harmoniously with the strains of advancing humoralism, that we predict for it an extended influence. It is a dogma perfectly in accordance with the inferential theory. If we admit a blood poison in cholera, as most pathologists do, what follows so naturally as the hypothesis that the system, by some spontaneous effort, should attempt its removal? Analogy teaches that it does so under most circumstances of blood poisoning: why should it not in cholera? These arguments, especially when supported by the genius of Johnson, are difficult to confute. We can only attempt it by appealing ourselves to nature. We are conscientious believers in the hypothesis of an optimism pervading and controlling all the efforts of nature in the cure of diseases. We believe also that they are sometimes interpreted wrongly; and it is most grossly counter to all our belief in her optimism, to admit that nature falls into the abhorrent error of instituting such desperate measures for the relief of her patients as the

diarrhœa of cholera. Neither do clinical observations encourage us to hope any better success from treatment based upon this theory, than that founded upon doctrines less specious and attractive.

At the time of penning this editorial, our design was to inform our readers as it respects the latest opinions pervading the profession in regard to the pathology and treatment of cholera. We have republished extracts embodying the tenets of the various schools of cholera pathology worthy of notice. We have also given, for what it may be worth, our own judgment in respect to these pathological opinions, and in respect to the varieties of practice to which they give origin. With some apology for the hasty and imperfect manner in which we have jotted down these remarks, we assure our readers that we shall endeavor to keep them advised as to the progress of researches upon this subject.

Coöperation.

IT is one of the highest honors of a learned profession, and one in which the medical body stands preëminent, that any invention or discovery made by any member is presented to the whole, and thus the world enjoys unrestricted its full benefits. The journalist, as a gleaner in the great field of medical knowledge, gathers at large into his own granary whatever he thinks suitable to dispense to his readers; but not this merely, else were he but the apothecary of medical literature, and might in time subside, figuratively, into a dealer in old junk. Besides this, he must act as the direct medium between the individual members and the entire body.

The *New Orleans Medical and Surgical Journal*, the oldest of its class in the Southwest, aims to be an exponent of medical opinion and progress within the area of its circulation. In this duty we, its managing editors, look to the medical men around us as constituents, and appeal to them to support us by the expression of their opinion on the medical topics of the day, and to give evidence that medical science and art are progressive among them. In this object, whose scope is the mutual benefit of all concerned, we invite the coöperation of the patrons and friends of the *Journal;* and should we succeed in making it creditable to our efforts and useful to our readers, it will in the same degree reflect honor on the talent and spirit

of the body to which we belong. At the same time, on the principle of reflex action, it will stimulate to renewed research, and evoke an ambition to accomplish or produce something worthy of commemoration.

Such would be the fruits of the coöperative system of medical literature, which we urge upon the acceptance of our friends. Will they answer the appeal favorably? If so, let them support us not only with counsel and purse, but with the *pen*, which is mightier than the sword to cleave the doubt and darkness that envelop the way to the temple of science.

Correspondence.

[From our London Correspondent.]

136, GOWER STREET, LONDON, 2d November, 1866.

(Lewis' Medical Library and "Medical Mirror" Office.)

WE will commence by looking at the present condition of Medical and Surgical Education in the United Kingdom of Great Britain and Ireland. The great centres of medical and surgical opinion are to be found in London, Dublin, Edinburgh, Oxford, Cambridge, Durham, St. Andrews and Aberdeen. At all these various places the degree of M. D. can be obtained. With the exception of London, all these universities require *residence* at the Alma Mater, as a necessary qualification before admission to examination. The Queen's University in Ireland, however, has recently been granted a supplementary charter, by which it is proposed to do away with residence as a *sine quâ non* for graduation.

There are innumerable medical schools in the United Kingdom, but each town that can boast of an excellent medical school cannot always show a university, or a degree or diploma-giving corporation. In America, your medical colleges give universally the degree of M. D. Here, only the established universities do so. But we have several corporations, which grant their license or their membership or fellowship, as the case may be, irrespective of residence; provided always, that a course of legitimate study, according to their regulations, has been undergone, at a duly recognized medical school with hospital attached. The Royal College of Physicians of London,

Edinburgh and Dublin, respectively give licenses to practice, *i. e.*, L. R. C. P. The College of Surgeons of London grant a membership which constitutes a surgeon, or M. R. C. S. The Dublin and Edinburgh colleges call their diploma a license, thus: L. R. C. S., Edinburgh or Dublin, and M. R. C. S., England. Then there is the time-honored Apothecaries' Company of London, which grants a license to practice as an apothecary; *i. e.*, L. S. A. (Licentiate Society of Apothecaries), or L. A. C. (Licentiate Apothecaries' Company). These corporations and companies require about four years' attendance at some recognized medical school, and certificates must be shown and registered prior to admission for examination. They recognize colonial medical colleges and schools; and American medical cousins can receive (if found fit on examination) the diplomas of the College of Physicians, Surgeons, or the useful license of the Apothecaries' Company. American and Continental doctors can practice in the United Kingdom by virtue of their foreign degrees; but they will not be legally recognized, and will be unable to give medical evidence in a court of law; or if they give evidence on a medical matter, they will not have a legal standing to recover their just fees for service rendered. It is as well, therefore, for any foreign doctor, coming to settle in England, that he should apply at once to the College of Surgeons, or the College of Physicians, of either London, Edinburgh or Dublin, for a license. If he can show, in addition to proofs of study and his diplomas, a proof of an apprenticeship, or of having served *according to the manner of an apprentice* for a term of five years, he will be eligible for admission to the examination for the apothecaries' license.

I need scarcely say that London has the greatest number of medical schools. Guy's (in the Borough), Bartholomew's (in Smithfield), the Middlesex (near Tottenham Court Road), have old endowments, and are very rich indeed. They have a halo around them from old times, and should be visited by all gentlemen from America who take an interest in medicine and surgery and the great names of the past. William Lawrence is still a link between the present and the past. This venerable gentleman is still on the consulting staff of Bartholomew's.

But we must not forget the newer Hospitals and Medical Schools of London in our reverence for old times and old scenes. We must not forget St. Mary's at Paddington, a splendid school and hospital, illumined by the brilliance of a Chambers. Then there is St.

Geerge's Hospital, at Hyde Park Corner, near the Duke of Wellington's mansion and Rothschild's stately house. It is said that the more aristocratic class of medical students affect St. George's Hospital School. We must not forget University College Hospital and School, in Gower Street. Henry Thompson is here and Erichsen. This is where "Ellis's Dissections," a world-known anatomical book, was made by the accomplished Demonstrator, Mr. Viner Ellis. This Hospital is graced by Quain and Sharpey. One of the Quains is a great physician, the other a celebrated Surgeon. Quain & Sharpey's Anatomical Plates are famous in the world of surgery. Before we leave Gower Street, we may mention that at Lewis's Library the Sydenham Society has its depot, and that the sixth *fasciculus* of skin diseases is nearly ready. This society is increasing steadily in usefulness and in subscribers. The translation of German, French and other continental works bearing on medical and surgical sciences is undertaken by this useful society, and for twenty-one shillings per year, each member receives all the plates and volumes published in the year by the society. The busy general practitioners in the country districts have no time to read the newest German and French works, but when these are translated and epitomized for them, they need not be afraid of lagging behind in the race of medical progress.

In an old country like this, the exigencies of life are such that the ordinary workers in medicine and surgery have to "rise early and go to bed late," to keep the wolf from the door. They have not time for learned disquisitions or for new theories and practices. Thus many go on in a jogtrot, routine fashion. There are, however, many exceptions to this, and we can number some of our best and foremost men, who have, by sheer talent, raised themselves from the ranks of the profession to the pinnacle of the same. Baker Brown is an illustrious example of intellect, energy and perseveranee. Formerly a "general practitioner," he has become one of the foremost surgeons of the day. No American physician should leave London without paying a visit to Mr. Baker Brown's Special Hospital for Diseases of Women. He is as great in operations for Ovariotomy as Mr. Spencer Wells, (Surgeon to the Queen's Household) of the Samaritan Hospital for women, and this is no faint praise. Mr. Baker Brown is also famous for the great dexterity with which he repairs by surgical interference those injuries incidental to childbearing, which render so many poor women miserable for life, unless they are lucky enough to meet with a doctor clever enough to per-

form the necessary operation. Vesico-vaginal fistula ; recto-vaginal fistula ; recto-vaginal vesical lesions ; ruptures of the perineum, either from causes beyond the control of the accoucheur or from meddling instrumental interference—all these surgical cases meet with a practised and skillful master of the surgical art, when placed under the care of Baker Brown, F. R. C. S., Eng. He is a Fellow of the Royal College of Surgeons of England, a time-honored institution, with a world-wide reputation for its Hunterian Museum and its library The great Hunter's anatomical preparations are to be seen at the College in Lincoln's Inn Fields.

The Colleges of Physicians and Surgeons have different grades. Distinguished men receive the title of "Fellow," and have certain privileges accorded them in the Government of the Corporations. Before returning to a cursory description of the remaining London Medical Schools, I may incidentally mention that Baker Brown's Second Edition of his "Surgical Diseases of Women" has just been issued. The cost is fifteen shillings. It has many handsome plates, and it gives most lucid and straightforward directions for both operative interference and subsequent treatment. In his operations for Ovariotomy, he has found that the actual cautery is the neatest and best mode of controlling hæmmorrhage. Dr. Routh, of Montague Square, a celebrated London specialist for diseases of women and children, attached to the Samaritan Hospital for Women, is also warm in his advocacy of the actual cautery, in lieu of the ligature or a clamp. The use of "actual cautery" was well known to our forefathers in the profession, but it went out of fashion. With revolving years old modes of practice are brought forth as new, and create a little temporary sensation. They then die out, and other things and modes take their place. Soloman's remark, that "there's nothing new under the sun," holds good nowhere better than in the medical world. The clamp now used by surgeons to compress the growths in the rectum (internal piles or vascular tumors) prior to their excision and burning, either by nitric acid, tincture of iron, or by means of the actual cautery, offers very little difference to the instrument used by farmers in the castration of pigs. On my summer ramble this year, I was assisting a surgeon in the country with an operation, and prior to the same we explained to the country farmer the improved clamp of Henry Smith. "Why," said he, "that's just like the thing I castrate my pigs with." We gave this man chloroform, after he had protruded the vascular growth by the action of the

muscles of defæcation ; then the growths were cut off, and the actual cautery applied. It was quite successful. Mr. Henry Smith's improved clamp has a screw, which regulates the pressure exerted on the diseased mass. Mr. Henry Lee's clamp is the foundation for Mr. Smith's. The instrument is just like a pair of scissors with blunt edges instead of cutting ones. Without the little screw near the hinge, the cut end of the structure, after the operation has been performed, will suddenly recede, and it will be difficult to recover it, with a view of perfecting the hæmostatic process. This little danger or difficulty is perfectly obviated by the screw. On the growth being cut off, the screw is a little relaxed, in order to observe from what point the blood arises, then the actual cautery is used, and the screw is still further relaxed, and so on. When it is obvious that no more bleeding (of a dangerous character) is to be expected, the clamp is taken off, the parts are gently replaced within the rectum, a little oiled lint is passed up with the finger, and the whole business is done. I think it expedient to order a gentle dose of castor oil prior to the operation, in order that the bowels may be well cleaned out, and that the natural sluggishness after an aperient may be made use of as a curative process after the operation. It is, in my opinion, just as well that, after the operation is completed, the patient should lie on a sofa, and not have any passage for about 24 hours. In the actual cautery one gets a smell of burning animal matter, and to the uninitiated public such an odor may give the idea of a kind of barbarism in treatment. This is, however, more an idea than a reality. The pressure of the clamp is much more painful than the application of the iron at white heat. Corrigan's iron is a very neat instrument for using after the excision of piles.

Mr. Henry Smith warns surgeons against cutting away any skin, etc., about the rectum. He has seen a case in which some operator, more bold than wise, cut off so freely of the integuments around the *anus*, that a condition very like stricture resulted. The vascular excrescence, therefore, is the only part against which the surgeon should wage war.

I cannot leave these points in minor operative surgery without mentioning a subject that is causing a good deal of talk among doctors, both at the learned societies in those little talks before the great and ponderous essay of the evening commences, and while the learned are sipping their coffee afterwards. The point is this : It has been discovered by Mr. Baker Brown—and many doctors who

make female diseases their speciality, are of the same opinion—that many of the diseases of women, usually called hysteria, and sometimes even epilepsy and such like, are all caused by one and the same thing, *i. e.*, "peripheral irritation of the pudic nerve." This is a neat scientific way of putting it ; but to call a spade a spade, we will divest it of its scientific cover, and simply state that females are considered to be deeply wedded to the practice of masturbation. Mr. Baker Brown has written a book on the subject of epilepsy and nervous disorders, and this point is the refrain of his song, if we may use a poetic license and call his essay by such a name. If masturbation causes such disorders, Mr. Baker Brown considers that he is justified in finding a radical cure. This cure he says he effects by simply *excising the clitoris.* Now, Mr. Baker Brown has a great reputation, and many people follow in his wake and perform "clitoridectomy," as it is called. Others again impute to clitoridectomy many of the complaints which it is said to remove. It remains, therefore, a vexed question, although it is a hard practical fact, that Mr. Baker Brown performs the operation frequently. One fundamental point about the matter is this—at any rate it ought to be if it is not—the consent of the female and her friends ought to be taken before the clitoris is excised ; for once excised, it cannot be replaced. It has been hinted that these little operations are often done as adjuncts to others, without due notice and warning of their nature having been given to the patient. Any surgeon who performs such an operation ought to be careful, first that it offers the only chance, and secondly that he has the full permission of the woman and her husband, or more intimate protectors in case she happens to be a single woman. An action at law would lie in these cases, if performed without due consent.

We will now proceed to notice King's College Medical School and Hospital. The college is in the Strand, and forms a portion of Somerset House. The Hospital is at the back of the Royal College of Surgeons, near Clare Market, a place more remarkable for its usefulness than its beauty. There is no doubt that the densely populated district around King's College Hospital is a capital feeding ground for it. A goodly array of students muster at this school. Sir William Fergusson is a tower of strength. His weekly operations draw great crowds, not only of King's College students, but of busy practitioners, and students from other hospitals. He has a marvellous facility with the knife. which cannot be described, but which

must be seen to be appreciated. He is wonderful in lithotomy. The calculus is in his fingers for the inspection of the class, but a minute or two after the patient has been tied up for operation. Those among us who remember the scenes in an operating theatre before the introduction of chloroform, will remember the howls of the tortured victims, whose legs and thighs were being amputated.

Chloroform is indeed an inestimable blessing to both patient and surgeon. Yet this wonderful and splendid discovery has only brought to Simpson, of Edinburgh, who discovered it, his title within the last twelvemonths; while Dr. Richardson's plan of local anæsthesia has been lauded to the skies, and is bringing him solid fruit in the shape of a testimonial.

It is rumored, also, that Dr. Richardson is to be the editor of the British Association Journal. Although the emoluments from this office are not worth speaking of (£200 a year), yet the position and the influence that such a position will give him are in themselves a sort of remuneration, nearly three thousand copies of the journal being sold weekly. It is the organ of the British Medical Association, the members of which meet at certain intervals to read papers and deliver speeches, and try to promote the honor and welfare of the profession. Dr. Markham, of St. Mary's Hospital, has been the editor for some years; but Government have recently given him a Poor Law Inspectorship, at £1500 a year, which is better worth acceptance than an editorship at the unremunerative figure of £200 a year. Dr. Markham is a man of means, but Goverment office is pleasant to all. A good Government appointment means good social position; and good social position is the great aim and end of all human beings' struggles in the old country, whatever it may be in America, where I suppose every man is as good as his neighbor—and a great deal better, as the Irishman said.

Sir William Fergusson is most lucidly simple in his surgical lectures. His common sense remarks after an operation are worth many pages of ordinary works. The pupils have seen the case and the operation, and they are told what the issue is likely to be. The whole thing is impressed forcibly on the mind, and a few observations on the treatment of cases in general of a like nature are listened to with interest. About a week ago I saw him operate for necrosis of the tibiæ in two lads, and for necrosis of the femur in a young man. Where practicable, diseased bone must be taken out, and where so much new bone has been deposited as to render this

impossible, all burrowing sinuses must be cut into, and an incision down to the diseased bone must be made. Lint can be pressed into the gaping wounds, and free exit must be established. Such was the gist of his clinical lecture.

Mr. Henry Smith, who is well known as an author on diseases of the rectum, is a general surgeon, second only to his great colleague, Sir William Fergusson. He is an able operator, and has earned a very sound reputation for his skillful excisions of joints. I saw him on the same Saturday perform a neat little operation — a secondary amputation, if it may be called so. A patient had been admitted into his hospital with a bad stump in the middle third of the leg. The bone seemed inclined to protrude through the skin: it was too long, and the flaps had been too short. During the process of healing the flaps had contracted. Mr. Smith, after cutting right across the front of the cicatrix, dissected back the flaps and cut off about an inch of bone. A very neat and useful stump will be the result. This case ought to act as warning to young surgeons, not to attempt to make flaps look too "ship-shape" all at once. A stump that looks beautifully elegant immediately after an operation, will probably look very curious, and somewhat of the mop-handle description, after a few months. Plenty of the soft parts must be left, and the ordinary and inevitable healing and contracting processes will make an apparently clumsily flapped stump into a nice cushiony pillow for adapting all artificial limbs. Surgeons should not despise the arts of the mechanical appliance maker, but should work in concert, and not in antagonism to him.

Sir Thomas Watson, the author of those splendid lectures on the Principles and Practice of Physic, is consulting physician to King's College Hospital. His mantle has fallen on George Johnson, M. D., famous for his researches into kidney diseases, and who lives in Savile Row, in the same house where the great "Bright's-disease" Bright lived. Dr. George Johnson has pushed his "eliminative" treatment of cholera into notoriety in London; and he has some warm supporters — among others the "*Times*" and the "*Saturday Review*," besides the medical weekly paper, the "*British Association Journal*."

From Indian experience, I am inclined to consider cholera as a kind of malarious fever. In this matter I am a follower of Archibald Billing, M. D., Oxon., an Examiner of Medicine at the University of London (for the M. D. degree). He is a veteran physician,

and once the Professor of Medicine at the London Hospital — one of our most famous hospitals and schools of medicine. Your Dr. Warren Stone and our Dr. Billing are almost identical in their views, and both advocate a similar treatment. Quinine is used by both. Steifensand, the German observer of Crefeld, held similar views and published them in 1848. Dr. George Johnson's eliminative, or castor-oil treatment of cholera, has been called a cast-off garment of the Indian observers.

Perhaps the best and most original, and the most interesting book of the season on cholera, is the very able book of Dr. Chapman, (Trübner & Co., 2d edition) entitled "Diarrhœa and Cholera: their nature, origin and treatment through the agency of the nervous system." Dr. Chapman dedicated his work to Claude Bernard, Professor of Medicine at the College of France, whose discoveries of the exact nature of the influences excited by the nervous over the glandular and arterial systems are so well known. Most ingenious articles have been manufactured by the chemists for applying Dr. Chapman's theories to practical use, and the well-known *spine bags* are the result. Dr. Chapman believes in hyperæmia of the spinal cord in cholera, and applies the bags filled with ice. He is just publishing a book on the functional diseases of women, and his work on sea-sickness is well known. The application of spine bags filled with ice for sea-sickness prevents the dreadful nausea and discomfort that hinder so many from undertaking sea voyages. They can be used on delicate women equally well with strong men, and they offer a complete immunity from a disagreeable sensation. By alternate application of hot and cold bags to the spine, the function of menstruation can be alternately checked and increased, and altogether the discovery is one of such importance, as being the embodiment of the latest scientific physiological research, that I must commend his views to your highest consideration. You are far removed from the petty dissentions and little jealousies of the profession in an old and over-crowded town, where men are apt to be jealous of their neighbors' reputation, for fear of such reputation carrying off the solid tribute, in the shape of guineas, from a public that can get so much in the way of medical and surgical advice for nothing, that it grudges the legitimate fees of a pains-taking and worthy class of the community.

Mr. Churchill's red-letter list contains but little of interest, if I except a very careful work on apoplexy by Dr. Mushet, of the North

London Consumption Hospital. This gentleman appears to me to hold some views on apoplexy that are perhaps new to some in the profession. He seems to consider that apoplexy is more a disease of the circulation than of the nervous system, and that many of the serous effusions, etc., on the brain, are more a consequence than a cause of disease. I must refer you to his work for his arguments, but cannot agree with him entirely. A congestion of the brain and effusion may certainly take place in consequence of a congestion of the lungs, but I cannot consider that a congestion of the lungs would, without serious consequences to the brain, cause death. Therefore I am inclined to think that effusions on the brain must always rank high among the causes of death, whether they may be the sole cause or not.

King's College Hospital does not yet publish any yearly volume of transactions, but I hope it will imitate the other large hospitals which do. Guy's, Bartholomew's, St. George's, and the London hospitals, all publish valuable yearly reports of the picked medical and surgical cases that have occurred during the year. The yearly volume of the London Hospital is before me. It is perhaps one of the most important medical schools and hospitals in the metropolis. It is near the Docks and in the East of London, and has had to make huge exertions lately during the cholera epidemic. An account of the saline injections into the veins of cholera (in 1848–49) is given in the Report. They seem to have failed.

Dr. Letheby gives an exhaustive report on all that is known about the spectrum analysis. Light splits up, when a ray is sent through a prism, into seven colors. Flames in which different metals are burnt, give colors varying with the metals burnt. When it is said the $\frac{1}{2,500,000}$th of a grain of sodium can be discovered by its peculiar yellow tinted line, it is evident that a very powerful agent for the detection of poisons, etc., is opened up to us. If the line of color is too faint for the naked eye to appreciate, it can be brought by a little arrangement across the field of the microscope, and can then be easily seen. Although all this is very ingenious, it is evident that a good deal of research is still required, before it can be considered a science exact enough upon which to base any definite conclusions for judicial proceedings.

With the London Hospital I here finish the enumeration of the medical schools of London. The University of London, *i. e.* the degree-giving body (M. A,, M. D., etc., etc.), has as yet no large build-

ing. Government is going to build one for it on the site now occupied by Burlington House. The Senate has hitherto been accommodated in Government lodgings, but in spite of its want of a building, the members of the Senate have been respected, not only for their learning, but for the most excessive strictness of their rules and regulations and the very protracted course of study required. Thus seven-eighths of the students of the London schools look elsewhere for the degree of M. D., and they find it hard that residence is compulsory at out-of-the-way University towns, when they have studied their profession in the best Medical Schools in the Kingdom. The generality of students are contented with the diplomas of the Medical Corporations of London, viz., the Colleges of Physicians, Surgeons and the Apothecaries' Company; and if, when advanced in practice, they are anxious to add, for the sake of the sound, the M. D., they have to go abroad to get it.

Ed. "Medical Mirror."

Necrological.

DR. JOHN C. P. WEDERSTRANDT.—Among the men of eminent talent and worth, who have adorned the profession of medicine in New Orleans, Dr. Wederstrandt requires more than a mere passing notice at our hands. To say nothing of the great influence he unconsciously exercised in the forming of medical opinion in his day, and the large share of public attention his abilities attracted, there was, taking his character as a whole, something extremely unique and strange, at the same time something interesting and touching, in the recollections associated with it. It is very difficult to portray such a character and do it justice, for his was one very lovely to contemplate by those who knew him well, but often misunderstood by strangers. Full of seeming contradictions, nevertheless it was consistent and harmonious throughout.

Dr. Wederstrandt was born in Baltimore, in the year 1812, during the very time the city was being bombarded by the British forces. His father served in the infant navy of the United States, being among the first appointed midshipmen in that service. Receiving his warrant in the spring of 1797, and serving with distinction, he

had the rank of Master Commandant when he resigned, in 1810. Dr. W.'s mother was Miss Helen Smith, daughter of Judge Smith, of Baltimore. In the spring of 1818, Captain Wederstrandt removed his family from the vicinity of Baltimore to Louisiana, and established himself on a sugar plantation in the parish of St. Bernard. Mrs. Wederstrandt died first, in September 1829. The Captain died in 1854, after just completing his 78th year. They had six children, of whom Dr. John Charles Perry Wederstrandt was the only son, As such he was regarded as the pride and hope of the family, and every pains of the fond parents was taken to secure him the best education money could procure ; and every means used to train his intellect, improve his morals, and give him those accomplishments which attracted towards him the admiration of every one whose good fortune it was to know him. In early boyhood he was placed at Mount St. Mary's College, Emmettsburg, where he remained nine years. At College he was remarkable for his fondness of study, his close and untiring application to it ; together with a habit of retiracy and avoidance of a crowd, and the love of communion with his own thoughts, which remained a characteristic of him during his whole subsequent life.

On leaving College, he commenced the study of medicine in the office of Dr. Baker, a prominent physician of Baltimore. He spent two years under this gentleman's tuition, during which he also practiced in the City Infirmary. In order that he might still further perfect himself in the profession he had chosen, he went to Europe and remained three years, which were spent principally in the hospitals of Paris, and in the lecture rooms of the most celebrated masters of medicine in that renowned capital.

After—I will not say completing his studies, for that he never did, being a student almost to the day of his death—but after the term of study he had allowed himself in Europe had terminated, he came to New Orleans to assume a grave responsibility, but at the same time a means of improvement which he considered far superior to any he had previously enjoyed. He was appointed by Governor Roman, Resident Physician and Director of the celebrated Charity Hospital. This position he held for thirteen years, and it was during this time that the writer of this feeble sketch became acquainted with him, and enjoyed an intimacy of communion with his mind, the recollection of which has always been a source of pleasure to recall. A certain number of students resided in the building, and were

brought daily into intercourse with the House Surgeon, as we called him ; and between them and him an endearing affection would soon spring up, and an attachment be formed which would last for life. The whole treasures of his intellect, which he had with such pains amassed, were poured out for their benefit ; and the steps he had mounted in the temple of science were again and again traversed in their company, while he never wearied, and was always kind and gentle.

A strong and beautiful trait in his mind was his remarkable love for truth. Like all who have sought for this priceless jewel and have been often disappointed and deceived, he became skeptical in regard to theories and hypotheses, and only after rigid examination would accept as facts those that could be mathematically demonstrated, or evidenced by the senses.

He was a fine surgeon, and could operate as well as any one when circumstances impelled him ; but his physical temperament made him reluctant to do the butcher's work of his profession. Consequently it is easily understood why he took such interest in diseases of the chest, to which, in the latter part of his life, he almost exclusively devoted himself, and as an auscultator had no equal. His advice and assistance were sought by all his medical brethren, in cases of the kind.

Dr. Wederstrandt's long administration of the Charity Hospital was a very able one. The duties of his office required a varied and large amount of talent, and they were discharged in a manner that proved him always equal to the occasion. His influence in forming correct medical opinions by what he exerted, unknown almost to the world, upon the minds of the young men who passed through the Hospital, cannot be estimated by their number merely, for it was transmitted through them into all the States of the South, and even Mexico, where these gentlemen, as practitioners, eventually settled. His attachments for his students were very strong. When the time came round for them to graduate and leave, he would mourn over their loss for about two weeks, during which time he would take his meals out of the Hospital, and have nothing to say to the new set. After this he would get gradually acquainted with them, and when their turn came for departure, would grieve for those as he had for the others.

In the Charity, representatives of nearly all the nationalities and tribes of man have at one time or another been seen, suffering with

diseases as various. In the study and treatment of these, in the converse of men of his own profession, or his students, in the company of his loved books, and in dissections, thirteen years of his life passed very happily away. His undivided attention was given to the duties of his station, and so great was the confidence reposed in his judgment and discreet zeal, that no recommendation of his was ever gainsayed by the governing board. It is to him that that institution has been indebted for its complete equipment and adaptation to the wants it so eminently claims to supply, and no prouder monument could be desired by the physician than his work there.

He left the hospital with his health impaired, and having a large inheritance with which to support himself, desired to retire from the active exercise of his profession ; but the fame he had not sought forced him from his retirement. Without a sign at his residence, the afflicted fonnd him out, and a large and lucrative practice was thrust upon him.

He accepted the Professorship of Anatomy and Physiology in the University of Louisiana, and in the professor's chair he gave eminent satisfaction to his class. But to himself it was a task which his nervous susceptibility always made extremely irksome, to face a large congregation of persons ; and this peculiarity in his organization and his declining health caused him to withdraw from his professorship after one course of lectures. When the next session arrived, however, he was unanimously elected to deliver a special course of lectures on the diseases of the throat and lungs in that institution. And he delivered one very comprehensive and valuable course on these subjects, after which he retired forever from the career of a public teacher.

The last ten years of his life were spent in the private practice of his profession, during which he gradually curtailed his *clientele*, confining himself almost exclusively to his speciality, "diseases of the chest," and towards the last restricting himself to office practice.

The last interview we had with him was in April, 1861, and we spent nearly the entire day in conversation with him. The country was then in the commencement of the fearful and fatricidal war of which we have—but he has not—lived to see the close, and which we fervently pray will never again recur. Had the counsels of such good and wise men as he been heeded, it never would have begun. Dr. W. had, among his other studies, given a great deal of attention to the scientific principles of the art of war. Especially had he studied the campaigns of the greater Napoleon, and he had his

maxims by heart. He saw, as clearly as in a mirror held to a landscape, the future fate of this country, and his predictions, made during the intercourse we speak of, were justified to the letter by the event.

Early in the year 1863 he felt a hand laid gently upon him, and a voice whisper to him, *be ready and come*. They were those of the Angel of Death, that came to him, not as an enemy, but a friend who, dealing kindly with him, conducted his steps slowly and quietly to the tomb, with scarcely any pain or suffering. He obeyed the call, and sadly retired from the discharge of duties he had sacredly performed for thirty years, to seek such benefits as northern travel or the advice of eminent physicians could bestow upon his shattered frame. At the same time the sacraments of the church of his childhood and the offices of her ghostly confessors were applied to a soul hungering and thirsting for righteousness. He sought the death of the righteous, and his end was like unto his. On the 9th of February, 1864, a pure spirit winged its way among the blest, from a world in which it had ever been a stranger; and men knew that unawares they had talked with an angel. Dr. Wederstrandt died on this day in New York, at the residence of his sister, Mrs. J. D. Johnson. His disease was phthisis pulmonalis.

His remains were removed to Baltimore for interment, accompanied by the attending clergyman and by two loving sisters. An imposing funeral ceremony in the beautiful Cathedral of that city, the pall-bearers being the most eminent of the medical faculty; a large concourse of citizens; a touching and appropriate address by the Rev. Andrew McClosky, were the honors paid by that city to his memory on the occasion of his burial.

In New Orleans a meeting of the medical faculty of which Dr. Warren Stone was chairman, and Dr. B. H. Moss, secretary, was held on the 23d of February, 1864, at which a report and appropriate resolutions were adopted, paying the last and only sad tribute in their power to their departed friend and *confrère*, from which we extract the following: "Placed by fortune above the ordinary incentives to labor, enjoying the emoluments of a lucrative patronage, he devoted little to the accommodation of his own modest wants; was of all men the most indulgent to the many who required his professional aid, and the most self-sacrificing to those who had claims on his generosity. Of a sensitiveness that contrasted strangely with his

admitted ability and accomplishments, he had a soul of truth; and beneath a gentle, if not timid demeanor, breathed a spirit of independence that scorned all devices for patronage or the slightest interference with the rights of others, and made him recoil on the least dissatisfaction with his treatment. With the nicest appreciation of his own obligations to others, he was the least exacting and most liberal with those of others to himself. Of a gentleness and unobtrusiveness that shrunk from controversy and publicity, he inspired an involuntary sympathy that heightened the appreciation of his real merit. Rich in stores of varied knowledge, accurate in all he professed, engaging and fluent and instructive in conversation, the students of the Hospital, many of them now distinguished in the profession, have borne ample evidence of his ability as a successful private teacher."

Pure in heart, all his pleasures were those of the intellect, and sought exclusively in its enjoyment, or the luxurious feeling which the exercise of benevolence yields to its votaries. The pursuits of science; the intimacy of intercourse he sought with suffering humanity, in order to relieve it; the society of learned and intelligent men of his profession; the instruction of his students — these, and these alone, were sufficient to fill to overflowing the cup of what was to him a most innocent and happy existence. He seemed incapable of malevolence or hatred. There were those he disliked, doubtless; but these he avoided, only because repugnant to his highly cultivated taste. He shrank from the herd of men, avoided crowds, and selected his associates from those who appeared congenial, and only after long probation.

A word more and we must take leave of this sorrowful task. It has often been remarked with surprise and regret by his friends, that one so remarkably laborious should have bequeathed from his pen none of the fruits of his industry. We believe that this occurred not from indolence, but distrust. He, like Newton, had spent his life picking up pebbles from the shore of the great sea which hides the secrets of nature. He had observed that the imprint which one wave maks in the sands are obliterated by the next, and he thought, how vain for him to write upon them characters which might so soon be effaced. He had learned so much that he distrusted all human knowledge, and truth he loved too well to risk misleading his fellows.

Vale. B.

To Subscribers.

THE present number of the Journal represents the fourth issue of this old periodical since its resumption in July last. Beginning without subscribers, and with a large amount due the proprietors prior to its suspension during the late war, the Journal has nevertheless appeared in proper succession. Although encouraged in some particulars, the proprietors are disappointed in securing the large number of subscribers that formerly gave their friendly support. This failure is, in part, readily explained, because of the deficiencies attendant upon the insignificant postal arrangements accorded by the government to the South-western States. In order to secure the more speedy delivery of the Journal, as well as to diminish postal expense, the proprietors have changed the appearance of the Journal, feeling assured that they will thereby more surely satisfy the wishes of subscribers.

List of Journals Received.

Dublin Medical Press and Circular—October 10, 17.
Medical Times and Gazette (London)—Oct. 6, 13, 20, Nov. 17; Dec. 8.
British Medical Journal (London)—Oct. 27; Nov. 3, 10, 17, 24; Dec. 3.
Gazette Médicale (Paris)—Sept. 29; Oct. 6, 20, 27; Nov. 3, 17, 24; Dec. 1.
Chemist and Druggist (London)—November.
Druggists' Circular (New York)—November and December.
Atlanta Medical and Surgical Journal—November and December.
The Cincinnati Journal of Medicine—November.
The Cincinnati Lancet and Observer—November and December.
Medical and Surgical Reporter (Phila.)—Oct. 20, 27; Nov. 3, 7, 10, 24; Dec. 1, 8, 15.
The Medical Reporter (St. Louis)—Nov. 1, 15; Dec. 1, 15.
The New York Medical Journal—November and December.
The Medical News and Library—November and December.
The Richmond Medical Journal—November and December.
The Boston Medical and Surgical Journal—Oct. 18; Nov. 22, 29; Dec. 6, 13, 20.
Buffalo Medical and Surgical Journal—October and November.
The Chicago Medical Examiner—November.
The Pacific Medical and Surgical Journal and Press—October.
The London Lancet (reprint)—December.
University Journal of Medicine and Surgery (Philadelphia)—Dec. 15.
The Medical and Surgical Monthly (Memphis)—August.
American Journal of Science and Art (Silliman's)—November.
De Bow's Review—November.
The St. Louis Medical and Surgical Journal—August and October.
The Chicago Medical Journal—November.
The Crescent Monthly—November.
Monthly Investigator (a monthly Journal of Homœopathic Medicine)—Nov. & Dec.
Nashville Journal of Medicine and Surgery—December.

Books and Pamphlets Received.

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ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

Art. I.—INAUGURAL LECTURE:

Addressed to the Medical Class at the opening of the Course, November 12, 1866: By S. M. Bemiss, M. D., Professor of Theory and Practice.

GENTLEMEN: The Medical Faculty of the University of Louisiana have devolved upon me the duty of pronouncing their customary introductory to the opening session. I should not feel so diffident of my ability to discharge this duty gracefully and appropriately, but for the fact that, like most of yourselves, I am but newly arrived in this great metropolis, and socially am as much a stranger here as many of you. I am, however, not a stranger to the reputation of the institution within whose walls I now address you; nor am I a stranger to the almost unequalled advantages for the study of disease in the noble hospital connected with this school; still less am I a stranger to the professional reputation and merits of those gentlemen who have paid me the compliment to suppose me worthy to become their associate. Science stipulates that, in every region to which her cultivation extends, those who pursue her paths industriously and patiently shall have due honors paid them, and it is a stipulation which in medicine is most jealously observed.

Therefore it is that I am no stranger to the reputation of my colleagues. Therefore also it is you can assure yourselves that those among you who labor with zeal and patience equal to theirs, will some day reap the reward of equal honor and distinction.

I suppose, gentlemen, that an introductory to a course of medical lectures is so much the offspring of the indispensable "prologues" of former times, that it is expected that the plans of the course of instruction should be sufficiently developed therein to enable you to determine what will be required of you as students, and what on the other hand is due you from your teachers; for we acknowledge the implied contract, to which Trousseau has so gracefully alluded in the first pages of his *Clinical Medicine*, as subsisting between teacher and pupil. And while we hope to meet with faithful application to studies on your part, and patient attention to our instructions, we propose, on the other hand, to execute our responsible duties towards you to the strict letter of the law.

But, before entering upon any exposition of points of duty, either separate or mutual, let us inquire if there be a clear apprehension, on your part, of the purposes which have occasioned your assemblage here. I see on the benches before me many earnest looking young men, who have left their homes and the offices of their preceptors, many of them far distant, and are now gathered together in this hall. What has occasioned this temporary disruption of social ties, this outlay of time and money, and this assemblage within the walls of this university? For what purpose have you come? We have only to look upon the lines of thoughtful determination traced upon your countenances, to conclude without hesitation, that no frivolous purposes brought you here. Indeed, gentlemen, such have been the sad lessons the last few years of history have inflicted upon all this Southern land, that even the young in years, by their untimely induction into the cold realities of its life, have already extracted precocious wisdom from its bitter teachings. I repeat, then, that in view of the sombre experiences through which we have all passed—and are yet passing—there can no accusation sustain itself against any of you, of having repaired to this institution with other than a serious purpose. For what then have you come? To learn medicine, you reply. But have you thought of the definition of that term, in its broadest import? Have you considered the range of study and sacrifice it involves? In its most comprehensive sense medicine takes cognizance of many branches

of human knowledge and human art. It is itself susceptible of division into Medicine as a Science and Medicine as an Art. You have assembled here to acquaint yourselves with its doctrines and relations both as a science and as an art. Now, instead of attempting to define in pedantic form, what Medicine is as a science and what as an art, it will confuse your understanding less to say, that it is that study which teaches you to distinguish, to cure, to alleviate, or to prevent "diseases." The term disease is also used here in its most extended sense, and must be defined negatively, and be understood to mean any form or degree of departure from health, from simple *dis*harmony of function to structural lesion. This comprises, then, in sum, the duty of each party to the implied contract: We, your teachers, undertake to instruct you, so nearly as we can, in what consists the essence of all deviations from healthy states of the human system; how to recognize these various departures from health; how to cure them; or, failing in that, how to palliate; and last, not least, how to prevent them. For, in this latter respect, we, as physicians, must in the discharge of our duties ever avoid the spirit of the prophet of old, who, when the destroying hand was averted from a great and populous city, was displeased, perhaps because his prophecy remained unfulfilled, and his reputation as a seer might in consequence suffer. We must eschew the selfishness of this prophet and place ourselves in the front of all epidemics; and, no matter how devastating, how fatal or awe-inspiring they may be, must retain our position and bring all the learning of our profession into exercise, to stay the progress of the wasting pestilence. "The good physician's life is filled with epic and sublime passages." Forever, on whichever side we turn, during our earthly pilgrimage, in physical or in moral nature, we find a constant warring between evil and good. This tendency on the part of some destructive agent or principle, to disintegrate and overthrow all that which God created and pronounced good, may well be represented in disease, which directs its assaults principally upon the latest and most exalted of created beings. Man himself, though moulded in the likeness of his Creator, does not find in that fact any escape from the all-pervading law of disease and decay. It is emphatically true of him, that he "begins to die from his hour of birth." The physician's life is spent in warring against this principle of disintegration and destruction of the human organism; and, while thus engaged, he should find an elevation of thought and character reaching the

sublime by reflecting that, in every act of relief to the encroachments or pain of disease, he approaches the beneficence of the Deity. But still farther: just in measure as he approaches perfection in the knowledge of medicine, in all its highest aims, just in precisely that same measure will he lessen the distance, however incalculable that may be, which separates him from the wisdom and perfection of Omniscience itself. What greater incentive could be offered, to stimulate you to climb the highest attainable point of knowledge in the profession of your choice, than thoughts like these? Your Faculty have undertaken the responsible task of showing you the pathway to a knowledge of medicine, by instructing you in the various branches of learning necessary to its attainment. They propose to impart this instruction to you by lectures and by practical illustrations, each in his own department.

Now suffer me, gentlemen, to occupy a portion of this hour in explaining how your time should be employed, so as to derive the greatest possible advantage from your studies during the opening session. In the first place, whatever may be your expectations as practitioners, do not set out with any purpose of making a special study of any particular branch or department, to the exclusion or neglect of other branches. It may, under proper circumstances, be well enough, after you shall have become established as practitioners, to take up some specialty, if you find yourselves to possess a particular aptitude or fondness for it. But mark the prediction: Unless you shall have first obtained a knowledge of the great underlying principles of medicine, in its widest acceptation, you will not be qualified to enter conscientiously into the practice of any exclusive branch, and will fail if you attempt it. The causes which engender disease rarely limit their action to one organ solely. Many of these causes are all-pervading, so far as the system is concerned, and are wafted with every pulsation of the heart through all the channels permeated by the blood. Others again are local in their earliest manifestations, but so closely knit together are all parts of the human organism into one indivisible unit, that, either little by little, or, as in some instances, by sudden *coup*, they encroach so far as to bring the whole system more or less deeply under their domination. No portion of the human frame seems designed to live for and by itself; but all portions live through and for each other. You will find, too, that the woof which weaves them so inextricably together, affords a facile bridge of transit for the greater number of diseases.

The two or three remarks that I now make about specialists, you will understand to apply to that class of persons whose information and practice are limited to some particular ailment or organ. I make this distinction, lest you might understand me to include those physicians who, having mastered general medicine, turn to the cultivation of some exclusive branch, and bringing all their learning and energy to bear upon it, arrive at such degrees of skill as to command our highest respect.

As a class, strict specialists have done very little to advance the profession of medicine, either by enriching it with valuable literary contributions, or by enlarging the field of discovery, even in the particular direction of their own investigations. I might yet go farther, and say that, in so far as they teach the public to believe that particular affections require special modes of study and treatment, they are enemies to the advancement of the great ends of medicine, and impair its beneficence and usefulness to mankind. Yet, notwithstanding this patent fact, specialism meets with more forbearance now than at any previous time since the establishment of modern didactic schools of medicine. The ironical ridicule with which Goldsmith so quaintly delivers himself on this subject, will show you the light estimate placed on specialism in his days: "In other countries," he says, "the physician pretends to cure diseases in the lump. The same doctor who combats the gout in the toe shall pretend to prescribe for a pain in the head; and he who at one time cures a consumption, shall at another give drugs for a dropsy. How absurd and ridiculous! This is being a mere Jack of all trades. Is the animal machine less complicated than a brass pin? Not less than ten different hands are required to make a brass pin; and shall the body be set right by one operator? The English are sensible of this force of reasoning. They have one doctor for the eyes; another for the toes; they have their sciatic doctors and inoculating doctors; they have one doctor who is modestly content with securing them from bug-bites, and five hundred who prescribe for the bite of mad dogs."

In practice you will find diseased conditions so commingled, that they cannot be isolated; and the strict specialist errs, because he fails to recognize this all important truth. To illustrate this point, Ophthalmology is a beautiful and fashionable speciality. But suppose the oculist who has studied nothing but the eye, is called to prescribe for a disease of the eye having its origin in some general

eachexy of the system ; suppose for instanee, it be the injected eonjunetiva of intermittent hemicrania, and he attempts its relief by leeehes and loeal astringents, without recognizing or combatting the malarial element in the disease. Do you not pereeive at once how worse than futile his treatment would be ?

Those who arrive at the greatest preferment in surgery, will inform you that mere manual expertness, or anatomical knowledge of the parts to be ineised, however aeeurate, does not constitute the foundation of their fame. On the contrary, they ground their reputation upon their knowledge of medieine in its broadest, purest sense. This knowledge teaehes them when to withhold the knife, and when to apply it; when to address their remedies to the point loeally affeeted, and when to remove first the general pathologieal state of whieh the loeal disease is a mere expression. Therefore, in your studies this winter, neglect no branch included in the scholastie plan of the Institution. Regard all of them equally important: Anatomy, Chemistry, Physiology and Pathology, Surgery, Obstetrics, Materia Mediea and General Medieine. These all form important stones in the professional edifiee each of you must eonstruet for himself, and your structure will be ineomplete, if either stone be left out or be even imperfeetly inserted. The course adopted by your Faculty in lengthening the term of study, while the daily number of leetures is redueed, will greatly faeilitate eomplianee with this adviee. You have now time to think over and digest the various leetures you have heard; to fix the preeepts and doctrines you have elicited therefrom more firmly in your minds by reference to correlative literature, or by diseussion among yourselves of the subjects leetured upon. I can unhesitatingly assure you that, in the main, you will find but little diffieulty in following and eomprehending the leetures you will hear. The ehairs are held by ineumbents eminently praetical in their modes of thought and their manner of teaehing. They will proeeed in the most straightforward manner possible to the eore of their subjeets, and having long experienee in teaehing they know how to adapt their ideas to the minds of the uninitiated.

Of course, gentlemen, I do not inelude the ehair of Theory and Praetice in this eonneetion; nevertheless, its ineumbent is impressed most deeply with a sense of the responsibilities he has assumed, and will spare no efforts to diseharge his duties in sueh a manner that his doetrines and practiee will not only bear the test of eriticism by yourselves and his professional eompeers, but more important than

even this, will endure the test of application at the bed-side of the sick through all your after-lives. Some abstruse and difficult theories must unavoidably come up for investigation by the incumbent of this chair. I shall avoid perplexing your minds with them, unless benefit in some form is to accrue from their discussion. I shall state none of them dogmatically, and when obliged to refer to them at all, will review them in your presence and give you my candid opinion as to their merits. In medicine, as in physical geography, there is even yet an extended line that divides the known from the unknown. That which is known and established, I will strive to teach you practically and *ex cathedra ;* while it is only concerning the unknown that it will be held justifiable to adduce and discuss problematical theories. And however alluring or probable these theories may appear, I shall strive in all cases to weigh them accurately and without bias. I believe I can honestly assure you, that I mount no "professional hobbies."

Notwithstanding the assurance just given you, that in the main you will find but little difficulty in following your teachers, it must of necessity sometimes occur (and the remark applies to a certain extent to all the chairs) that a lecturer will be imperfectly understood, and you will feel discouraged because the subjects seem so far above your present state of learning. This may result from the difficulty, which not unfrequently obtains on the part of a teacher, in accommodating his manner and matter to the various stages of progress in medical education, which always exist among the members of a large class; or it may arise from the execution of a policy, which medical teachers sometimes think it advisable to practice — that of intentionally lecturing, at selected intervals, above the comprehension of a majority of the class, for the purpose of stimulating them to reach this standard by closer study. In the first instance it is, as it were, the fully developed man failing in his well intended efforts to shorten his habitual strides, so as to accommodate his pace to that of the youth who follows him ; in the second instance it is the same adult pursuing his ordinary pace, that he may stimulate his youthful follower to additional exertion. Now I may have said some things which have tended to excite gloomy apprehensions in your minds with regard to the character of the life and the gravity of the duties which your choice of professions will devolve upon you. It is certainly true, that the life of a physician is no sinecure, no idle pastime, no mere plaything, like that of the epicurean—

"To float like a light leaf down pleasure's stream,
Caught in each sparkling eddy there."

From the very threshold of his studies to that hour when he yields himself at last to the inexorable enemy, from whose embrace he has rescued so many of his fellow beings, it is a life of toil and heavy responsibility.

But although I feel it my duty to apprize you in all candor of the difficulties of your undertaking, yet what I have said, and may say, should not dishearten you; but, on the contrary, should stimulate you to renewed effort and renewed determination to surmount all obstacles which may intervene between your point of departure and the goal for which you have set out. On the other hand, I have not spoken to you of the brighter side of this picture. I have said but little to you of the beauties of that noble science, upon whose study you have entered. I have not hinted of new discoveries and new truths, which every morning's sun of your professional life will reveal to you, sparkling like dew-drops along your pathway. I have not told you that, when faithfully cultivated, the medical profession leads to sure competency and high respectability; neither have I mentioned that the life of a good physician carries with it so much of the essence of a true religion, which neither money alone, nor learning alone, however desireable, can represent, that his highest present reward is from this source. "It is the consciousness of doing good; of meriting the blessings which are almost daily bestowed upon him. He feels that he does not belong to the category of those to whom Socrates referred, when he exclaimed, 'The man who does nothing well is neither useful nor agreeable to the Gods.'" On the contrary, when the last hours of his life are gilded by recollections of professional duties well and conscientiously performed, especially if, added to these, he possess a christian's hopes, he enters into the presence of his Maker with a cheerfulness beautiful to contemplate. Not uncommonly we find his last thoughts dedicated to his profession, just as the warrior, the statesman, the philosopher or poet may each devote his dying hours to that subject which had been the absorbing one of his life. Humboldt worshipped nature with a fervor which animated all his writings. His last words were a tribute of admiration to the glory of the sun's beams, which had suddenly shone through the casement of his window and gilded the wall opposite his bed. So Prout, when he learned that his end was approaching, spent his last moments in dictating prescriptions and

advice for the patients who had been under his treatment. You will perceive then that the profession of medicine carries with it, and bestows without stint, an exceeding great reward upon its followers. You will find also, as you prosecute your studies, that of the many formidable lions that seem now to be grimly guarding the pathway before you, *most* are chained and harmless, and this you will discover as you approach them; so with obstructions that seen in the dim distance, appear to you wholly insurmountable — they too will vanish as you near them, and you will exclaim in your exultation, "It was only a mirage that cheated my vision."

Now just here, some of you would probably like advice upon the point of taking notes of lectures. The experience of others may be different from my own, but I am in the habit of advising students not to attempt to take full notes of lectures whilst they are being delivered. The plan I advise you to adopt is, to listen intently to lectures during their delivery, and immediately upon reaching your rooms to write down all that you can remember of them. You may greatly assist your memory by noting down the heads of subjects, during lectures, upon small memorandum books or fragments of paper; but in any efforts on your part to take full notes of lectures during their delivery, you will scarcely succeed in obtaining more than one-half that is uttered, and the remainder will be wholly lost, because of the *distraction of your attention* in writing down that which you have caught.

May I, gentlemen, have your permission to devote a few moments to the notice of this "faculty of attention," which I remarked would be distracted by efforts to write down entire lectures? I wish to impress you with the full significance of the term "faculty of attention," and the importance of keeping it centered upon the subject immediately before you. This may seem an unusual episode in a lecture, either introductory or didactic; but if, in after years, one among you should confess that the suggestion had been of benefit to him, I shall feel comforted for any violation of custom by its interpolation. "The faculty of attention is one of the most varied powers of the mind," says Winslow; "it is the voluntary capacity to direct the thoughts to objects of consciousness"— the power of concentration or of fixation of thought. Newton, when complimented upon his genius, once replied, "that if he had made any discoveries, it was owing more to patient attention than to anything else." Sir Wm. Hamilton, in speaking of this, remarks, "the difference be-

tween an ordinary mind and the mind of Newton, consists principally in this that the one is capable of the application of more *continuous attention* than the other." "Genius," says Helvetius, "is nothing but continuous attention." There is no question of the truth of these aphorisms, as it respects medicine. What precious ores we obtain in these mines are exhumed by patient labor. There is no surface gold which the passing idler is likely to discover with his foot. We see prodigies by birth, as musicians or poets; children who are endowed with miraculous powers of combination in figures; but nature has never yet favored us with a "congenital doctor." All the stories that we hear and read of healing gifts bestowed upon seventh sons, are fictions—sheer frauds upon credulous and gullible humanity. Never sit down quietly, then, and wait for genius to develope you into doctors. Greatness in medicine must be achieved; it will never be thrust upon you. To achieve it with certainty, begin early to cultivate this "faculty of attention." It is susceptible of wonderful control. You can discipline it so as to be a most important aid to you in those portions of your course which are of necessity dry and tedious, while those which are novel or startling command your attention because of their novelty. This faculty of attention constitutes your medium of relation to whatever may be transpiring around you. Withdraw it, and send your thoughts wandering to some distant point, and you at once become impervious to all that is said or done in your presence. Fix your attention upon what your teacher is saying or doing, and just in precise measure to the discipline you have acquired over this faculty, will be your remembrances of the lessons taught you. And these remarks relate not only to that which you may fully comprehend, but to those points also which may seem abstruse and impossible for you to fathom, at the period of utterance. Fasten your attention upon both that which is comprehended and that which is not. The sunshine of the morrow may beam in upon those treasuries of memory, and disperse the clouds of to-day. The experience of the venerable Trousseau on this point is well worth your attention. He advises the student to visit the hospital and observe the patients from the day when he first determines to become a physician. However confused and without order or method may seem to be this material at the time you accumulate it, it will nevertheless, at some future day, prove so valuable as to compensate you fully for your present pains-taking. This will hold more especially true in clinical medicine or surgery.

In your inspections of the sick brought under your observation, many phenomena, to your minds totally inexplicable, will almost daily present themselves. However mysterious or meaningless they may now seem, impress them deeply into your memories. After a time, when you shall have become practitioners of medicine, some of these cases will rise up before you in perfect portraiture. You may then recall, while at the bed-side of some important patient, the whole train of phenomena and circumstances connected with some analagous case observed in the hospital here. The ward; the number of the bed; the appearance of the patient; but, better than all that, the prescription and advice of your clinical instructor, may come up to comfort and support you in your hour of need.

Another and really quite important source of profit to you in the study of disease in the extensive hospital connected with this school, consists in the application of what has been termed the "Numerical Method" in medicine. It is an effort to make figures valuable in bringing accessions to our knowledge of the natural history of diseases. It consists simply in grouping a number of cases of any specified disease and studying the various symptoms and phenomena, the progress, treatment and result in their aggregate relation to the whole number. You can in a moment perceive how such a method of study may be so expanded and refined upon as to be too laborious and voluminous for practical benefit. On this point, I would advise you, gentlemen, to eschew those professional "statistic-hunters," who labor to fill ponderous volumes with records of this character. And yet, on the other hand, I would teach you that the healing art first grew out of this method of studying disease, and is still inseparably connected with it. What we call "experience" consists only of enlarged observation, and a classification, either mental or written, of these observations. When a medical practitioner tells you that any given disease *generally* terminates in any given manner, he has in the very term exhibited an instance of the application of the numerical method in medicine. The difference between him and the plodding collector of statistics is found only in exactitude of expression: while the former expresses himself loosely, the latter tells you that 19 in 20, or 29 in 30, have terminated in the manner given. This application of figures to medicine has been very fashionable since the time of Louis; and such floodgates of this sort of literature have been let loose upon the profession, that minds more matured than yours are often perplexed as to the degree of weight which should be allowed them.

The practical lesson I desired to inculcate by this reference to medical statistics, is this: that, while I feel it my duty to admonish you against falling into this fashionable habit of study, simply because it is fashionable and common, and also because it is liable to divert your minds from other important channels of study, and to set you to searching after *names* of diseases instead of *conditions* of diseases; still, you must not allow this admonition to diminish the accumulation of facts on your own part, or to weaken your faith in the observations made by others, unless those observations are found to have been culled with reference to some preädopted theory. The point I wish to impress upon you is, that while the objects and plan of medical education must include the collection of facts, they must also extend beyond the mere memorizing of facts. "They must include that vigorous exercise of the highest functions of the mind, which is evoked in generalizing and digesting, and in educing well-balanced conclusions and sound philosophy from what you observe. It is this kind of mental work which will endue you with the sinews of thought." The fruits of such a course on your part will be habits of deep thought and self-reliance. Such a course as this will bring you likewise another habit, most desirable for you to obtain: that is, the habit of testing every means of observation and every theory subjected to your criticism by that most unfailing of all touchstones—sound, practical common sense. Thus the best physician will be the one who, while he is most industrious in gathering facts, still finds time to methodize, measure and weigh them, and then proceeds to erect his temple of philosophy upon this foundation, moved by no influence beyond the love of science and truth. Such was Humboldt in natural history. If he had been, on the one hand, merely a compiler of facts, or, on the other hand, merely a theoretical rationalist, the "Cosmos" would have remained unwritten. But he was both a statistician and a philosopher, and to this combination of characters we are indebted for the sublime formulations contained in that work. Such in medicine is every man who obtains and sustains a high position for himself, either as a successful practitioner or a sound teacher. Such persons are frequently spoken of popularly as being men "of unusual good sense;" and some of you may have been led to suppose that they are endowed with mental faculties more in quantity, or better in quality, than the rest of mankind. Now on this point mark my prediction, which is, that if you institute a proper course of training in your studies, and rigidly

persevere in it, you will find the distance which now separates you from these leaders in the profession so largely overcome, that your names will be registered either with theirs or but little lower. Take courage, then. Turn every day to your profit. Let the summit of to-day's acquirements be the starting point for to-morrow. Such a course on your part will not only bring the greatest obtainable benefit to yourselves, but will encourage and gladden your teachers in the execution of their tasks. The teacher who, while he is lecturing, is conscious that the countenances upon which he looks exhibit not only the vigor and freshness of youth, but that close attention, that determination of purpose, that inflexibility of will, which, like the obstructed stream, gathers strength from opposing obstacles—such a fortunate teacher finds his toils inexpressibly lightened. He is like the happy laborer who, while planting his fallow, disregards the driving storm around him, because his thoughts and eyes are upon the yellow harvest which is to come. So such a teacher, looking only to the future, sees the seeds of learning he now scatters taking root in soil which will return its hundred fold. I feel assured, gentlemen, that, with one accord, your Faculty will, at the close of the session, bear cheerful testimony to your most earnest, patient and most profitable attention to their teachings.

Art. II.—CHLORATE OF POTASSA:

By W. H. Laster, Chemist and Apothecary, Charity Hospital, New Orleans.

OF the various combinations known in chemistry, none have been the subjects of more successful study than the compounds of chlorine and oxygen. Of these, hypochlorous and chloric acids are preëminently the most important, not only from our definite knowledge of them, but their varied applications in the arts and sciences. Much of this knowledge is due to the labors of Berthollet, Ballard and Guy Lussac.

M. Berthollet first noticed that, when potassa, soda, their carbonates, or the alkaline earths, lime, magnesia, and baryta, were added to water, they greatly increased the solubility of chlorine, modified its peculiar odor, and interfered with its bleaching power. These compounds, Berthollet, with the majority of chemists, considered a combination of chlorine with the oxide employed; but a minority contended that the alkaline bodies exercised a purely mechanical action, in increasing the solubility of the chlorine.

Upon the discovery of hypochlorous acid by M. Ballard, from the analogy of its mode of preparation to that of the bleaching liquids, it was considered highly probable that the latter contained hypochlorous acid; and since the elimination of this acid from these bodies, chemists almost unanimously regard them as a combination of hypochlorite and chloride.

Berthollet first prepared a solution, which we will term hypochlorite of potassa, at a manufactory of Javel. This liquid came into extensive use as a bleaching agent, but does not appear to have been otherwise employed until the year 1807, when Massuyer, at the suggestion of its inventor, employed it in deodorizing a hospital of Strasbourg. For this purpose, however, it speedily fell into disuse, and not until 1820, when Labarraque demonstrated by decisive experiment the value of the hypochlorites for the above purpose, was it again employed.

It was not our intention to enter into a dissertation upon the general properties of this class of bodies, but merely to bring forward so much of their history as to show hereafter their important connection with the subject under consideration.

Chlorate of potassa was discovered in France by Berthollet, in the year 1786; and the same year in England, by Higgins. Berthollet first observed the formation of this salt, while transmitting chlorine through a concentrated solution of potassa. Chemists conferred upon the new salt a variety of titles, but it was generally known as the oxymuriate of potassa, the name Berthollet bestowed upon it, until the discovery of its acid, by Guy Lussac. This acid he termed the chloric, and, in accordance with the rules of nomenclature, its saline combinations became chlorates.

Chloric acid in combination may be procured by two methods: first, by transmitting chlorine through an alkaline solution of an hypochlorite; secondly, by decomposing an hypochlorite of an

alkali, or alkaline earth, by heat. The latter is the method usually employed in preparing the salt upon an extensive scale.

Chlorine, when transmitted through an alkaline solution, is absorbed with avidity When the chlorine is not in excess, the liquid preserves for a time its stability. If the current be continued, evident signs of decomposition become apparent, until the saturation is complete, when the group of elements employed reärrange themselves in more permanent combinations. Before the liquid is saturated, *i. e.*, while in the quiescent condition, exposure to light or slight elevation of temperature suffices to induce decomposition. At or beyond saturation, the divellent forces seem spontaneously called into existence, and the change is rapidly produced.

We may thus represent the decomposition which occurs in Berthollet's process: $KO+2\,Cl=KCl+ClO$, chloride of potassium and hypochlorous acid resulting from the decomposition. As the chlorine accumulates in the liquid, it combines with the potassium of the alkali, to form a second portion of chloride of potassium, the oxygen uniting with the hypochlorous acid to form the chloric, thus: $4(KO+Cl)\ (KCl+ClO)$, reacting, produce $5\,KCl+ClO^5$, the chloric acid combining with potassa to form the chlorate. We have presumed, in the above decomposition, that the hypochlorous acid for the time being exists uncombined; however, the theory is as tenable, if we insist that the acid is combined as hypochlorite, thus: $2\,KO+2\,Cl=KCl+KO\,ClO$; and $(4\,KO+4\,Cl)+(KCl+KO\,ClO)=5\,KCl+KO\,ClO^5$. The chlorate, from its sparing solubility, separates in part from solution. At the point of saturation with chlorine, we have in the supernatant liquid a portion of chlorate, undecomposed hypochlorite of potassa and chloride of potassium. If this solution, which for convenience we will consider one of hypochlorite (the chloride playing no part in the reaction), be heated, it will, at or near 160° Fahrenheit, be decomposed into chloride of potassium, chlorate of potassa and oxygen, thus: $9\,KO\,ClO=8\,KCl+KO\,ClO^5+12\,O$.

Reasoning upon theoretical grounds, in this process for six equivalents of chlorine and potassa we should demand one equivalent of chlorate of potassa and five of chloride of potassium. In actual experiment, however, less than an equivalent is obtained. The remainder exists in the saturated solution of chloride, every eighteen parts of which contain 6.3 of chloride of potassium and more than one part of chlorate. In a solution which contains the salts in this proportion, it is impossible to separate them by crystallization.

Chlorine, when passed through a solution of an alkaline carbonate, produces the same ultimate effect as with an alkali, but the action is more complex until the point of saturation is reached. Before this point we find chloride of potassium, hypochlorite and bicarbonate of potassa: 4 KO CO^2+2 Cl=KCl+KO ClO+2 (KO, 2 CO^2). As the chlorine accumulates, the bicarbonate suffers decomposition, the chloride and hypochlorite appear in increased quantity, and carbonic acid is evolved: KCl+KO ClO+2 (KO, 2 CO^2)+2, Cl= 2 K, Cl+2 KO, ClO+4 CO^2.

At the point of saturation the bicarbonate undergoes complete decomposition, and the hypochlorite is partially converted into chlorate: 2 KCl+2 KO, Clo+4 (KO, 2 CO^2)×4 Cl=6 KCl+KO ClO^5+KO ClO+8 CO^2. The solution at this point is identical in composition with one of potassa saturated with chlorine. The same compounds, chloride of potassium, chlorate and undecomposed hypochlorite exist, and the latter may be decomposed by heat, as in the former instance.

The objections urged against Berthollet's process apply with equal emphasis to this, and we have alluded to the methods merely to explain the primary conversion of hypochlorous acid into chloric at the expense of the oxygen of the potassa, and the final decomposition of the hypochlorous acid into the same acid as produced by heat.

According to M. Soubeiran (*Pharmacopée Montpellier*, pages 630 and 631), the salt deposited while chlorine is traversing a solution of an alkaline carbonate, is bicarbonate of potassa. Geiger, upon the other hand, affirms it to be a chlorate contaminated with chloride of potassium. Graham affirms this deposit to be chloride of potassium, and advises its removal from the liquid. The fact is, the deposit may be either chloride of potassium, chlorate or bicarbonate of potassa, according to the concentration of the fluid. With a solution of high density, the granular salt first deposited, while the liquid contains a small quantity of chlorine, is bicarbonate of potassa; as the chlorine accumulates in a solution of less density, chloride of patassium is deposited; and finally, when the liquid is saturated, the tabular salt deposited is chlorate of potassa.

The method suggested by Liebig is that usually employed in preparing chlorate of potassa upon an extensive scale. It consists in decomposing a solution of hypochlorite of lime by heat. The hypochlorite evolves oxygen, and changes to chloride of calcium and

chlorate of lime. The subsequent step is to decompose the chlorate of lime by the addition of chloride of potassium; the products are chloride of calcium and chlorate of potassa. The form of hypochlorite employed is known in commerce as chloride of, or chlorinated lime. Large quantities of this substance are prepared in Great Britain and upon the Continent, as a bleaching agent in the manufacture of linen and cotton goods, and as a disinfectant. In its composition it holds analogy with the bleaching compounds before described. Like them, when not thoroughly saturated with chlorine, it preserves its permanence almost indefinitely. The same causes which originate decomposition in the potassic hypochlorite, produce analogous effects in this. Upon the old theory it may be viewed as a chloride of an oxide, or, adopting a more modern view, as a combination of chloride of calcium and hypochlorite of lime. The best commercial samples of chlorinated lime contain, upon an average,

Hypochlorite of lime	31;
Chloride of calcium	27;
Hydrate of lime	26;
Water	16.
	100.

Of the above named substances the hypochlorite is alone of importance to our purpose. The stated quantity, 31 per cent., is equivalent to nearly 20 per cent. of available hypochlorous acid, capable of yielding 6 per cent. of chlorate.

The greatest diversity of composition, however, is to be expected in the commercial article, depending upon the method of manufacture, the degree of saturation with chlorine and the subsequent exposure it has undergone; but the change induced by exposure does not render chlorinated lime useless for preparing chlorate of potassa. The salt can be as well obtained from the spoilt powder as from an unchanged specimen; in fact, to convert this substance into a chlorate, we are compelled to spoil it for all purposes save the one viewed.

An objection of some weight to the use of the commercial article, is the large quantity of hydrate of lime it universally contains, which increases the bulk of the powder, and renders the process more cumbersome by largely augmenting the quantity of water used in extracting the hypochlorite. This increase of menstruum necessarily increases the amount of fuel and time consumed in the evaporation. Again, bleaching powder with this excess of hydrate yields less chlo-

rate than a sample containing chlorine to full saturation. In exact language, the weight of chlorate which bleaching powder is capable of yielding is directly proportioned to the weight of hypochlorite it contains, and the weight of the latter is inversely proportioned to the weight of hydrate of lime. Finally the process of subsidence and filtration are unnecessary, when a completely soluble sample is used.

The following are formulæ which have been employed in preparing this salt:

Take of Chlorinated lime..... 5 pounds;
Water,..... 6 gallons;
Chloride of potassium,.....10 ounces;
Boiling water.....20 ounces.

1. Triturate the chlorinated lime with its own bulk of water, until the mass is reduced to one of uniform consistence.

2. Add one half the remaining water; agitate the mixture, and allow it to stand 24 hours, for the undissolved lime to subside.

3. Decant the supernatant solution.

4. Wash the residue with the remainder of the water.

5. Decant when clear, and add to the solution first obtained.

6. Evaporate this liquid at a boiling temperature to three pints.

7. And add the chloride of potassium dissolved in twice its weight of boiling water.

8. Filter and continue the evaporation until the solution is reduced to two pints.

9. Place the solution aside to crystallize.

10. Wash the saline mass with its own bulk of water.

11. Dissolve the residue in $2\frac{1}{2}$ times its weight of boiling water and again crystallize.

12. Should a solution of the salt, when added to one of nitrate of silver, produce a precipitate, redissolve the crystals and again crystallize.

13. Finally drain, and dry the crystals with a gentle heat.

A second process, in which sulphate of potassa is employed, is the following;

Take of Chlorinated lime..... 5 pounds;
Sulphate of potassa,.....$12\frac{1}{2}$ ounces;
Boiling Water,..... $3\frac{1}{2}$ pints;
Water,..... 5 gallons.

1. Triturate the chlorinated lime with water, as directed in 1, of the former process.

2. Add one half of the remaining water.

3. Dissolve the sulphate of potassa in $3\frac{1}{2}$ pints of boiling water, and add the solution to that of the chlorinated lime; agitate the mixture and allow it to stand 24 hours, that the hydrate and sulphate of lime may subside.

4. Decant the supernatant solution.

5. And wash the insoluble matter with the remaining water.

6. Add the washings to the liquid first decanted, and evaporate, as directed in 6, of Liebig's process.

7. Complete the process, as directed in 8, 9, 10, 11, 12 and 13 of the above mentioned method.

In preparing chlorate of potassa by the method suggested by Liebig, the first step is to bring the chlorinated lime into such a condition that the hypochlorite it contains can be readily acted upon by the water. This object can be accomplished by a variety of methods, as sifting or triturating the dry powder, or moistening with water until the mass becomes of a thin, pasty consistence, and stirring until the whole is homogeneous. Should this step be improperly performed, it results in a loss of hypochlorite, which is enveloped by the hydrate of lime. The second step is the solution of the hypochlorite and its subsequent removal from the undissolved hydrate. This separation is effected by decantation; the bulk of the liquid, its destructive action upon organic matter, and the time required, render filtration or straining impossible. The portion of hypochlorite remaining in the insoluble matter is removed by washing.

The decanted solution and the washings are mixed and rapidly evaporated at a boiling temperature. The hypochlorite at this point is rapidly converted into chloride of calcium, chlorate of lime and oxygen, the latter passing off with brisk effervescence. When the solution has been concentrated to the proper degree, a solution of chloride of potassium is added, which, reacting upon the chlorate of lime, generates chloride of calcium and chlorate of potassa: $CaO, ClO^5 + KCl = CaCl + KO\,ClO^5$. The solution should now, while at the boiling point, be rapidly filtered from the lime rendered insoluble by the heat and concentration. Filtration at this stage of the process is admissible, as the bulk of the liquid is small, and the decomposition of the hypochlorite prevents further action upon organic matter. The filtered solution is now evaporated sufficiently to crystallize. The saline mass deposited is chlorate of potassa contaminated

with chloride of potassium, which impurity may in a measure be removed by washing the salt with water. Solution and recrystallization must in every instance be repeated, until the chlorate no longer gives evidence of containing chloride of potassium. This impurity is recognized in chlorate of potassa by the solution precipitating nitrate of silver.

When hydrate and carbonate of potassa are employed, instead of chloride of potassium, the manipulation in every step conforms with the method in which sulphate of potassa is employed.

Upon the whole, the method suggested by Liebig is in its detail the most simple, and with the average quantity of hypochlorite, as present in the best commercial bleaching powder, it yields results that will compare favorably with any process.

The objection urged against commercial chlorinated lime may, to a great extent, be removed by passing a current of chlorine through the powder, suspended in water, until the hydrate of lime dissolves. By proceeding in this manner, we not only facilitate the subsequent steps of the process, but largely increase the yield of chlorate, as mentioned in a former paragraph. The chlorine necessary for this purpose may be generated from binoxide of manganese and commercial hydrochloric acid, employing 3 parts of the oxide to 12 of the acid. The chlorine generated by this mixture is in slight excess above that required to saturate 2 parts of chlorinated lime. The chlorine need not be washed, as some formulæ direct, for with the binoxide in excess, as it is in the above proportions, and the employment of a low temperature in the generation, too minute a portion of gaseous acid passes over to interfere with the success of the operation.

The chlorinated lime should be suspended in ten parts of water, previously to commencing the saturation, and the mixture during the transmission of the gas should be frequently agitated, to promote absorption. A flask or retort, or, when these cannot be procured of the requisite dimensions, a demijohn answers the purpose equally as well for the generator. When the last vessel is used, it is best heated by a water bath at a temperature of 160° F.

The liquid, after saturation, should stand several hours, to allow the deposition of a minute quantity of insoluble matter — usually carbonate of lime present in chlorinated lime. The liquid, after decantation, may be treated as directed in Liebig's method.

Calvert's process, in which lime is saturated with dilute solution

of potassa, and the mixture heated while submitted to the action of chlorine, may, if attentively considered, be regarded as a modification of the above mentioned process. Many presume, in this process, that, by a direct and primary action of chlorine upon the lime, chloride of calcium is found; that the oxygen eliminated from the lime, combining with the chlorine supposed to be in the free condition, forms chloric acid; which, uniting with potassa, also supposed to exist uncombined, forms the chlorate of potassa. This theory does not admit of the intermediate production of hypochlorite of lime and its subsequent decomposition by heat; yet we have every right to suppose, reasoning upon *a priori* evidence, that the action of chlorine upon a mixture of this kind is analogous to what it would be upon one of its components; and the resultants of this action would be chlorides and hypochlorites of the alkali and alkaline earth. These hypochlorites, as we have before observed, are exceedingly unstable at an elevated temperature, changing to a mixture of chlorides and chlorates. According to the first theory, heat is a mere aid to the combination of the chlorine and oxygen; to this theory it is a vital necessity for the decomposition of the hypochlorites into chlorides and chlorates.

When the decomposition effected by heat is complete, we have in the solution chlorides of calcium and potassium, chlorates of lime and potassa. The chloride of potassium, as the liquid evaporates, rëacts upon the chlorate of lime, generating chloride of calcium and chlorate of potassa. The superior affinity of potassa over lime for chloric acid, is determined in favor of potassa by the inferior solubility of its chlorate, compared with the same salt of lime. Again, this primary and direct oxidation of chlorine to chloric acid is at variance with the known history of the acid, for we know that chloric acid can be produced but in two ways: first, by the oxidation of hypochlorous acid, or an hypochlorite, at the expense of the oxygen of an alkali, as in Berthollet's process; or, secondly, from the decomposition of an hypochlorite by heat, as in Liebig's method.

In lixiviating large quantities of chlorinated lime for preparing this salt, the operation may be most advantageously conducted by employing a barrel with one of its heads removed. About two inches above the upper surface of the chlorinated lime a hole of one inch in diameter should be bored, through which the lixivium may be decanted; and during the process of solution or saturation with chlorine, this orifice may be closed with a cork or plug. To facilitate

the decantation of the last portion of lixivium, the barrel should be elevated upon a box or bench.

The evaporation may be conducted in a leaden or copper pan to the requisite degree of concentration. When the last vessel is used, a portion of copper is introduced into the liquid as oxychloride, which is readily separated by the processes of filtration and crystallization. When the liquid is sufficiently reduced by evaporation, in the above vessels, the subsequent steps may be carried on in porcelain capsules heated over gas flames. During the crystallization of this salt, the temperature should decline gradually, so that the crystals may assume a regular form. If the liquid cools rapidly, the salt is deposited in micaceous crystals, that but poorly exhibit the crystalline form of the salt, which is that of the oblique prismatic system. When the crystals assume a needle appearance, it is in most cases due to the presence of chloride of potassium. Triturated in the dark, chlorate of potassa emits a phosphorescent light. Exposed to heat, the pure salt does not decrepitate, but fuses at a temperature of about 460°F. If the heat be slightly exalted, the fused mass evolves oxygen, and is changed to chloride of potassium and hyperchlorate of potassa. A continuance of this temperature decomposes the hyperchlorate into chloride of potassium and oxygen, the latter amounting to 38 per cent. of the chlorate. Water at a temperature of 70° F. dissolves one sixteenth of its weight of this chlorate; at the boiling point, 2.5 parts of water dissolve one part of the salt. In making a saturated solution at an elevated temperature, the boiling point steadily ascends, until it reaches 220° F., when it remains stationary.

Chlorate of potassa is decomposed by sulphuric and hydrochloric acids, the former evolving hypochloric acid and the latter chlorine. The aqua chlorinata of the former Middlesex Pharmacopœia was prepared by adding hydrochloric acid to a saturated solution of chlorate of potassa. Triturated with phosphorus, sulphur, charcoal and certain sulphides, this salt forms a series of detonating or inflamable mixtures. By the inexperienced, these compounds are better read than prepared.

This salt, like the nitrate of potassa, the chloride, iodide and bromide of potassium, passes unchanged with extreme rapidity into the general circulation. The greater part appears to be eliminated by the kidneys, and it can be detected in the secretion of that organ, as observed in this hospital, in twenty minutes after ingestion.

Urine containing this salt in solution, evaporated at a gentle heat to complete dryness, leaves a buff-colored residue, which rapidly inflames when gently heated in a test-tube over a spirit lamp. Even when the solution contains but one part in two hundred, this incineration is plainly visible, provided the urine contains no large amount of urea. When this is the case, it may be removed by boiling the residue in alcohol, and gently drying the insolulable matter as before.

Still the phenomenon of combustion in this case gives no certain evidence of the presence of the chlorate. The evidence, at best, is merely inferential of the presence of the chlorate, for the nitrate, as we know, is possessed of the same property of increasing combustion, and moreover it is eliminated most actively by the kidneys. The only certain method, when we are desirous of showing the presence of chlorate of potassa in the urine, is to separate it completely from various constituents of that liquid. This is an operation that may be performed with some facility, as the following account will show: A young man swallowed, at 11 A. M., eight ounces of a solution containing half a drachm of chlorate of potassa. After eating a light dinner, he voided at 12½ o'clock ten ounces of urine of a bright amber color. Two ounces of this urine were evaporated at a gentle heat to complete dryness; the residue, placed in a dry test-tube and heated, was rapidly incinerated. Eight ounces of the urine were then rendered alkaline by a mixture of carbonate of ammonia and caustic ammonia; to precipitate the salts of lime and magnesia, the precipitates were aggregated by boiling; and the urine, when cold, was filtered. Solution of sub-acetate of lead was added to the filtered urine, as long as it produced a precipitate; the liquid was again boiled, and, when cold, refiltered.

Sub-acetate of lead, in the above liquid, produces insoluble compounds with the sulphuric, phosphoric and hydrochloric acids—the last especially, when the liquid is cold. Lactic acid, if present, is undisturbed in the solution. The extractive and coloring matter is also rendered insoluble. The bases formerly in union with the mentioned acids are, by the decomposition, converted into acetates, and remain in solution with the excess of sub-acetate. Precipitate the lead by hydrosulphuric acid; separate sulphide of lead by filtration, and evaporate the filtered liquid to dryness upon a water bath. Treat the residue with alcohol, at 260° Fahrenheit, as long as it removes soluble matter. Alcohol at this temperature removes the

urea, the acetates of potassa and soda, and lactic acid or a lactate, if present. If the residue is alkaline, from the decomposition that may be produced by heat, add a few drops of acetic acid, to restore the acid reaction. Dissolve the residue left after the action of alcohol in boiling water and crystallize. Finally, dry the crystals with a gentle heat. This salt should produce all of the characteristic effects of chlorate of potassa.

ART. III.—NITROUS OXIDE GAS.

Read before the Academy of Arts and Sciences, New Orleans: By A. F. McLAIN, M. D., D. D. S.

CONCEIVING that injustice has been done to the subject of Nitrous Oxide Gas in the discussion which took place in this Academy some few weeks since, I propose to reïntroduce it, for the purpose of presenting a few additional points in its favor, which may prove of interest to this Society, especially to those of the Fellows who may be engaged in the "Healing Art," not only as an *anæsthetic* but as a *remedial agent*. I cannot, however, admit, as some of the gentlemen seemed to infer, that, while chloroform possesses many excellent qualities, some of which are its portability and the perfect ease with which it can be administered, there can be no need of resorting to, nor of seeking for, other anæsthetic agents. Granting to chloroform all the advantages claimed for it, the introduction of any new article to the Materia Medica, or the discovery of new virtues or principles in those which have been long known and in use, the application of which is capable of alleviating pain or suffering, should be hailed by all lovers of science and of humanity as a blessing; but they should not ignore, through prejudice, the value of such discoveries, simply because they may have emanated from empiricism, nor even were they the offspring of pure charlatanism. It does not follow that, because a thing is good, nothing else can equal it, nor even possess virtues superior to it. Had perfect safety always attended the inhalation of chloroform, further researches for anæs-

thetics would never have been necessary; but the contrary obtains; for experience, the natural teacher, is demonstrating to our minds the fact that the ill effects of chloroform are of frequent occurrence, and proving disastrous in many instances. Very few persons indeed, who have used it for any length of time for minor operations, especially for the removal of teeth, but have come to the conclusion that an agent so powerfully sedative in its mode of action, cannot be given without hazard, particularly if the operation be not attended with sufficient shock to the nervous system to produce a slight degree of reäction.

One of the dangers of chloroform in the operation of extracting teeth, arises from the fact that, in most cases, super-anæsthesia becomes necessary, by requiring the effect to be carried far enough to produce relaxation of the muscles of the jaw; or, what is quite probable in my opinion, to completely overwhelm the consciousness, so as to obviate that instinctive resistance, caused by the dread of the operation previously existing in the mind, which seems to linger after volition is suspended. But the greater danger in dental anæsthesia doubtless is due to the position of the patient when inhaling the narcotic vapor, for the subject of the operation is invariably seated in a chair, with the head nearly upright. Consequently, when anæsthesia is carried so far as to enfeeble the action of the heart, the patient readily faints; and then syncope places him in the worst possible condition for reäction, owing to the depressed state of the nervous system. Thus it sometimes happens that no reäction takes place, and the patient almost immediately expires.

It would, indeed, be interesting, were it possible, to ascertain the exact number of those who die from the effects of chloroform in small operations; but unfortunately there are no statistics of that kind extant, to which reference could be made. In fact it cannot be said that, in this country, we possess regular and systematic sources of medical statistical information. Such tables, when kept at all, are too meagre, too inaccurate, and therefore unreliable, founded, as they are generally, upon the observations of a limited number of persons who are interested in sustaining some peculiar theories. Their conclusions, consequently, are mostly speculative; and if their prejudices do not impel them actually to distort facts, at all events the information conveyed is unsafe, from being biassed. Besides, their investigations are too often directed toward some particular class of diseases, to be safely depended upon for correct data as to

the number of persons who may have succumbed to the vapor of chloroform in minor surgery. Neither can we arrive at an approximative estimate from European statistics, as regards the mortality arising from that source, notwithstanding the proverbial exactness of their hospital reports; for accidents having their origin in the inhalation of anæsthetics have rendered their surgeons and physicians extremely cautious, and hence anæsthetics are never resorted to but in cases of absolute necessity. Not so in the United States; for however trivial the case may be, without the least hesitancy, either in or out of the profession, immediate recourse is had to chloroform. Where such recklessness prevails, it is indeed a great wonder that more deaths do not occur from it; neither is it surprising that publicity is not given of fatal cases, save an occasional report to be seen in the newspapers of the day.

I began its use almost from its first introduction in surgery, and must confess that, from the alarming symptoms occasionally witnessed in dental operations, with increasing distrust and reluctance have I had recourse to this agent. Finally, after two or three cases having arrived almost at fatal terminations, notwithstanding the utmost care and precaution had been observed, and seemingly without any apparent cause, but owing perhaps to some peculiar condition of the system at the time, or from idiosyncrasies of which I was not aware, I determined to confine its administration to those only with whose constitutions I was acquainted, or to those who were accompanied by their physicians, to share the responsibility and to render assistance, should any be required.

It was but a few days past I learned that a patient residing in the country, to whom I had given chloroform something over a year ago for the purpose of extracting six or seven teeth, had been made extremely ill by it, inducing, from the description of the symptoms detailed to me, a violent attack of gastritis which lasted two or three weeks. I was assisted by her medical adviser, a distinguished physician of New Orleans, and her husband, an apothecary of ability. She was nauseated by the chloroform after taking a few breaths, but having abstained from food for several hours previously, no vomiting took place then. Her stomach, however, continued irritable during the remainder of her stay in the city, *i. e.* for three or four days, culminating, as before mentioned, in gastritis. The inflammation resulting from the operation in the mouth was so slight that the lady was enabled to bear an artificial denture, with no inconvenience

whatever, over the surfaces operated upon as soon as it could be constructed; and it was retained in constant use until recently, when it was replaced by another piece. I would state also that, previously to the administration of the chloroform, her health was perfect.

This is but one among many cases of different kinds, which might be cited to prove that unpleasant results are not unfrequent. Scarcely a year passes, but we hear of fatal cases happening under its influence, and that most frequently in minor surgery. It has been but little over two years since an instance of this kind occurred in a dentist's office, of this city, in which the *post-mortem* investigation revealed the existence of no organic lesion, whereby death could have been caused, except perhaps an impediment to the free action of the lungs, which might have been produced by the wearing of stays, the subject being a female.

As to headache, nausea and vomiting, they are so common in the exhibition of chloroform, that they are almost of daily occurrence. Save the trouble necessary for properly administering nitrous oxide gas, no inconveniences either to patient or operator, ever take place, no change or restriction of diet being requisite.

It may be proper here to mention that the anæsthetic properties of nitrous oxide gas are due to stimulation, differing in this respect from ether and chloroform; while the patients rarely experience any depressing effects after it. Its physiological action, however, is said to increase the oxidation of the solids and fluids of the body, acting at the same time, as before intimated, as a stimulant to the brain and nervous system. Where there exists any prior disposition to congestion or inflammation, its administration may develop this latent tendency, and a fatal result ensue. Its chief danger, however, consists in the rapid generation of carbonic acid gas, which may not all be expelled at expiration. Its advantage over other anæsthetics, even in the morbid condition referred to, consists in the fact, that, being so rapidly absorbed, any ill effects can be quickly detected, while its rapid elimination from the system favors recovery.

With an experience of over fourteen months, giving it almost daily for the extraction of teeth, and that, too, to patients laboring under various organic diseases — the heart, the lungs, and even to pregnant women, some of whom were advanced to within a very short period of full term — I have yet the first unhappy effect to record against the gas.

During the past year, a lady affected with a valvular disease of the heart in which the murmur was quite audible at the distance of several feet, besides being *enceinte*, consulted me in reference to having a large number of teeth extracted; but having been charged by her physician not to take chloroform, which, under the circumstances, without the caution, I would not have given, and as she desired the operation to be as painless as possible, I suggested the inhalation of the gas, but not, however, without the approval of her medical adviser. This having been obtained, she returned immediately; but previously to the induction of anæsthesia, a few breaths of the gas were taken, merely to note its action on the heart and circulation. No perceptible difference on the pulse being observed, it was continued cautiously until perfect insensibility was induced, and then four teeth were removed. On recovering consciousness, and after waiting a sufficient length of time for reäction, should any occur, more gas was administered, and four more teeth were extracted. During both times no bad symptom appeared; the patient enjoyed a calm sleep, with perfect unconsciousness of pain; the pulse continued the same the whole while, save a slight acceleration, which commenced with the inhalation. There were other teeth to be removed, but fearing lest exhaustion might supervene, the patient was advised to defer the conclusion of the operation for a few days. Not experiencing any depression of the vital energies, nor any unusual sensation about the heart, she came back the following day; the gas was exhibited at two different times with an interval between, and the removal of eight teeth effected, with precisely the same result, *i. e.*, a perfect freedom from pain and without the supervention of an untoward symptom.

Now, having shown that the protoxide of nitrogen is generally safe as an anæsthetic, I will proceed to consider its virtues as a therapeutical agent in pulmonary and bronchial affections, as well as after typhus, typhoid and other low types of fevers, wherein an impoverished condition of the blood exists, lacking in the vitalizing principles of oxygenation. Another phase, for instance, of the impoverishment of the circulating fluid of the body, is to be found in phthisis. The nutrient elements being imperfectly elaborated, and their elimination from the system being impossible, they may be deposited in the lungs, or in various other organs. These defectively vitalized materials, when present in the lungs, by impeding respiration, prevent the expulsion of carbonic acid gas, which then being

thrown back into the system, death, as by actual poisoning, is thereby hastened.

I contend, then, that if consumption of the lungs cannot be cured, at least the lives of those thus afflicted may be prolonged, their sufferings mitigated, and perhaps made comparatively comfortable by decarbonizing—therefore improving—the current of the blood. To attain which, I can conceive of no better means than through the inhalation of nitrous oxide gas, which could be made still more potent, should a more powerful impression be desired, by the addition of from one-third to equal portions of pure oxygen gas, the natural affinity of nitrogen and oxygen favoring such a combination.

With the view of testing the gas in this disease, I have instituted some few experiments with several phthisical persons, who expressed themselves as having received much benefit from small doses of the gas by relieving oppression of the chest, acting at the same time as a nervous stimulant, which lasted for many hours after; but from irregularity on their part in following out the treatment, and having been from the beginning in the last stage of the disease, the effect, doubtless, was less marked, and of course more transitory than it would have been, had more punctuality been observed and the treatment begun at an earlier day.

My observations on these cases were an immediate heightening of the color in the cheeks, besides imparting subsequently vigor to the physical energies, which continued, as before observed, for many hours, and sometimes of nearly a day's duration. The condition of these patients was extremely low; and as the object was to note the effect the gas would have upon them, the quantity given at any time never exceeded two gallons, but generally I commenced with one gallon, which was gradually increased to two.

Now, judging from the indications thus presented, it would not be going too far to assume that, if the little taken at long intervals of twenty-four hours was capable of exerting such influences, results of a decidedly marked character would be obtained by its frequent exhibition.

Having also noticed in my own family the great relief it affords when hoarseness and dyspnœa exist from catarrh, I was led to try its effect on the wife of a physician of this city, who has been troubled with chronic laryngitis for several years past, which has resisted every species of medication. I commenced in her case, about three months since, with the cautious administration of from one to

two gallons *per diem*, which was kept up for a month; when observing a gradual improvement in the complexion, and an abatement in the distress about the larynx, as well as an increase in physical strength, she was directed to take it in diminished doses, but to be frequently repeated through the day, in order to keep up a constant impression. To accomplish this, each day a five or six gallon bag is sent to her residence, and the lady, having been instructed how to manage the faucet properly, inhales a little every hour or so, so as to make it last until the next supply arrives. This course has been pursued, as may be inferred, for the past two months. I have omitted, however, to state that in the meantime a partial relapse occurred, through a violent cold contracted during a visit across the lake, about the time of a change in the season, accompanied with damp weather, but which, however, yielded readily to the daily use of the gas. Since then the symptoms have gradually ameliorated to an extent, if not of entire removal, at least so encouraging as to lead to the belief that, should the course prescribed be strictly adhered to, ultimate recovery may be anticipated.

I would not be understood as condemning the use of chloroform, for I am fully aware of its great utility in many cases, and, I might add, its indispensability in most capital surgical operations, and particularly in those cases requiring time and care for their proper performance, owing to the facility with which the anæsthetic effect may be continued. Neither would I appear as the champion of any exclusive mode of producing anæsthesia, for each has its advantages and disadvantages. Facts will justify the statement, that a preparation which is capable of producing such powerful effects upon the human organism, cannot but exert the most deleterious consequences when dispensed indiscriminately of persons and conditions, for trivial operations; such, for instance, as for teeth extractions, in which there is not sufficient pain in itself to cause death. Hence the necessity, and also the great benefit to be derived from having several different agents, possessing different degrees of power and virtues to select from, thereby enabling the surgeon to resort to the one which, according to the circumstances of the case, will reach the end desired, with the least risk to life. Therefore I have not confined myself to the exclusive use of the protoxide of nitrogen, chloroform, ether, or any other anæsthetic, but occasionally have recourse to any of them, and sometimes to the mixed vapors of ether and chloroform — when the indications seem to justify their employment. Re-

cently I have commenced the use of Dr. Richardson's "local anæsthesia" by means of the "etherial spray producer," and have found it to act admirably in those cases of tooth extraction when the organ is dead, and also in removing roots of teeth, or where inflammation or ulceration exists; but sometimes the effect seems to be null; and, again, the pain becomes intense when the etherial spray comes in contact with healthy organs, or with those in which the dental pulps may be exposed.

Another objection to it is its inapplicability to teeth situated in the posterior part of the mouth, the *molares* and the *dentes sapientiæ*, for instance, in consequence of the liability which exists of freezing the fauces and also the cheeks.

Experience being a prerequisite to all new improvements before they can be used properly, people of intelligence, therefore, proceed with due circumspection under such circumstances, and thoroughly test before commending or condemning. It is probable that, in the course of time and by practice, some modification or improvement may be made to this instrument, which perhaps in a measure may overcome some of the objectionable features, that seem to prevent the universality of its application in this branch of minor surgery. So likewise in regard to the nitrous oxide gas in general surgery. One of the principal objections to it, for such purposes, is its evanescent nature, the effect passing off too quickly for capital operations; and unlike chloroform, it cannot be renewed without the coöperalished.

Could some contrivance be made to the apparatus, so as to enable the patient to breathe continuously through the nose and mouth at the same time, as in ordinary respiration, thus obviating the fatigue consequent upon the efforts which are made in blowing, as well as tion of the patient, the construction of the present instrument being such, that the mouth-piece requires to be firmly embraced by the lips, in order to prevent the escape of the gas. Besides, a certain amount of effort on the part of the patient is necessary in inhaling from and exhaling into the bag, which he cannot do whilst in an unconscious state, or at least until consciousness is partially reëstabmight be maintained at the pleasure of the operator, it would, in my estimation, from its speed and uniformity of action, be far superior to ether or chloroform for surgical purposes.

Furthermore, the remedial properties of this gas, which are now attracting the attention of a few medical men at the North, are wor-

thy of investigation, and doubtless, by experiments and trials, many facts relating to its virtues may be elicited, which will tend to render it an important agent in the treatment of diseases, and particularly in pulmonary complaints.

ART. IV.—STEEL BOUGIES:

By W. B. DODSON, M. D., New Orleans.

WITHIN the last few years, the bougie has had assigned to it new and important duties — those heretofore performed by caustic and the knife. Its use has become so general and important in the successful treatment of a special class of local diseases, that the surgeon is greatly interested in the quality and form of those he may select for use. Those in general use, for ages past, were made of different compounds, both vegetable and mineral, and shaped to meet the views of the operator or the manufacturer. They were mostly composed of beeswax, catgut, gum elastic, flexible metal, and, in some instances, of mucilaginous barks, such as *cortex ulmi fulvæ*, etc. The last named article was highly recommended to me a few years ago, by a very learned and highly esteemed author and practitioner of medicine. The wax bougie is exceedingly objectionable, its use being almost invariably followed by inflammation of the urethra, retention of urine, and rigors within a few hours. The gum elastic is susceptible of a beautiful polish and shape, and is less objectionable than the wax bougie, although the same evils to the patient follow the use of the gum elastic, but generally less intense.

The gum elastic, in this climate, is prone to deteriorate and become worthless in a very short time, and for the treatment of strictures of the urethra is comparatively worth but little.

Those made of flexible metal are not susceptible of a fine polish, and cannot be relied upon by the operator, as they will sustain but little force without yielding, and consequently the part in the hand of the operator is no sure guide to the position of the distal extremity of the instrument. Little need be said of those made of such

material as *cortex ulmi fulvæ*, as the probability is, that their celebrity will never be greater than at the present time. Bougies made of other kinds of material possess so little merit that they need not be mentioned.

The steel bougie, when made of the proper shape and size, stands preëminent — susceptible of an exceedingly fine polish, firm and unyielding. No. 6 will pass a firm stricture with comparative ease, while the operator will fail with gum elastic No. 3, besides producing a greater degree of irritation, followed by rigors, etc. The steel bougie will not yield to force, while the sensation transmitted through the instrument to the fingers of the operator will indicate, with considerable accuracy, the kind of tissue with which the point is in contact, and a practised hand will have no difficulty in perceiving when the point of the instrument is engaged in a stricture or narrow place in the natural channel. It produces less irritation than any other material in use, and I have never known rigors follow the judicious and exclusive use of steel bougies. It is true, that silver can be wrought into very elegant instruments, admitting of a fine and beautiful polish, but it is yielding and comparatively soft, requiring much more force to pass a firm stricture than steel.

Clinical and Hospital Record.

Art. V.—NERVE FORCE and BLOOD CHANGES:

Effects of concussion and compression of the Brain on the circulating fluid; illustrated by cases. By Francis Barnes, M. D., late City Physician, New Orleans.

THE mode of death in apoplexy, or mechanical compression of the brain, is still a subject of debate, and it does not seem that the profession have as yet adopted such a theory as will coïncide with all the facts observed in regard to this affection.

I propose to add my mite towards solving the question, and desire to turn the course of investigation into a channel which, I trust, will lead towards truth. The opinions and ideas which I entertain are

the results of observation and reflection on this subject ever since I was a student in the Hospital, when my attention was forcibly attracted to it by a number of cases of sun-stroke occurring during the summer season. The study of the phenomena connected with that curious and fatal affection has led me to speculate upon, as well as observe more particularly, the facts connected with the modes of death commencing at the brain. I beg the reader to bear with me through this somewhat discursive paper, in which a very rich field is surveyed in illustrating the subject, and many points passed in review, albeit too cursorily. Nevertheless I have endeavored to condense into as small a space as possible, and have striven to avoid prolixity, as well as indefiniteness.

While attending the Coroner in the capacity of expert during the last year, I had an opportunity of examining the bodies of two men, one white and one colored, both of whom had been killed almost instantly by blows inflicted about the head. In neither of these cases was there any extravasation of blood in the cavity of the cranium. There was in both cases a congested condition of the blood-vessels of the cranium, and the face of the white man was purple or livid, just as is seen in those who die by strangling. The most remarkable feature about the cases was the condition of the blood itself. One of the bodies had been dead fourteen hours, the other eighteen hours. In both the blood was fluid; ran out as readily from the cut surfaces of the blood-vessels as it would have done in life; seemed to have lost its property of coägulation entirely; and had that dark, grumous appearance which is frequently observed to accompany many diseases in this climate, especially yellow fever. The same peculiarity about the blood, viz., its fluidity and its dark color, has been observed frequently in cases where death has ensued, if I may so term it, when the vitality of the nervous system has been suddenly arrested, as from lightning, from prussic acid and strychnine, where the death has occurred quick enough. This is a very curious subject for inquiry, and I believe enough attention has not been given to it in this country, especially as we have so many diseases in which the blood, to all appearances, presents the same phenomena, and in which death is attributed to the circulation of morbid blood rather than to a lesion or to a dynamical impression on the nervous centres.

While in the Charity Hospital, I was much struck with the fact that, in many *post-mortems* of death by sun-stroke, the blood was

very dark — almost the very color of coal tar — was not coagulable, and what was most remarkable, the same kind of blood was in the right side of the heart as in the left, and in the aërta as in the vena cava, showing that the blood must have passed through the lungs and made the whole circuit of the circulation without being changed, or at any rate being the same in the venous as in the arterial system.

In the interior of Louisiana, in the most malarial regions of it, as the Tensas swamp, there is a singular and very fatal affection which has not received a name, and which I shall describe and let another give it one. The affection is an assemblage of symptoms, apparently the result of an impression on the nervous centres, and that impression a peculiar form of what occurs in a paroxysm of intermittent. It is always preceded by common chills, or paroxysms of intermittent, but finally the patient is seized with one during which the chilly sensation experienced is much more protracted, and the following phenomena present themselves: From the moment the chill is ushered in, bloody urine is discharged from the bladder, and if a blister is applied, bloody serum collects under the raised cuticle. A very small blood-letting causes syncope, and the blood appears broken down and dissolved. These are the most remarkable phenomena in connection with the subject we are now considering, and the rest of the symptoms appear to be disorders of secretion, nutrition and assimilation, which follow and result from this primary impression. The patient rapidly becomes jaundiced; he vomits and purges a great quantity of black, tarry-looking substance which, when smeared on a sheet, leaves a green stain. If he lives long enough, the blistered surface, instead of discharging bloody serum, will discharge green matter, which colors a poultice like green paint. The sufferings of the patient are terrible, as long as he retains his reason, and finally delirium, coma and convulsions close the scene.

The observation of these facts and of a number of others of like character, should prove conclusively, first, that the chemical composition of the blood itself is influenced in a most wonderful manner by the vital action of the nervous system; secondly, that this action alone is sufficient to account, in a great number of cases, for an altered and broken-down condition of the blood, without having to account for it by the theory of ferments present in the blood, in the shape of poisons acting directly on its chemical condition, instead of indirectly through the nervous system.

The principle in the blood to which its coagulability is due, is the fibrine. The property which this substance has, of coagulating spontaneously, enables us to trace its presence in the thoracic duct, before its contents have been discharged into the vortex of the circulation. The same property of spontaneous coagulation enables us to ascertain its presence in the blood; and when this substance has lost that property of coagulation, which it so constantly possesses, it is a remarkable and exceptional circumstance. As it occurs in connection with grave disorders and maladies, and in connection with deaths which occur under peculiar circumstances, it becomes a matter of great interest to study it. The part which fibrine plays on the stage of life has been correctly estimated to be one of great importance. We know that, in some shape or other, it forms a constituent part of every tissue in the body. It stands in the foreground among the phenomena of inflammation. It has a remarkable connection with tubercle and with tumors, or morbid growths. We know that its deficiency in scurvy and its excess in rheumatism give rise to very different trains of morbid symptoms. We know that its altered condition in the blood has something to do with the phenomena of serpent poison. Its deficiency in typhoid diseases has been remarked, and it seems to play a very important part in yellow fever. Also, when the blood is in the condition observed in these diseases, the functions of secretion and of excretion are very much modified, or destroyed altogether.

It is the fashion to account for all the phenomena connected with dissolved blood by the hypothesis of a poison circulating in the blood, altering it by its presence as a catalysis, or by acting chemically upon it. Although I do not wish to deny the theory of the action of poisons, as at present taught, the appearance of the blood, which, to all appearance, is the same in the bodies of those who die from many different diseases, or under so many different circumstances, involves the matter, to say the least, in great uncertainty. If we find this condition of the blood in one case, where there can be no suspicion of poison or of any action outside the body, we have a right to assume a general law influencing this condition of the blood, existing as one of the phenomena of life tending to death, for which it is not necessary to suppose a poison. Now no poison obviously exists in a blow of a stick inflicted on the head, although it might be imagined that poisonous action is connected with electricity, when one dies by lightning; or with prussic acid, or any

other agent producing instantaneous death, which leaves behind no lesion save the dissolved or fluid condition of the blood. But if we conclude that the blow of the stick, the stroke by lightning and the prussic acid produce death in the same manner, viz., by an instantaneous destruction of the vitality of the nervous system, it can be readily understood why the condition of the blood should be the same in all three cases; whereas, if we adopt the hypothesis that poisons have a certain chemical action on the blood, we should expect an invariable and specific appearance in the blood produced by different poisons, and could, by a simple inspection of the blood, tell invariably what particular poison had caused the death of the patient. Now if blood from a dead body poisoned by wourari, by a rattle-snake, by yellow fever, by sun-stroke, by electricity, by prussic acid, and by concussion of the brain, were placed before the best expert in the world, I doubt if he could name the different agents occasioning the death, or distinguish from each other the morbid specimens of these different modes of death. We know that the nervous system has a vital action over the chemical composition of the blood. The same identical kind of blood in the lacrymal gland will form tears; in the salivary glands, will be converted into saliva; in the kidneys, will be converted into urine; in the testicles, into semen; in the uterus, during the menstrual period, will be *defibrinated* and form the menstrual flow; in the stomach, will form gastric juice. We know that digestion will be interrupted by a paroxysm of intermittent; for in the chill almost always the food is vomited, as imperfectly digested as the period is short since it was swallowed; that the dentition of children modifies or destroys digestion; and that apoplexy is almost always attended with vomiting of undigested food. We can imagine no other influence in the different organs secreting different substances, than that influence of the different portions of the nervous system which preside over them; and we ascertain by experiment that this function of secretion will be interrupted by destroying the nerves or nervous centres which supply them. If nervous influence will occasion different products, as secretions, from the same kind of blood, it is not difficult to conceive that the nervous action can alter and modify the blood itself; and that an altered condition of the blood may not only be found when the death has occurred from the instantaneous destruction of the life of the nervous system, but may exist to the detriment and distress of all the vital functions, from a dynamic impression on the nervous

system which, however, has not been the immediate, but only the remote cause, should death not ensue immediately from this impression. In this view of the case we can understand not only the collapse, but the anæmia, which results from a malignant chill and continues so long after the patient has passed through an ordeal, during which he has narrowly escaped death; as also why anæmia, associated with pallor of the countenance, disposition to syncope in the erect posture, *bruit de souffle* of the heart, anasarca, etc., present themselves after slight and almost imperceptbile malarial chills.

If the blood appears to undergo alteration of the fibrinous constituent, it seems to me that it can be made to appear that changes of the globules in a more marked degree occur under this influence of the nervous principle. The dark color of the globules of the one and the bright red color of those of the other, constitute the means by which venous is distinguished from arterial blood. The change of venous blood into arterial is constantly taking place in health in the lungs, in which organs carbonic acid is evolved and oxygen taken in. It is believed that this is a mere chemical operation, and only requires the presence of oxygen and venous blood in contact, in order that the latter be transformed into arterial blood; or that, if nervous action plays any part, it is a mechanical one by reflex action upon the muscles of respiration, or by influencing the diameters of the capillaries of the lungs. This theory does not go far enough, and just so far does not account for all the facts observed of respiration in the morbid, as contrasted with the healthy, performance of its functions. But if we regard the transformation of venous blood into arterial in the light of a secretion, and observe that the glandular organs which transform arterial blood into secretions, as the lachrymal, the salivary glands or the kidneys, are all provided with nerves from the ganglionic system, as well as the liver which manufactures out of venous blood its appropriate secretion, we can account by analogy for the pneumogastric nerve, which presides over the respiratory function, having as a portion of its structure one of the largest ganglia of the body. The presence of this ganglion classes the pneumogastric with the sympathetic, or ganglionic system of nerves, that presides over the chemico-vital processes by which secretions are effected. If the transformation of venous into arterial blood be a chemico-vital process, it is essential that the functions of this pneumogastric ganglion should be healthily discharged, in order to bring it about; and respiration is due to nervous influ-

ence effecting a chemical change in the blood, just the same as this influence is necessary in the chemistry of all the glandular structures provided with ganglionic nerves.

The action of narcotic poisons is to produce death by asphyxia. A subject who is shut in a room plentifully supplied with oxygen, but in whose atmosphere there is an admixture of a certain quantity of carbonic acid, will die from asphyxia; which shows that an excess of carbonic acid circulating in the blood will paralyze the function of respiration. Now if carbonic acid, from any cause, be retained in the circulation, it will prevent the absorption of oxygen into the blood, as well as the elimination of itself; in other words, it acts as a poison producing asphyxia. How does it bring this about? I answer, by interrupting the functions of the pneumogastric nerve, not only as a reflex-motor but also in its more important function of influencing chemico-vital action. Pressure on its ganglion will interrupt the elimination of carbonic acid and prevent the absorption of oxygen, as well as certain narcotic poisons, or the breathing of carbonic acid.

In the history of the cases given below, where coagula were found inside the cranium large enough to cause compression, it was several hours after the injuries had been received before the patients sank into a stupor, before discoloration of the skin was observed, before the features became swollen, and before symptoms of asphyxia were present; consequently we infer that mere pressure on the brain is not sufficient to cause stupor and asphyxia, until it acquires sufficient force to compress the ganglia of the pneumogastric nerve.

Case I. November 16, 1865. *Concussion.*—Frank Brennan, aged about 30, *post-mortem* 14 hours after death. The face was swollen and purplish-colored — almost black; the scalp congested; all the blood vessels about the head and neck turgid. Fluid blood was oozing from the nose and from an abrasion of the right cheek. Body very rigid. The abrasion was of the size of a 25 cent piece. There were two narrow abrasions and contusions, each about 2 inches long, down the forehead to right of median line; one contused wound through the skin over left superciliary arch of frontal bone; one large and severe contusion over left temple. There was no fracture of scull, and no coagula in the cavity of the cranium. The blood vessels in the cavity of cranium were all tinged with blood which was very fluid, and did not coagulate after being taken from

the body. The testimony showed that deceased died very shortly after receiving his injuries.

CASE II. November 15th. Colored man, aged about 35, killed at steamer Leviathan. In this case the examination was made some 16 or 18 hours after death. The details of this *post-mortem* are rather tedious, describing severe contusions and extensive fissured fractures of the skull, but no displacements or depressions, and no coagula inside the cranium. The condition of the blood, its fluidity and non-coagulation and turgidity of the blood vessels, the same as in the first case. This man died almost instantly after receiving the blows which caused his death.

CASE III. John McGarry. *Post-mortem* made 3 hours after death. This appears to have been a mixed case of concussion and compression. Deceased was a young man, about 24 years of age, who, while in a state of intoxication, fell, striking against the hub of a cab-wheel, which produced a superficial wound of the right ear, crossing the meatus. Deceased lived not quite an hour after his fall. There were no injuries of the bones of the skull, but five ounces of blood, partly fluid and partly coagulated, were found between the *dura mater* and skull in the right middle *fossa*, from rupture of middle meningeal artery. I did not learn whether deceased had spoken or had any consciousness after receiving his fall. His face was swollen and purple.

CASE IV. February 11th, 1866. B., 39, Marais street. This man was struck a blow in a crowd on the levee, as he was stooping to let go the cable of a steamer. He walked home; about five hours after his injury was received became stupid and comatose, and died in about two hours after becoming so.

Post-mortem.—Crucial or quadrangular wound through integuments of forehead, right side of median line, $2\frac{1}{2}$ inches from superciliary ridge. Wound $1\frac{1}{2}$ inches each way. Both upper eyelids œdematous and discolored from ecchymosis. Extravasation of blood under aponeurosis of *occipito-frontalis* muscle, just above eyebrows. Fracture, exposing frontal sinus, with detachment of outer table of frontal bone. Fissured fracture of inner table, extending across roof of orbit below. Two and a half ounces of coagulated blood were found in right anterior *fossa* of skull.

CASE V. September 12th, 1865. Col. Sevier. This case I consider the most interesting of all. A man named Storms, a druggist, threw a number of bottles of various sizes at him, one of which, a

pint bottle full of fluid, struck him on the back part of the head, according to the testimony, although no bruise could be detected. The affray occurred about 5 o'clock in the evening. Deceased walked with a police officer, who arrested him, to the station, where he was locked up, none dreaming even that he was seriously injured. Neither the other prisoners nor the jailor remarked anything wrong about him; only it was noticed he snored very loudly about 12 o'clock that night. At 1 o'clock he was still, and he was found dead in his bunk in the morning.

The *post-mortem* was made the next morning, at 9 o'clock. He was a large, stout man. Body was rigid, with no appearance of animal heat. The back part of the body, especially the head and neck, was black from *post-mortem* ecchymosis. The features and neck were much swollen, and the countenance purplish in color. On opening the cavity of the cranium, about $3\frac{1}{2}$ ounces of coagulated blood were found between the *dura mater* and skull, in the right middle *fossa* of the skull. A fissured fracture of the skull, or rather a separation of the bones of the temple in the lines of their sutures, was found; one of the fractures running across the middle meningeal artery, the rupture of which furnished the effused blood, which also found its way through and infiltrated the temporal muscle.

Case VI. Isaac Harrington, wounded 6th of September, died on the 9th. In this case the coagulum was under the arachnoid and weighed two ounces and two drachms. The patient was insensible from the time of receiving his injuries, and died probably rather from inflammation of the brain than the asphyxia of compression.

Case VII. (Date not remembered.) A young man was found by the police, on St. Charles street, in a helpless condition, and was supposed by them to be drunk. They arrested him about 10 o'clock, A. M., and locked him up at the station. After he was placed in a bunk he took a drink of water from one of the prisoners, and in about an hour and a half they discovered him dead. This was the only circumstance connected with his death which I could learn from his fellow-prisoners. I saw him about 2 o'clock, P. M., that day, dead. He was lying in the bunk face downwards. His face was very black and swollen, and white foam ran out from the mouth. I did not make a *post-mortem* examination, but gave certificate for the coroner that, in my belief, he died of apoplexy. The coronor did not hold a formal inquest, but ordered the burial of the body, being satisfied that no violence had been used in bringing about his death. A few

days after I became acquainted with the sister-in-law of deceased. She stated that he was a very temperate man — never touched liquor — and that his health was good. He had about two years before his death received a shell wound in the temple, which left him with a loose piece of bone, about an inch and a half square, in that region. She said that she had often observed it moving, when he was eating, and had felt it with her fingers. Deceased was subject to headaches and vertigo, and appeared very sensitive in the neighborhood of his old wound. I have always regretted not making a *post-mortem* examination in this case. From the great suddenness of the death, and from the region of the wound, I can only conjecture the giving way of the middle meningeal artery as the cause of the death.

Cases illustrating the influence of the spinal system over the nutrition of the tissues it supplies:

In the summer of 1852, I was called to see a negro man at the plantation of T. B. Poindexter, in the Parish of Tensas. The history of his case was, that, a week before, a bale of gunny bags had rolled over the back of his neck, while unloading it from a wagon. From the moment of the accident he had been unable to move or help himself. When I arrived, he had no sensation or power of motion from the arms down. Sensation existed in the arms, and slight power of motion. The ribs were immovable, and respiration was performed entirely by the diaphragm. His stools were passed unconsciously and involuntarily. His urine dribbled from the bladder, which being full, I emptied it with a catheter. His appetite and digestion were perfect, and his intellect quite clear to the last. The pulse was full, about 50 to the minute. The diagnosis made was fracture of the last cervical vertebra. Dr. Wingfield Gibson was present and saw the case with me.

The most singular feature we saw about the case, was the presence of two small gangrenous blisters on the soles of the patient's feet, which were the commencement of a gangrene that gradually spread upwards, till the whole body, as far as the chest, was one mass of foul corruption. The man lived a little over two weeks.

In the summer of 1854, one of Dr. Andrews' negroes fell backwards out of the window of the gin-house, striking with the whole weight of the body on the back of the neck. This patient had precisely the symptoms of the first case. Dissection showed fracture

of the seventh cervical vertebra. He lived only eight days, and *gangrene invaded the feet.*

Mr. Eli Tullis sent a boy to town for a cask of ice, the following year. He sat on top of the cask in the wagon, and drove his mules. Happening to fall asleep, a lurch in the wagon threw him from his perch, and the force of the fall was received on the back part of his neck. This boy lived ten days, and had all the symptoms related of the first case, only that *the gangrene was confined to the feet.*

To sum up, the ideas embodied in this paper and sought to be inculcated are: (1) that to nerve force are due all the chemico-vital actions occuring in animals, the sum total of which constitutes life. (2) That impressions made on the nervous system will alter the fluids of the body, especially the blood, in their chemical constituents, as well as action. (3) The change of venous into arterial blood, by which oxygen is absorbed and carbonic acid exhaled, is a chemico-vital process, and cannot take place without the integrity of the functions of the nerves which preside over respiration. That these nerves are the pneumogastric, which are compound, excito-motory, as well as ganglionic, or chemico-vital. (4) That death from breathing an atmosphere in which there is too much carbonic acid, by strangling, by certain narcotic poisons, as well as by mechanical apoplexy, occurs in the same way; viz., by asphyxia, or by carbonic acid not being evolved, which is of equal importance to life, or even greater, than that oxygen should be absorbed into the lungs by respiration.

Consequently, when a certain quantity of blood is effused into the cavity of the cranium, say two and a half ounces or more, the cords which make up the pneumogastric nerves, and their ganglia in the jugular foramina, become compressed, and their functions are interrupted. The first effect of this is to cause carbonic acid to be retained in the blood, the circulation of which through the brain first narcotizes and then paralyzes it. As the process continues, less oxygen is absorbed and more carbonic acid is retained, until the point is reached when no oxygen is absorbed nor carbonic acid evolved, when the blood is completely poisoned by this gas, and the condition termed asphyxia is complete.

In death by compression, the excito-motory function of respiration lasts after the chemico-vital function is impaired, as the patient breathes some time after the countenance has assumed its purple or black tint, showing the circulation of venous blood through the en-

tire body. In complete concussion, the whole brain, with all its nerves, whether of sensation, motion or chemico-vitality, is at once paralyzed, and all its functions destroyed almost instantly.

NOTE.—I desire to thank the late able and efficient Coroner, Dr. Yeiser, for official courtesies and his polite attention in furnishing me materials from the records of his office.

ART. VI.—WOUNDS OF THE KNEE-JOINT:

Case of recovery without Anchylosis. By W. B. DODSON, M. D., New Orleans.

IN October, 1861, C. K., æt. about 11 years, was accidentally thrown beneath the wheels of a city railroad-car, nearly opposite my office. He was removed from the place of the accident to Dr. M.'s office, where I first saw him, ten or fifteen minutes after the occurrence. He was pale, shivering, and much exhausted from pain and loss of blood. The wounds, which were numerous and extensive, were examined; the hæmorrhage checked by the immediate application of cold water; some brandy and tr. opii administered; the wounds temporarily dressed; and the patient put into a carriage and taken to his place of residence, where the saturated applications were removed and suitable dressings applied.

Both limbs were terribly lacerated. There was a wound on the outer side of the right foot, above the malleolus, extending downwards and backward to the bottom of the foot, exposing the *fibula* and *os calcis;* a similar and counter one, extending into the hollow of the foot; and one on each side above the knee, diagonally across the lower third of the thigh. The left knee had suffered considerably. The integuments were lacerated extensively, and the capsular ligament of the joint on the inside was divided to the extent of an inch and a half, admitting the finger to pass freely within the joint. A probe was also passed through and to the opposite side of the joint, in presence of Dr. Meux. There were two other wounds above the knee, and similar to those described on the right limb, only deeper and more extensive. No large nerves nor blood-vessels were divided. To save the limb, even at the risk of deformity, was considered important and determined upon. To prevent inflamma-

tion and anchylosis was exceedingly desirable, but equally doubtful. The soft parts were brought together and secured by sutures, the wounds dressed, and the limb put in an easy position, semiflexed. The patient was nervous and irritable, almost beyond description, and obstinately refused the administration of chloroform. Notwithstanding the system reacted slowly, the wounds granulated and healed kindly, and in less than six weeks Charley was on his feet again, without anchylosis of the joint, or any deformity of the limbs; and at the end of a few more weeks, the use of the knee-joint was as free and perfect as before the accident.

The impression, or belief, is to some extent prevalent, that the admission of atmospheric air within the capsular ligament of a joint, is productive of inflammation, and consequently destructive to the mechanism of the joint.

Art. VII.—UTERINE POLYPUS:

By J. M. Pace, M. D, Camden, Ark.

ON the 4th of June last, I was summoned to see Mrs. B., aged 29 years, the mother of seven children, the youngest 4 months old. I found her suffering from violent uterine hæmorrhage, which came away in gushes; blanched countenance, weak pulse and cold extremities. She informed me that she had not been entirely free from a vaginal discharge since her confinement. Believing that a relaxed condition of the uterine fibres was the probable cause of the hæmorrhage, I gave her ergot with the desired effect, checking the hæmorrhage, which was followed by leucorrhœa. I then prescribed iron and a generous diet. Fifteen days afterwards, she had a return of the hæmorrhage, though not so severe. I repeated the ergot and followed with iron, with the same effect as before.

At her next catamenial period, ten or twelve days subsequently, she suffered some pain, assimilating the throes of parturition, with increased hæmorrhage. I began to suspect organic disease of the uterus, though a vaginal examination did not confirm my suspicions, the *cervix* being perfectly healthy, pale and patulous. I diagnosed

it to be uteriuc polypus, as she was free from any of thc symptoms of other uterine diseases. I could not detect any augmentation of the size of the uterus by the touch or by palpation. I prescribed cold applications, cnemas of starch, water and laudanum, and vaginal injections of a solution of persulphate of iron, with some benefit. I also gave her ergot internally, with the hope of causing contractions of the uterus, which would probably expel the polypus, but was disappointed in its effects. I required her to keep the recumbent posture most of the time, as any other position would increase the hæmorrhage. After the 1st of September the hæmorrhage did not entirely cease. She remarked to me that she "never was a day without her courses," sometimes very little, mixed with an abundant leucorrhœal discharge, then again violent flooding. She had pain in the uterus and back, sick stomach and vomiting, constipated bowels, frequent micturition, cool tongue and loss of appetite. By a vaginal examination I discovered the *cervix* to bc very pale, patulous and shortened, *os tincæ* disposed to dilate, and the flooding so profuse that the patient complained of imperfect vision and giddiness, sighing respiration, pulse barely perceptible, and extremities cold. Being fully convinced that my diganosis was corrcct as to polypus, and knowing that ergot had ceased to prove of any effect in checking the hæmorrhage or in expelling the polypus, as the tumor was too high up to operate, and as there was no time to lose, I at once determined to inject into the uterus a solution of persulphate of iron, one grain to the ounce of water, with the hope of bringing on more violent contractions, which would relieve the hæmorrhage and probably cause the expulsion of the polypus. The flooding was immediately checked, but the tumor remained *in statu quo*. She had very little more pain than usual.

Six days subsequently (on the 20th of November), she had a return of the hæmorrhage. The constant drain on her system had not failed to show its bad effects—weak, accelerated pulse, loss of appetite, bad digestion, cold and œdematous extremities, palpitation and vertigo. In fact, she was at the verge of the tomb. Knowing that I had checked the hæmorrhage previously by an injection into the womb, I concluded to make the solution double the strength, and, accordingly, used two grains of the persulphate of iron to the ounce of water, with the desired effect, though with increased pain, assimilating labor pains. A vaginal examination disclosed to me an increased dilatation of the *os uteri*, through which the polypus could

be easily distinguished. I at once concluded to operate. Returning to my office for instruments, I was summoned back to my patient Fearing a return of the hæmorrhage, I hastened to her bed-side, when she informed me, with a cheerful countenance, that "something had passed from her," which upon examination I found to be a fibrous polypus, as large as a medium-sized orange. The contractions of the uterus had caused its expulsion by lacerating its pedicle. She has since entirely recovered.

Art. VIII.—BELLADONNA AS A REMEDY FOR CONSTIPATION IN LEAD POISONING: *Case reported by* W. H. Watkins, *Resident Student, Charity Hospital.*

THAT instances of lead poisoning should become more numerous in proportion with the multiplication and extension of the various industrial pursuits employing this metal, is not only a reasonable supposition, but one supported by the statistics of this hospital, if not by those of other fields of observation. The opportunities of acquainting ourselves with the phenomena and correct therapeutics of the malady are in like measure increased, and additional importance is conferred upon all bed-side observations conveying new or valuable information in respect to its treatment. For these reasons I offer for publication some very brief notes of the good results obtained from the use of belladonna in relieving the obstinate constipation attendant upon lead poisoning.

John C., born in Genoa, Italy, aged 38 years, by occupation a sailor, was admitted into ward 19, Charity Hospital, October 16th, 1866, suffering with lead colic and "wrist-drop." The patient was a man of large frame, light hair and blue eyes. His report of the origin of the disease was as follows:

Since the close of the late war he has been engaged in the lumber business, between New Orleans and Florida, and during that time the water used for drinking purposes was kept in a leaden vessel. He had been suffering with the colic and constipation since the first week in August, but the "wrist-drop had made its appearance the

week previous to his entrance into the hospital. The paralysis was complete, and involved the extensors of both hands. There was also deep *leaden* discoloration of the lower gums and mucous surface covering the lips directly opposed to the stain upon the gums. He said that he had obtained temporary relief from opium, but was continually troubled with constipation.

On entering one of the wards in charge of Prof. Bemiss, iodide of potassium and morphia were administered, and sulphate of magnesia was given to remove constipation, but with no good effect. This treatment was continued until October 24th, when he was put upon strychnia and the most drastic purgatives. No operation followed, and the cramps and colic were greatly aggravated. On October 30th, three drops of croton oil were administered, and the patient had one small operation with great pain.

On October 31st, the patient being no better, one third of a grain of extract of belladonna was ordered, three times daily. After having taken two grains, he had a large evacuation from his bowels, and all pain was dissipated.

November 3d. Patient expressed himself very much benefited. The treatment had been continued and had produced three large alvine evacuations. That the belladonna was the agent which overcame the constipation, was rendered sufficiently manifest by the clinical proofs obtained by alternately exhibiting and withdrawing it for given periods. When withdrawn, constipation and attendant pain were sure to recur; when again administered, relief occurred concurrently with other evidences of belladonna influence. The object of this prescription, as announced at the time it was made, was to overcome the condition of intestinal spasm, supposed to exist and to constitute the cause of constipation. The prompt relief of this symptom, proven not only to follow, but to be dependent upon the belladonna, establishes the correctness of the therapeutical course, while it justifies the theory upon which it was based.

Why then may not belladonna prove equally happy in relieving many of those spasmodic affections of the *primæ viæ*, attended with pain or obstruction, or both, and dependent upon other causes than the presence of lead?

It is of further interest to say, in connection with this case, that, after demonstrating the efficacy of the belladonna by its interrupted administration, it was then given persistently for a period of over

three weeks, only suspending its use when its physiological effects upon the throat and eyes were sources of discomfort. During this period the bowels were uniformly soluble, and no return to the use of belladonna was found necessary whilst the patient remained in hospital. The remedies used for the elimination of the lead were iodide of potassium, in large doses, and sulphurous baths. Solutions of strychnia in chloroform were ordered over the paralyzed muscles, after the recommendation of Brown-Séquard. The patient was, by his own election, discharged from the hospital on the 28th of December, relieved of pain and constipation. The indications of lead poisoning still remaining, were "wrist-drop" and discoloration of labial membrane, the former somewhat improved, and the latter much less distinct.

Art. IX. — PLEURO-PNEUMONIA WITH PERSISTENT HICCOUGH: *Case reported by* Thos. K. McNeil, *Resident Student, Charity Hospital.*

JOHN FARRELL, aged 33, sailor on a river steamer, was admitted to ward 19, Charity Hospital, on the 27th day of last December, under service of Prof. Bemiss. The patient was suffering from intermittent fever of tertian type, and his condition at period of admission presented no feature worthy of special attention, beyond evidences of very marked malarial cachexy. He stated that he had just undergone six weeks' treatment in hospital at Vicksburg, and had been exposed to inclement weather during the period intervening between his discharge from treatment at Vicksburg, and his reception into hospital here. On the 28th he was seized with a sudden chill, followed by acute pain in the epigastrium. On the afternoon of the same day physical signs of pneumonia were detected over the base of the right lung. At the same visit hiccough was noted, violent in its accession, and greatly aggravating the epigastric pain. Flaxseed poultices were ordered over the right chest, quinine was given in large doses, with a purpose to subdue the malarial element admixed with the case, and solution of bicarb. potas. in peppermint water, with tr. opii. and chloroform was given for relief of the

hiccough. On the 29th, Prof. B. announced a diagnosis of pleuritis of the covering of the diaphragm, as the most probable source of the epigastric pain and hiccough. This latter symptom existed persistently throughout the entire progress of the case, greatly increasing the distress and suffering of the patient, probably determining the period, if not the character of the ultimate result of the case, and certainly affording a serious obstacle to successful physical examination. Every effort was attempted for its relief, compatible with a judicious reference to the extensive pleuro-pneumonia co-existing, but without success. Decided doses of chloroform afforded momentary exemption, but it returned so soon as the influence of this agent became extinct. The patient died on the night of the 6th January.

Autopsy, held the subsequent day, exhibited the following appearances: On opening the right pleural cavity, it was found to contain about 12 oz. of straw-colored serum. Both the costal and pulmonal pleural surfaces were paved over with patches of lymph, at some points quite organized and adherent, at others of creamy consistence. The arch of the diaphragm was found closely adherent to the base of the right lung, over a surface three inches in diameter, and nearly circular. The lymph glueing these surfaces together was evidently that of recent inflammation, and seemed to afford such reasonable explanation of the epigastric pain, and of the uncontrollable hiccough, that scarcely a doubt can be connected with the correctness of the diagnosis, which referred them to this cause. Points of recent lymph were dotted over the inner surface of the pericardium and exocardial membrane, though no evidence of cardiac inflammation was detected previous to death. The lower and middle lobes of the right lung were completely solidified by pneumonitic exudation. The left lung and other visceral organs presented no indications of disease.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

Art. I—*On trephining the mastoid process and petrous bone.* Dr Pagenstecher.

THE importance of suppurative inflammation of the external and middle ear with reference to disease of the adjacent periosteum and secondary changes of the bone is well known; so indeed is the connection between caries of the petrous bone and thrombosis of the sinuses, purulent meningitis, or abscess in the brain. The case is often truly astonishing, with which, especially in children, an apparently unimportant superficial suppuration of the external meatus, such as commonly occurs with eczematous eruptions of the face or with the exanthematous fevers, induces serious cerebral symptoms. Yet after long continuance, indeed, as our first case will show, after almost forty years, can a circumscribed purulent destruction of the periosteum in the external meatus also excite disease in the membranes of the brain and induce death. We not unfrequently meet amongst children both with acute cases of serious cerebral symptoms proceeding from otorrhœa, and with more gradual diseases of the bone, the former sometimes without, the latter generally after, destruction of the membrana tympani. Intermediate between these are the cases in which, after previous suppuration in the outer portion of the meatus, disease of the mastoid process, usually without injury to the membrana tympani, but in company with violent cerebral symptoms, supervenes. The children have generally not suffered for any length of time from otorrhœa; they suddenly become very feverish, vomit sometimes, wander, and often pass into a state of stupor so early as the second or third day; the ear becomes very painful, hot, red, and swollen, especially about the mastoid process; in slight cases suppuration takes place under the periosteum, in serious ones within the osseous cells. Should the course be favorable, the pus makes its way outwards; if unfavorable, the morbid process spreads more deeply, and death ensues from thrombosis, abscess in the brain, or purulent meningitis. In the majority of cases, the disease is limited to the outer part of the meatus and to the mastoid process, and ends in recovery, even without the aid of an artificial exit for the pus; the tympanic membrane then generally remains intact. The author has recently observed an example in a girl of 12, who had suffered from a discharge out of the right ear for 8 days. The outer portion of the upper and posterior wall of the meatus was ulcerated, and the membrana tympani slightly clouded. Suddenly there appeared fever with delirium, then slight sopor, whilst the integument over the mastoid process became swollen, hot, and red. Pressure caused violent pain. Blood was repeatedly drawn by the artificial leech; mercury and iodide of potassium were administered; the parts were kept perfectly clean. The cerebral symptoms dis-

appeared in 6 days, the noises in the ear and deafness in about 3 or 4 weeks; the hearing was not perfect, however, for some months; the membrana tympani was uninjured. A similar example was seen in a man aged 60. He was said to have been for some days in a partially comatose state; otorrhœa on the left side was stated to have existed for 8 or 10 days. The ear and the parts about the mastoid process were of a dark-red color, very hot, and extremely painful. The soft parts were incised, and the bone perforated; a large quantity of pus and small osseous fragments were evacuated. He recovered perfect consciousness in a few hours; the wound rapidly healed; the membrana tympani was intact. It appears certain that in such cases the inflammation spreads from the external meatus to the mastoid process, and attacks the spongy tissue only at a later period: the importance of an early incision is obvious.

Rarer, but far more serious, are the cases in which secondary disease of the petrous portion appears after extension of the morbid process to the middle ear and usually after destruction of the membrana tympani. The portion of bone over and to the outer side of the tympanum, close to the cranial cavity, is tolerably spongy even in adults, and forms the principal seat of disease. Separated both from the tympanic and cranial cavities by only thin plates of bone, and connected with both spaces by cellular tissue, this spot is above all others liable to become involved in disease of the middle ear, and to induce further extension of the morbid process to the intracranial organs. Abscess may form in the spongy tissue of the petrous bone, with or without previous perforation downwards (into the tympanic cavity), and may end fatally with or without perforation into the cranial cavity. Suppurative inflammation on the one side of the bone possesses in the cellular tissue accompanying the vessels and nerves ways enough of passing to the other surface. Purulent periostitis of the orbit is sometimes fatal in two or three days from meningitis. Caries and previous perforation appear, however, to be by no means rare in the ear. In both the following cases perforation had taken place into the tympanic cavity, but not into the cranium; in the first one, the meningitis was probably induced by the transmission of the inflammation along the auditory nerve. Purulent thrombosis probably depends on the passage of decomposing clots, meningitis on simple extension or on perforation, abscess of the brain often on perforation. Where suppuration has taken place in the interior of the petrous bone, a free aperture outwards for the discharge of pus and fragments of bone will render recovery possible, and thus occasionally save life; the objections raised to trepanning cannot under such circumstances be considered of any account. The first condition for the operation must be the presence of symptoms of suppuration in the interior of the bone, without the existence of any sufficient aperture for its discharge, the great, very painful, dark-red swelling of the soft parts with expansion of the bone itself, and otorrhœa; if the swelling is more prominent over the mastoid process, the cells of the latter will be chiefly affected; if it is principally seated over the depression which generally marks the attachment of the mastoid process, it is more especially the spongy tissue of the petrous portion that is diseased. The condition of the external meatus and of the tympanic

membrane may aid the diagnosis. Perforation of the antero-inferior part of the mastoid process opens its cells; to penetrate the petrous bone, we must pierce the upper attachment of the mastoid process at the point, which, as already mentioned, is usually depressed, to the depth of 6 or 9 lines. The author used for this purpose a brace with a sharp angled bit of $1\frac{1}{2}$ to 3 lines' diameter. The direction in which the instrument should pass is clear; the mastoid cells are opened by boring behind the ear from before a little backwards, the drill being placed just below the middle of the anterior surface of the process. The spongy tissue of the petrous bone is to the outer and upper side of the tympanic cavity, close to the end of the external meatus; the perforator must therefore be placed on the root of the mastoid process, and introduced in the proper direction from 6 to 9 lines deep. Any necessary enlargement of the aperture at the bottom of the wound may be easily affected by a strong director, the bony septa being very friable.

We shall add the author's second case as an example:—F. Braselman, æt. 36, a workman, was examined on the 10th June, 1862. According to his account, his illness had commenced in the previous December with violent pains in the teeth and face on the right side; the last upper molar, although healthy, was pulled out without relief; towards Christmas he suffered from pain and noises in the ear, then from a discharge and increasing deafness; five weeks ago the right side of the face became paralysed.

Present state:—Pale, sallow appearance, great emaciation and weariness, mind slothful, entire loss of sleep for weeks; no fever, no diarrhœa, lungs healthy. Violent headache over the whole right side, especially along the posterior auricular nerve, increased by the least motion; the head is constantly inclined half-way towards the right side. Complete paralysis of the right half of the face, all play of the features arrested, the sensibility distinctly diminished. The right eye cannot be closed, and is during rest much more widely opened than the other; the obliquity of the mouth is not very noticeable when the features are at rest. The inner part of the lower lid is at a considerable distance from the eye; free lachrymation, great conjunctival congestion, slight desquamation of the epithelium from the lower part of the cornea. The vision and mobility of the eye are normal; the uvula is straight. The ear on the affected side is swollen, red and hot; there is an abundant fetid discharge from it. The external meatus is swollen up; the membrana tympani cannot be seen. The mastoid process is very prominent; whilst on the left side there is a deep sulcus just above the process, on the right side there is a prominence at least as broad as the finger; the soft parts are reddened, swollen, and painful on pressure; deep pressure on the bone causes intense pain. Total deafness; no subjective aural sensations.

Perforation was performed two days later, because the strength was rapidly failing, and the torpor increasing. The instrument was applied at the most painful and prominent part of the mastoid process, just beyond the margin of the external meatus, and then introduced in the direction of the petrous bone. At a depth of 6 lines it entered an irregular cavity, lined with a soft velvety membrane, from which escaped thick cheesy flakes of pus and some necrotic

fragments. By means of a strong blunt-pointed director, the cavity was dilated to the depth of 8 or 9 lines; the pus and débris were then well cleared out by repeated tepid injections. Immediate relief and sleep; greater sensibility of the affected side of the face and less insufficiency of the orbicularis, with less lachrymation so soon as the next day. The patient rapidly improved during the following two weeks, though no further change in the facial and auditory nerves occurred. On the twelfth day destruction of the membrana tympani, caries of the floor of the tympanum and of the upper wall of the meatus were found. In August the patient could hear a watch at an inch distance. In the beginning of September some larger pieces of dead bone were removed; the suppuration had almost ceased, the patient worked at his business, and was quite strong and free from pain.

So far as can be determined from the history of the course, the affection began as an inflammation of the middle ear with early implication of the bone; perhaps, rare as this may be, as a primary disease of the bone. The patient repeatedly asserted that the local and eccentrical pains, and the impairment of hearing had existed for a long time before the occurrence of otorrhœa; the facial and auditory nerves became paralysed as the disease of the petrous bone progressed. Both paralyses are now somewhat less complete; that of the auditory is less so than that of the facial. It must remain doubtful in what manner the 5th nerve (pain in some branches at the commencement, slight anæsthesia of the face) was implicated; the author is inclined, both from this symptom and from the mental condition of the patient before the operation, to the view that the intracranial organs were to some degree affected.—*Year Book of Med. and Surg.*, 1864.

ART. II.—*Anthrax.* M. H. COLLIS, *on the treatment of anthrax by pressure.*

THE author states that the seat of anthrax is deeper than the skin or subcutaneous cellular tissue. "This any one can satisfy himself upon by dissection of a single anthrax; or, if such an opportunity be denied him, he has only to inspect the cavity of a large one from which the core has been wholly expelled, and to observe what parts are laid bare, as well as to note the deeply depressed cicatrix which marks the site when all is healed. Having done so, let him examine carefully the early stages of anthrax, on the looser skin of the sides, abdomen, eyelid, or any other part where the fascia is not closely bound to the skin by numerous strings and short bands of the corion, and he will find it in all such cases, not only subcutaneous, but deeper still, lying beneath the lax areolar tissue, and in and beneath the fascia."

Anthrax is essentially an inflammation of dense fascia, in which the superficial areolar tissue is implicated, as in furuncle, and also the deep as in phlegmonoid erysipelas. There is along with, and resulting from this threefold inflammation, a copious exudation of

lymph, which agglutinates the inflamed parts into an almost homogeneous yellowish-grey mass, destroying the vessels, and of necessity stopping the circulation; hence a large and rapidly increasing core results. So peculiar is this core, that Nélaton classes it among false membranes, similar to those which form on the surface of serous membranes. There is some show of truth in this notion of Nélaton's, but it is only part of the truth, and not the main part either. The mode of extension of anthrax much resembles that of phlegmonous erysipelas—sub-fascial exudation goes on, cutting off the vascular supply to the fascia, and, at the same time, exudation goes on superficial to the fascia, cutting off the vascular supply to the skin. This double exudation produces two sets of physical signs; a broad elevation, equal in extent to that of the deep exudation, with livid or dusky red hue of skin, and hard œdema, extending somewhat beyond that limit, points to deep subfascial inflammation. The brighter red of the skin round these openings is another sign of their being akin to simple follicular abscesses; for though not so bright as in healthy phlegmon, the color is less dull than it is in the outlying parts of the tumor. This superficial inflammation is of less extent than the deep, for the simple reason that its products get vent more quickly. The skin only has to be perforated, whereas in the other case, deep fascia and skin must both give way, and the fascia only gives way by becoming a dead slough, and by being cast off by a process of ulceration along its edges. This is a slow process, during which exudation advances, and the diseased action extends its limits."

"Dublin surgeons, as a rule, have been in the habit of treating anthrax by the crucial incision of Abernethy. Some advise that the incision should reach from sound skin to sound skin. Even Mr. Ledwich, following the stern surgery of Tagart, and undeterred by the fatal cases he himself has quoted, gave in his adhesion to this practice. I have long been satisfied that this length of wound was a needless increase of risk and suffering to the patient, and that the mere extent of a crucial incision was of little consequence in comparison with its depth. If not deep enough to allow free vent to the dead core and matter, an incision is worse than useless—it is positively mischievous, and causes the disease to spread. To be deep enough it must penetrate the core, and tap the inflammatory exudation and purulent *dépôt* which lie beneath it, and which would not otherwise find a vent until the core had separated. When making the crucial incision it is easy to know whether we have gone deep enough for our purpose. Should there be still much vitality in the integument, which we have cross-cut, the wound will gape widely, and the point of each angular flap will curl up considerably. Even in advanced cases, where the skin is much undermined and thinner, and where it has not sufficient elasticity to curl up or retract, we shall be able to know if we have gone deep enough, by lifting up the angles of the flaps in a forceps and feeling if they are well loosened from the parts underneath. If they do not yield at once, and freely, we must cut deeper, until we reach the subjacent muscle. The crucial incision then, if adopted, must be deep, to be of use in checking the spread of the disease and facilitating the repair of the affected part."

As an example of the treatment by pressure, we shall select the

last of the four very interesting cases related by Mr. Collis. "A man of blanched aspect, prematurely old-looking, and with all the marks of poverty about him, had two anthraces—one on the point of the right scapula, of large size, and a smaller one in the axilla, near the scapula. The large one was about four inches by three in diameter, as regards the central boggy portion, with a livid margin, a couple of inches wide, all round. The small one, more prominent, was also more advanced, although later to appear. The core was beginning to separate in it, and it had ceased to spread. The larger one was still spreading—it was the seat of deep and burning pain, and had not commenced to open spontaneously. I strapped both with spiral strapping, covering the entire of the larger, and all but the centre of the small one. Not having soap plaster with opium at hand, I used common adhesive plaster. In twenty-four hours the improvement was marked. The pain had lost its burning character, the swelling had decreased, the lividity of the centre part was changed for a healthier red, and the edge of the outer margin was paler. The improvement continued from day to day; a small central opening gave vent to a good deal of healthy pus; and in ten days not only was the core out completely, but the cavity from which it came was mostly healed up; and in three weeks he was well. I gave him a little bark during this period. He had no means to enable him to get good food or stimulants, and continued as an extern all the time.

"From these cases, to which many others might be added, it is plainly evident that anthrax may be treated sometimes without incision. It is, I think, clear enough that we may pause over each case, and consider if it be necessary or advisable to resort to the knife. For my own part I am satisfied that, as a rule, anthrax need not be cut. I do not wish to be dogmatical, or lay down an absolute rule that the crucial incision is to be entirely abandoned, but I am entitled to ask that it should not be held to be a *sine qua non*."

"I have observed that, as soon as the parts get support, the extension of sub-fascial exudation ceases. This is the natural result of giving support round the margin of the inflamed part. The efforts of the matter to get vent are then directed towards the surface, and the necessary sloughing and ulcerating processes are more rapidly performed. I have also observed that the core is more extruded or pushed out than where incisions have been made. In the latter case we have often to pull at the core, and to dress the wounds with terebinthinates and other stimulating dressings before the sloughs separate. This has never been necessary where pressure was used. The core came out generally in one mass, and a healing process seemed to have been going on behind it, so that the subsequent closing up of the cavity was rapidly effected. I may add that I have frequently used the soap plaster with opium, in common furuncle, and in acne rosacea, with the best effects. It checks the suppuration of furuncle if applied in time, and always relieves the pain. In acne it seems to resolve the hard exudation, and to promote a discharge of a drop or two of healthy matter. This has been specially the case in the very chronic form of acne, which would otherwise remain for weeks itchy and sore, neither disappearing nor suppurating. Pressure is not to supersede appropriate internal treatment, of which, if I have said little in this paper, it is not to be supposed I am neglectful."—*Year Book of Med. & Surg.*, 1864.

ART. III.—*Clitoridectomy:* Opinion of DR. WEST on this subject.

I MUST beg leave to state my opinions as briefly as possible, in the belief that my former position as a teacher in the largest medical school in London not only justifies my doing so, but renders it an act of duty.

1. Having for the past twenty-five years seen more of the diseases of children and young persons of both sexes than most members of my profession, and as much of most of the diseases of women at all ages, I believe that masturbation is much rarer in girls and women than in our own sex.

2. I believe the injurious *physical* effects of habitual masturbation to be the same as those of excessive sexual indulgence, and no other. The special *physical* harm done by masturbation I believe to be due to the fact that it can be indulged in at a much earlier age than sexual intercourse, and can be practiced with much greater frequency.

3. But, nevertheless, I have not in the whole of my practice seen convulsions, epilepsy, or idiocy *induced* by masturbation in any child of either sex; a statement, I scarcely need add, widely different from the denial that epileptics or idiots may, and not seldom do, masturbate. Neither have I seen any instance in which hysteria, epilepsy, or insanity in women after puberty was *due* to masturbation as its efficient cause.

4. I *know*, and I can appeal with confidence to the knowledge of many members of the medical profession, that of the alleged cures of hysteria, epilepsy, insanity, and other nervous diseases of women by excision of the clitoris, a very large number were not permanent. I further *know* that in several instances, one of which, seen by me in consultation with Mr. Paget, is related at p. 663 of my lectures, very mischievous results have followed it.

5. Although the moral questions involved in the practice of masturbation are not strictly within the province of medicine, yet, as the quotation from my lectures, taken apart from the context, may appear to imply that I believe the mind could be restored to its purity by any means which our art might furnish, I must add that I hold no such opinion.

We too often see the man in whom desire has outlived the power of performance, for the dream to be possible that there is any necessary connexion between infirmity of body and purity of mind; and most of your readers do not need to be reminded that the judgment of the Church, as well as the sympathy of all, are with the struggle and self-conquest of St. Jerome rather than with the voluntary mutilation of Origen.

6. Whilst I believe the removal of the clitoris in cases of hysteria, epilepsy, insanity, and other nervous diseases of women to be a proceeding theoretically based on erroneous physiology, and practically followed by no such results as to warrant its frequent performance, I regard it as completely unjustifiable when done for the alleged relief of dysuria or of painful defecation, for the cure of amenorrhœa, or for the mitigation of the symptoms of uterine misplacement or disease.

7. I consider that public attempts to excite the attention of non-medical persons, and especially of women, to the subject of self-

abuse in the female sex are likely to injure society, and to bring discredit on the medical profession. I think that such attempts are the more objectionable, when associated with a reference to some peculiar mode of treatment and alleged cure practiced by one individual.

8. I believe that few members of the medical profession will dissent from the opinion that the removal of the clitoris without the cognisance of the patient and her friends, without full explanation of the nature of the proceeding, and without the concurrence of some other practitioner selected by the patient or her friends, is in the highest degree improper, and calls for the strongest reprobation —*Br. Med. Jour.*, Nov. 24, 1866.

ART. IV. — *Hemeralopia.* By A. QUAGLINO, Professor of Ophthalmology in the University of Pavia.

HEMERALOPIA, or day-vision, is somewhat vaguely so termed, because the vision becomes confused or entirely lost at the approach of evening or during the night, but returns with sunrise. During spring and summer it is a very common affection among our peasantry and soldiers in camp; and it is well known to military surgeons that hemeralopia may affect entire regiments, so as to render them quite unfit for service between the evening twilight and the dawn of day. With greater propriety of language, this affection has been denominated nyctamblyopia, because the vision is scarcely ever entirely abolished except in far advanced cases, and for the most part the patient sees tolerably by adequate artificial lights.

We have already twice called the attention of medical men to this disease, first in an article in the "Gazzetta Med. Italiana Lombarda," written before we knew the use of the ophthalmoscope, in the diagnosis of the diseases of the occular fundus, when, being destitute of positive data as to the true morbid condition which underlies it, we gave a far from satisfactory explanation of its nature. Our object in writing then was to demonstrate the efficiency of fumigation with the vapor of the liver of sheep or other animals, applied to the eye, as we wished to reinstate in public estimation a remedy known from the most ancient times, and recognized as most useful by all who have made trial of it. Again, in the "Giornale Oftalmologico di Torino," edited by Borelli for the year 1860, we issued a short memoir, when, having taken advantage of the ocular speculum, we were able to substitute for the supposed morbid conditions, the true alteration on which this strange aberration of the visual faculty depends, as well in the chronic as in the acute forms. We have since maintained, in common with Gräfe and Donders, that hereditary congenital hemeralopia is almost always the effect of a pigmentary or atrophic degeneration of the retina, presenting a special characteristic form, of which we have given a drawing in the iconographic essay, published in the "Annali di Medicina;" and which appears in infancy, and slowly advances, progressing from the ora serrata concentrically towards the papilla. We have also remarked that hemeralopia is often associated with a striking circumscription of the visual field,

the size of which may diminish to that of a small coin, before vision is entirely destroyed, the latter occurring usually in ten, fifteen, or twenty years. We have also stated that hemeralopia is a common phenomenon in syphilitic choroiditis or choroido-retinitis, in which we are now in a position to affirm that the retina undergoes also a pigmentary degeneration very like the former, although not identical, because in the latter it appears that the pigment does not belong to the nervous elements of the retina or to their pigmentary degeneration, but rather to an infiltration of choroidal pigment, set free from its cells, into the thickness of the retinal tissue, after having been macerated by the serous exudations of the choroid. We have finally noted how the papilla in congenital hemeralopia is found small, pallid, and ultimately grey or whitish-blue through atrophy of the nervous substance; and that its arteries gradually very much diminish, and in time become entirely atrophied, a change which also occurs but more slowly in the condition of the veins; thence it appears that the contraction of the visual field and the hemeralopia must be attributed rather to the atrophy of the optic nerve and retina, than to the presence of dendritic pigment spots, inasmuch as the latter may exist without hemeralopia, which may also depend on torpor of the optic nerve or of the retina itself when the nervous elements composing them are compressed, or have undergone a certain degree of atrophy.

Recently Liebreich has propounded the opinion that such an affection, when it is a family one, is to be placed among the diseases readily developed in the human race, like cretinism, deaf-dumbness, epilepsy and insanity, by a kind of deterioration of the species, which is often exemplified in the children of consanguineous parents. This affection is found, in fact, common in noble families, amongst whom frequent marriages between relations take place, for the purpose of preserving the blood of "magnanimi lombi" pure, in the remote villages of certain valleys whose scanty and scattered inhabitants are restricted to intercourse with one another, and among the Jews where relations frequently intermarry. We have also had occasion to see cases in which this origin could not be doubted.

This congenital affection appears to be the consequence of a retinitis, probably hemorrhagic, remounting to the period of uterine life, or to soon after birth, and impeding the development of the arteries and optic nerves—a belief which is founded upon observation of what occurs in adults in whom retinitis or neuroretinitis of every kind is almost always followed by atrophy of the retinal vessels and of the extremity of the optic nerve. The characteristic black dendritic spots appear to be formed by slight hemorrhages along the course of the vessels during the retinitis, which in time become converted into black patches of pigment by metamorphosis of the blood globules. Congenital hemeralopia with pigmentary degeneration ends in total atrophy of the vessels and of the nerve, accompanied by complete amaurosis, which occurs in the more advanced periods of life, aided perhaps by atheromatous degeneration of the arteries, and by that imperfect nutrition of all the tissues peculiar to old age.

The object of our present investigation is, however, not the chronic, but specially the acute form which is developed in eyes originally healthy and enjoying good sight.

It is well known that this affection sometimes appears suddenly, and at other times gradually. The subject of it notices that his vision becomes obscured at sunset by a dense mist enveloping the objects of sight, through which he can no longer distinguish them, unless they are well illuminated by a sufficiently bright artificial light; and this obscuration increases until he becomes unable to distinguish the moon or the stars, and in most serious cases, until he can perceive no object whatever, even though well illumined.

The hemeralopia is also apparent by day, when he passes into a dark or dimly-lighted room.

The affection is not accompanied by painful symptoms, and there is no external alteration of the ocular membranes, except some varicose sub-conjunctival vessels, deficient brilliancy and liveliness of the cornea, and some dilatation of the pupil, persisting even in a strong light, and indicating the torpid condition of the retina.

Neglected, the disease may spontaneously disappear on the arrival of autumn, when the night is longer and the sunlight less dazzling. It leaves, however, a special tendency to a recurrence, through which the patients relapse at the return of spring. It is generally developed in March or April, and ends with autumn. Not unfrequently it persists, but then the obscuration continues during the day, the acuteness of vision becomes impaired, and finally the disease terminates in amblyopia or amaurosis.

The individuals most especially liable to it are hepatic and venous cases who have for a long time been subjected to the action of marsh miasmata, those affected by scurvy or pellagra, sailors on long voyages, and especially soldiers bivouacked in the open country, exposed to the bright rays of the sun and the humidity of night. We have seen the acquired chronic form developed in patients who afterwards died from cirrhosis or cancer of the liver.

The pathological state underlying hemeralopia was unknown to ophthalmologists, some of whom, as Scarpa, held it to be an intermittent amaurosis of gastric origin; others, a species of masked fever; others, a particular intermittent neurosis arising from rheumatism, from marsh miasma, etc.; others, finally, considered it a kind of exhaustion of the retinal sensibility produced by the prolonged action of too bright light reflected from dazzling surfaces, such as the white ground in summer, when the day is much longer than the night.

These pretended pathological facts were alternately suspected and admitted by practitioners, until ophthalmoscopic examination revealed those alterations of the fundus oculi which accompany the development and course of the disease. We will presently discuss these more at length, as we have had the opportunity, by the kindness of our excellent friend and colleague, Cavaliere P. Giudici, military surgeon in Milan, to examine in the Hospital "del Monastero Maggior," a considerable number of hemeralopic soldiers coming from the camp, and to observe these very changes.

It is, we think, important to direct the attention of our medical brethren to them, with the view of showing that hemeralopia, instead of being the nervous disease it was formerly considered, is rather a symptom of a material and recognisable morbid process, which, though slight, and susceptible of spontaneous cure in the early stages

of the disease, provided the patients withdraw themselves from the action of bright light, yet may be in time, and after repeated recurrences, the point of origin of more serious alterations of the retina and optic nerve that may eventually lead to amblyopia or even amaurosis.

The following are the constant alterations which we have found in thirty soldiers, all of whom had come from the camp of instruction at Somma. They were observed at different epochs from the commencement of the disease, some on the first, second, or third day, and others after weeks or even months.

1. Whitish-grey haziness of the whole retina, especially around the disc and along the retinal vessels, after invading the disc itself. This haziness is more or less intense according to the duration of the disease, and the degree that the vision has become impaired. In consequence of it the subjacent vascular layer of the choroid is distinguished with much difficulty by the ophthalmoscope. The retinal haziness gradually disappears in soldiers after some days in a dark room, or after other treatment.

2. Manifest congestion of the veins; they are also tortuous, and contain a dark blackish blood, seeming almost coagulated.

3. The central arteries are often enlarged in the region of the disc, but when the disease has lasted for some time, they appear lessened and hidden here and there in the parenchyma of the retina, which presents a thickened appearance.

4. In many cases, when the disease is recent, the disc looks red or roseate, through most delicate injection of the capillaries and development of collateral vessels. In these cases also the rete of varicose choroidal vessels appears closer, the vessels redder and more swollen.

5. The obscuration of the retina is in time dissipated, the purple transparency being restored; but both the arteries and the veins become smaller and more slender, and the contours of the disc lose their regularity and are fringed by streaks of dark pigment. Many times the radial fibres of the optic nerve become opaque, so as to render the bounds of the disc indistinguishable from the rest of the retina, which is also slightly clouded.

6. When the disease has many times recurred and the patient become amblyopic, the appearances first mentioned are usually replaced by those of atrophy of the vessels and disc, attended by the characteristic white reflection of the nervous substance, more or less marked.

It results from the alterations described that the process on which the hemeralopia depends is seated in the extremity of the optic nerve, in the retina, and in its vessels; and that the affection must be considered as a venous stasis, accompanied by serous infiltration of the retinal substance, and of the nervous fibres of the optic nerve, which form the disc.

This serous exudation impairs the transparency of the retina, renders it greyish and consequently visible, and compresses the layers of rods and cones, making them less apt to receive the rays which emanate from objects illuminated by too weak a light, such as that of twilight or of night.

The symptom of hemeralopia is not confined exclusively to this

single species of retinitis, and does not constitute *per se* a special form, for it is often found in syphilitic retinisis, in serous retinitis albuminurica, in amaurosis from progressive atrophy of the optic nerves with or without pigmentary degeneration, and sometimes also in arthritic or rheumatic choroiditis; in which there is an evident compression of the bacillary layers.

Hemeralopia is a frequent symptom in cases of pellagra, terminating sometimes in progressive atrophy of the optic nerves, a result promoted and sustained by chronic pio-meningitis, which is developed in many cases, and the occasion of all those other nervous perturbations accompanying the disease to which we are referring.

The predisposing causes of this disease are no doubt those abnormal conditions of the abdominal viscera which favor venous stasis in the region of the superior cava, such as long continued intermittent fevers which have left infarctus in these viscera, gastric fevers, and the scorbutic dyscrasy. The exciting causes are the dazzling light of the sun, the white reflection of the earth, or the glittering one of water, through which the retina by excess of stimulus becomes irritated and congested. Probably some part is also played by suppression of perspiration and the rheumatic poison.

Hemeralopics have generally a leuco-phlegmatic appearance, are of a yellow color, or even a decidedly jaundiced hue, showing the disturbed action of the liver, and have swollen gums readily bleeding.

Hemeralopia frequently recurs in soldiers who return to camp too soon after treatment, and in the same season in which the disease attacked them. It often supervenes in spring or in the following summer. We have observed cases in which the patients were hemeralopic for the fourth or fifth time, and who yet recovered perfectly.

Three effective means of treatment have been tested by experience, one perfectly rational, and which fully satisfies the casual indication, *i. e.*, seclusion of the patient for a number of days in a thoroughly darkened room ; another, empirical and popular in its action, namely, fumigation with the vapors from sheep's liver or that of other animals; and, finally, the use of cod-liver oil.

We have not yet made a sufficient number of comparative trials to determine to which of these three means the preference should be assigned.

The dark chamber and the vapors suffice in more recent cases; the oil, in obstinate and rebellious ones; at least, so it is asserted by some military surgeons.

When, however, the disease is of old date, and the retinitis continues and threatens to lead to atrophy, which progresses afterwards independently of inflammation, if will be necessary to have recourse to other more energetic therapeutical aids, as tartar emetic, if there are gastric complications; calomel alone or with aloes, if there are engorgements or infarctus in the abdominal viscera; sulphate of quinine, if there is clearly marsh infection; fresh vegetable food, if the affection is of scorbutic origin; nutritious meat diet and baths, if it is caused by pellagra. Flying blisters to the temples, to the mastoid processes, or to the forehead, have been found of use in rebellious cases by English physicians. Diaphoretics and bitters have also frequently been recommended. In sailors who have been long at sea the disease often spontaneously ceases in a few days after landing.

The prophylactic treatment is by protecting the eye from too bright light, and by means of smoke-colored glasses.—*Lond. Ophthal. Rev., Oct.*, 1866.

Art. V.—*Surgical Intoxications.* By M. Maisonneuve.

CONSIDERING the brief space occupied in surgical treaties by the study of septic poisoning, one would suppose that these accidents play but an insignificant part in mortuary statistics. Therefore, many, probably, will be surprised at this statement, established, however, on a rigorous calculation, that, of a hundred subjects who succumb after surgical operations, ninety-five at least die poisoned.

If we deduct the very small number who die, after operations, of hæmorrhage, of tetanus, of cerebral affections and of suffocation, we see that almost all the rest fall under one of those accidents designated as phlebitis, angeioleucitis, erysipelas, diffused phlegmon, gangrene, traumatic, hectic, peritoneal, puerperal and other fevers.

Now here is precisely the point at which we aim, and we expect to establish: (1) that all these various accidents are in reality only forms of poisonous infection; (2) that we are now able to specify their true mechanism; (3) that, in the present state of our knowledge, the surgeon is amply prepared, in most cases, to prevent their development, by arresting the production of the poison, by neutralizing or discharging it when produced, or by effecting a strict closure of its channels of communication.

Statement of the Theory of Surgical Intoxications. This theory consists in considering all the accidents following traumatic lesions as the result of a poisoning due to the introduction into the circulation of toxic substances produced by the organism itself. It is founded on these facts:

(1) That the blood, the lymph and other living fluids, exposed to the open air or in contact with decomposing bodies, soon lose their vitality; (2) that, once dead, these fluids putrefy, as do all organic substances subjected to the general condition of putrefaction—air, heat and moisture; (3) that the products of this decomposition have qualities eminently septic; (4) that it is the same with certain excrementitious fluids, such as the urine, the bile, the intestinal liquids or gas; (5) that, while infiltrating all the permeable regions with which they come in contact, such as especially the cellular tissue, the orifices of the lymphatic vessels and veins, these toxic substances produce on one part local inflammations designated under the names of simple, diffused, or gangrenous ulcers, erysipelas, angeioleucitis and phlebitis; (6) that these same putrid poisons, alone or mingled with the products of the special inflammation which they have provoked, can, on entering the circulation, alter the blood itself, derange its important functions, and then, circulating with it throughout the organism, carry their destructive action to the innermost elements of the economy; (7) that, after their expulsion from the channels of

circulation, they can still, while remaining in the capillary plexus, the parenchyma of organs, the serous, cellular and other cavities, become the cause of an infinity of secondary disorders, often as formidable as the primary (metastatic accidents)—erysipelas, anthrax, parotitis, abscess, etc; (8) that the sum of these disturbances produced by the presence of destructive agents in the circulation, constitute what are called *surgical fevers;* (9) that these fevers present, in their symptoms and progress, special traits, which vary according to the nature of the toxic substances producing them, and enable the experienced practitioner to recognize their origin; (10) that we may obviate these accidents by preventing the production of the poison, by destroying it when formed, or by closing the channels of its introduction ; (11) that henceforth art is prepared to fulfill these indications in most cases, using at its convenience the operative means at its command, such as the sub-cutaneous method, the extemporaneous ligature, cauterization in points, wringing or torsion, elastic or digital compression, injection into closed cavities, and obliterating, evacuating and antiseptic dressings.

All these modes effect one or the other of these valuable results: either to prevent the putrefaction of the exuded fluids, or to close effectually the entrance of their putrid elements.—*Gazette Méd. de Paris, Dec.* 22, 1866.

Medical Pathology and Practical Medicine.

ART. VI.—*Graphical Study of the Respiratory Movements.* By DR. MAREY.

M. MAREY has generalized the application of the graphical method, and has applied it to the study of all the movements of the system. The respiratory movements, by their importance, certainly deserved to be studied amongst the first. Before M. Marey, M. Vierordt, who had already undertaken and published researches on the form of the pulse, studied by the graphical method, was led to use that same method for the study of the respiratory movements. He published, in 1855, in connection with M. Ludwig, the results of his researches, which include, amongst other principal facts, the two following conclusions : (1) the height of the curves measuring the amplitude of the respiratory movements is clearly proportional to the quantity of air inspired ; (2) the thorax dilates so much the less as the respiration is more frequent.

M. Marey, experimenting for himself, aimed to verify the results obtained by the two German physiologists, and, more especially, to determine the conditions which might cause some variations in the rhythm, frequency and amplitude of the respiratory movements in the healthy or physiological state, in order to have a criterion admitting of investigation and the discovery of the cause of the perturbations produced by diseases in those movements. He first took care to make the application of the graphical method as simple as possible, so that it might be used in medical practice.

M. Vierordt used the sphygmograph, the button resting on the sternum of the patient; M. Marey uses the cardiograph, but, in place of the stethoscope, adopts a little instrument called the "elastic cylinder," composed of coiled-wire spring inclosed in a thin india-rubber tube. At the two extremities are two round metallic pieces on which the india-rubber tube is fastened circularly, and bearing a hook in the centre; a string fastened to the two hooks and passed around the body like a belt, holds the instrument in place. A tube of small diameter is pierced perpendicularly by one of the extremities of the cylinder, and establishes a communication with the external air, or, adapting to it an india-rubber tube, with the cardiograph. The lever of the cardiograph executes ascending and descending movements, according as the elastic cylinder is stretched, corresponding to inspiration; or is shortened, corresponding to expiration. Several elastic cylinders may be applied at one time, which allows us to compare the movements of the thorax and of the abdomen. Moreover, we can register also at the same time the respiratory movements and the pulsations of the heart, by applying to it the stethoscope of the cardiograph. By that process the subjects under trial place themselves as they please, and are not obliged to be on their back, as they have to be in the experiments of MM. Vierordt and Ludwig, an inconvenience which must necessarily limit the number of cases in which the process could be applied.

In the graphical exhibition of the respiration, the inspiration is represented by the descending portions of the curved line, and the expiration by the ascending portions; if on the line of abcissas we mark points corresponding to the limits of the inspirations and expirations, that line will be divided in lengths proportional to the duration of each of the respiratory movements; the fullness of the respiration is measured by the vertical height taken on the lines of the ordinates of the curve corresponding to the inspiration or to the expiration we desire to measure. We neglect here several accessory points: the preceding details, notwithstanding their conciseness, will do to illustrate a graphical drawing representing the respiratory movements. The first observation upon these remarks is that, between the two movements of inspiration and expiration there are no pauses, as several physiologists yet maintain.

M. Marey has since attempted, by means of his apparatus, the solution of several problems, for instance, the connection between the respiratory movements of the thorax and those of the abdomen, and thence the connection between these movements and the respired air; the evolution of the volumes of air inspired and expired; the modifications which the character of the respiration undergoes under certain influences, such as the narrowing of the respiratory passages, the obstacles to the passage of the air, either in one only or in both stages of the respiration; the external compression of the thorax, etc. He endeavored also to determine the connections between the pulsations of the heart and the respiration. We cannot enter into the details of these different experiments, the results of which are afterwards expressed in a very clear manner in several synoptic tableaux; we simply give the following conclusions of the author:

(1) The movements of the thorax and of the abdomen are perfect-

ly parallel in the normal state, so that, if you register them simultaneously, they give the same drawing.

(2) The motions of the thorax and of the abdomen are at every moment proportional, in their intensity, to the quantity of air they put into motion.

(3) We can estimate the volumes of air respired in a given time, from the amplitude of the responsitory movements registerd by the graphical instrument.

(4) There is no normal rhythm nor frequency of the respiration; but we can determine the influences which modify that frequency and that rhythm. We have only studied the influence of the obstacles to respiration, they act thus:

(5) If we breathe through a narrow tube we diminish the frequency of the respiration, increase its amplitude, and change the rhythm by increasing the period of respiration.

(6) If the obstacle to the respiration exist only in one way—which happens when we put a valve in the tube, the obstacle increases the period of respiration during which it acts.

(7) The connection between the frequency of the pulsations of the heart and the respiratory movements is altered, when there is an obstacle to the passage of the air. At the same time respiration becomes less frequent and the pulsations of the heart more frequent.

We forbear to discuss the preceding conclusions; new experiments will undoubtedly confirm or refute them. We will only remark—and M. Marey knows it very well—that the application of the graphical method to the study of the respiratory movements is not as precise as when applied to the study of the pulsations of the heart, for two reasons: first, the action of the will on the respiration—which action it is always difficult to neutralize completely; and, secondly, the compressibility of the air which, in many cases, must interfere with the connection between the amplitude of the respiratory movements and the quantity of air inspired or expired.

We acknowledge, nevertheless, all the interest and all the importance of the graphical method in such physiological studies; we also think, with M. Marey, and we hope that clinical practice will gain by this new process of investigation; but before accepting the facts as scientific truths, it will be necessary to be assured that the experiments which have seemed to establish them were made without the causes of error which we have pointed out.—*Gazette Médicale de Paris, Oct.* 13, 1866.

ART. VII.—*Autophagy in Acute Diseases, in relation to its diagnosis by Aphthæ and its treatment by Alimentation.* Condensed from a paper by DR. MOURGUE.

AUTOPHAGY, according to the author, is the sum of the morbid manifestations resulting from an excessive fasting. When one has nothing to eat, he consumes himself (Trousseau). Numerous cases have convinced me that a great number of patients, in acute diseases, die from hunger, of intercurrent autophagy, when they are put on a too short diet.

Autophagy is a special disease, or rather a degeneration, a transformation of all diseases by fasting. It presents two sorts of symptoms: some are localized in the intestinal tube, and disclose a special inflammation, with the production of characteristic false membranes; the other symptoms, generalized in the different organs of the system, vary according to the diseases in which they are observed.

The aphthæ are the principal expression of the ruined economy, caused by the fasting, and characterize the autophagy. Modern microscopists have found that the *muguet*, the aphthæ, etc., are parasitical productions caused by the presence of a particular fungus, the "*oïdium albicans*" (Ch. Robin). On another hand clinical observation has shown that the organic destruction of the subject of the parasitic growth, whether animal or vegetable, constitutes the condition of its development. In fact, moss and lichen grow on the bark of old trees. Lice and worms attack especially feeble plants. The itch and vermin particularly manifest themselves on feeble and sickly people.

Practice confirms these views of sound physiology. Aphthæ generally appear at an advanced period of grave diseases. They are generally the signal of the last period of incurable diseases, cancer, tuberculosis, etc. Numerous observations have proved to me that the aphthæ of acute diseases will readily disappear, and the patients get well, when properly fed; whilst these morbid productions will get worse and the patients will die, when the alimentation is defective, whatever may be the local applications used, alum, borax, cauterization, etc. "It remained," adds the author, "to determine the precise moment when alimentation becomes necessary, or to trace the characteristics peculiar to autophagy. This desideratum of science has been attained. The course of the practitioner is traced with mathematical precision in this condition.

Whenever there are aphthæ, there is autophagy which claims alimentation."

In a note the editor remarks with justice, that aphthæ are far from being an unequivocal sign of autophagy, because they are developed in many circumstances where it is not possible to attribute their origin either to a bad general health, or a deficiency of alimentation.

We will add that M. Mourgue seems to confound aphthæ with *muguet*. The latter is always characterized by the presence of the "*oïdium albicans*;" aphthæ, on the contrary, seldom present cryptogams under microscopic examination, and when this is the case, they are never the fungus of *muguet*.—*Gazette Médicale de Paris, Nov.* 17, 1866.

Art. VIII.—*The Relations of Cancer and Consumption to Climate in the United States.* By E. Andrews, M. D., Prof. of Surgery in Chicago Medical College.

IN all my reading upon the subject of cancer, I do not remember to have seen it suggested that the disease had any relations to climate. In examining, however, the statistics of mortality published in the report of the last United States Census, I have taken the pains to extract the figures, and calculate the proportion of deaths

from cancer to the total deaths from all diseases in each State and Territory. I have also compared the results with the statistics of consumption in the same regions, and tabulated the whole for reference. This examination throws a gleam of light on the origin of cancer—a subject which has hitherto been shrouded in Egyptian darkness.

The figures show that the deaths from cancer in the United States have a clear and definite relation to the climate; and that the geographical distribution of this disease is almost identical with that of consumption.

The following table shows the proportion of deaths from these diseases to the total deaths from all diseases. The table arranges the States in the order of the frequency of the cancer, from Vermont, where it is most prevalent, to New Mexico, where it is the least frequent:

Table showing the proportion of deaths from Cancer and Consumption to the total deaths from all diseases in each State and Territory.

	From Cancer.	From Consumption.
Vermont,	1 to 40	1 to $4\frac{1}{6}$
New Hampshire,	1 " 42	1 " $3\frac{2}{3}$
Rhode Island,	1 " 52	1 " $4\frac{1}{8}$
Maine,	1 " 65	1 " $3\frac{1}{3}$
Massachusetts,	1 " 69	1 " $4\frac{1}{5}$
Connecticut,	1 " 80	1 " $4\frac{3}{4}$
New York,	1 " 86	1 " $5\frac{1}{2}$
Pennsylvania,	1 " 95	1 " $5\frac{4}{5}$
New Jersey,	1 " 96	1 " $5\frac{1}{3}$
Ohio,	1 " 104	1 " $6\frac{3}{4}$
Delaware,	1 " 108	1 " $5\frac{11}{12}$
North Carolina,	1 " 110	1 " $15\frac{2}{3}$
Maryland,	1 " 114	1 " $5\frac{9}{10}$
Nebraska,	1 " 117	1 " $12\frac{1}{2}$
Michigan,	1 " 118	1 " $5\frac{6}{7}$
Iowa,	1 " 124	1 " $9\frac{1}{4}$
Virginia,	1 " 126	1 " 10
Wisconsin,	1 " 129	1 " $7\frac{1}{3}$
Oregon,	1 " 137	1 " 9
South Carolina,	1 " 142	1 " 22
Minnesota,	1 " 144	1 " $6\frac{1}{3}$
Georgia,	1 " 146	1 " 22
Florida,	1 " 148	1 " 16
Illinois,	1 " 157	1 " $9\frac{1}{2}$
Alabama,	1 " 162	1 " 19
Tennessee,	1 " 165	1 " 9
Kansas,	1 " 165	1 " $12\frac{2}{3}$
Indiana,	1 " 169	1 " $8\frac{4}{2}$
Kentucky,	1 " 170	1 " 9
California,	1 " 180	1 " $6\frac{2}{3}$
Mississippi,	1 " 187	1 " $19\frac{3}{5}$
Texas,	1 " 198	1 " $19\frac{3}{4}$
Missouri,	1 " 214	1 " 13
Louisiana,	1 " 215	1 " $13\frac{1}{3}$
Arkansas,	1 " 265	1 " 24
New Mexico,	1 " 270	1 " $29\frac{1}{2}$

The first thing noticeable in this table is the general fact, that where cancer is most frequent there consumption prevails most, and *vice versa;* though as might be expected, there are exceptions to the rule. In the six New England States, cancer is the most abundant, causing from one fortieth to one eightieth of the deaths. In the same States, consumption also prevails more than in any other part of the United States. On the other hand, cancer is most rare in Arkansas and New Mexico, causing there only about 1 death in 270; and in strict accordance with this is the fact, that these two States are likewise freest from consumption. It thus appears that cancer is more than four times as frequent in New England as in Arkansas and New Mexico. A careful study of this table shows that two climatic conditions affect these diseases, viz., latitude and proximity to the sea. To illustrate this fact it is easy to observe that, taking the Atlantic States, these diseases diminish very regularly from Maine to Georgia. If we take the inland States, the same effect follows, until you begin to approach the sea.

Michigan and Ohio have more of these diseases than Kentucky and Tennessee; but if you go south of this point the influence of the sea begins to be felt, and Alabama has more than Tennessee. In the line of States on the east bank of the Mississippi, the result is nearly the same. Wisconsin is more afflicted than Illinois, Illinois more than Tennessee, Tennessee more than Mississippi, and Mississippi more than Louisiana. Taking the west shore of the river, an analogous result is obtained. For consumption, the order of frequency is thus: Minnesota, Iowa, Missouri, Arkansas. South of Arkansas the sea again asserts its influence, and consumption increases as you approach the gulf.

In respect to cancer, the order should be inverted with regard to Iowa and Minnesota, Iowa having the most. The effect of the sea air is shown by the fact, that in the central mountain region of New Mexico there is less of these diseases than in any part of the United States, and that they increase as you approach the Atlantic or the Pacific. Thus, California has more of cancer and consumption than New Mexico ; and if we take an eastward course the result is the same, giving this series in the order of frequency, viz., New Mexico, Arkansas, Tennessee, North Carolina.

It is clear then that climate in some way produces cancer, insomuch as the sea-shore every where shows more of the disease than the inland regions, and the northern latitudes more than the southern. As New England has four times as much cancer, for her population, as New Mexico, it would seem that climate or some other local circumstance produces three-fourths of the cancers of New England. Does it not follow also from this, that not only consumptives but also cancer patients from whom tumors have been excised should be sent to Arkansas or New Mexico, where statistics show these diseases to be rarely developed? Might we not hope for great advantage from such a climatic change? Certainly climate is about the only thing yet proved to have any effect upon cancer.

It is singular that Arkansas and New Mexico, which are so much alike in the absence of these diseases, agree in nothing else except these two points, viz., a southern latitude and remoteness from the sea. Their other differences are great. Arkansas has a moist climate, New Mexico a very dry one. Arkansas is only a few hundred

feet above the sea-level, New Mexico is from three quarters of a mile to two miles above the sea in perpendicular height. The capitol, Santa Fe, has an altitude of nearly a mile and a half.

The following Table shows the comparative amount of Consumption in certain parts of Europe and the United States:

Proportion of deaths from consumption to 10,000 deaths from all known causes.

United States.	England	Scotland.	Ireland.	French Cities.	Frankfort.
1379	1232	1235	1244	1162	1977

by which it appears that the United States as a whole occupies a medium ground in comparison with Europe.—*Chicago Med. Examiner, Dec.*, 1866.

ART. IX.—*Inflammation of the Cavity of the Tympanum, and its Relation to the Exanthemata.* By O. D. POMEROY, M. D., Lecturer on Aural Surgery at the College of Physicians and Surgeons.

THE object of this paper is to show the great frequency of ear diseases, which may be traced to a former attack of some one of the graver exanthematous diseases, more especially scarlatina and measles, and to give a sketch of the pathology, diagnosis and treatment of such cases.

It has been a question whether inflammation of the middle ear originated from an inflammation of the external auditory canal and membrane, thus passing inward, or from inflammation of the throat, passing outward by the Eustachian tubes. Able aurists have entertained opposite opinions upon this point. The weight of authority is, however, in favor of the view that the throat is the starting point of most of the inflammations of the middle ear, and especially is this the case in the impairment of hearing following the exanthemata.

In most of the exanthemata there is inflammation of the throat, and this, if allowed to go unchecked, will result in deafness, either partial or complete, and in very many cases this deafness becomes permanent. In support of this view we may quote a few authorities. Troltsch says:

"We often find evidences of this disease on the dead body in children; then we observe it as a participant and consequence of the exanthemata, measles, scarlatina, small-pox." After relating symptoms, he further says: "You will see that such symptoms as these occurring in an exanthema or typhus fever, and which can only be referred to the ear, will be little observed in consequence of the danger from the general condition of the patient, and in their beginning probably never referred to the correct source." Again: "Simple chronic catarrh occurring in typhus fever is quite common, as in scarlatina and roseola. Very few physicians can bring themselves to pay the least attention to the ear in the constitutional diseases of which we have been speaking, and they are the very ones in which its functions are most apt to be disturbed. Never are ear affections so com-

pletely disregarded and placed in the background as in those affections which confine a patient to bed."

Dr. Edmund Clark, of Boston, is quoted by the same author in these words: "So necessary is a careful attention to the ear during the course of an exanthema that every physician who treats a case without careful attention to the ear, must be denominated an unscrupulous practitioner." Dr. Troltsch again says: "Aural inflammations in scarlet fever and measles furnish the greatest number of the inmates of the deaf and dumb asylums, as well as a large portion of our cases of deafness of a high grade, in consequence of the readiness of the ear to participate in the exanthemata, and, as we must confess, from the complicity of the physician in neglecting the complication." Of 200 cases of ear trouble of all kinds that came consecutively under his notice, Mr. Wilde reports 28 as having been caused by some one of the exanthemata. Mr. Wilde further remarks: "I must again repeat what I have already mentioned, that practitioners do not sufficiently attend to the state of the ear in scarlatina, and that they neglect the application of remedies for a disease which is, even in the unhealthy condition in which the patient usually is at the moment, amenable to treatment, and omission of which has, in numbers of instances, led to permanent deafness, and, when the patient is young, to consequent mutcism." And again: "From the latest authentic Continental tables, those published by the Belgian government in 1847, we learn that in 1,892 cases of acquired muteism from all causes, 216 were from scarlatina, 80 from measles, and 28 from small-pox; from the American tables, out of 86 cases of non-congenital muteism, as many as 41 were from scarlatina; and, according to the investigations in which I have been engaged under the present Census Commission in Ireland, I find that of 394 cases of specified causes of acquired muteism, in 35 instances it arose from scarlatina, in 12 from small-pox, and in 7 from measles; in all, 54 from exanthematous otitis, or one in $7\frac{1}{3}$ of the whole; and I am inclined to think that this proportion is even less than what actually exists, for many cases were returned as diseases of the ear, or a discharge from the ear, acquired, no doubt, during some of those febrile disorders just specified. The most unmanageable cases of otorrhœa which I have met with in practice, those in which most destruction has taken place, and where the ossicula have been most frequently lost, have been the result of scarlatina or measles." Kramer, Lincke, Pilcher, and Harvey, of London, concur with the above.

The inflammatory process, as I have said, commences in the mucous lining of the throat, and extends up the Eustachian tube to the middle ear; if it is a light attack it soon subsides, leaving the mucous membrane slightly thickened, and doing little harm; but we often have an excessive thickening of the membrane, so great as to occlude the Eustachian tube, and to render the membrana tympani rigid, so that it vibrates feebly or not at all when impressions act upon it.

More than this, we may have an anchylosis of the chain of small bones, partially or entirely interrupting vibrations. Owing to an exhaustion of air from the middle ear, the membrane is often sunken by the external atmospheric pressure (there being no counter-pressure on the internal surface) to such an extent as to fall in upon the

promontory or internal wall of the tympanum. The inflammation not unfrequently extends to the mastoid cells, closing them, and producing a smaller vibratory chamber than is consistent with the integrity of the organ. The internal ear is often rendered useless, as a portion of the auditory apparatus, by the extension of inflammation into its complicated structure, disturbing the delicate equilibrium upon which its integrity depends.

A more common form of inflammation—namely, that which leads to perforation of the membrane and consequent otorrhœa, with ulceration of the contiguous parts—is more to be dreaded as its results are, in many instances, destructive to the hearing power, and, in the event of its extending to the brain, through the thin septa of bone at the superior portions of the cavity and mastoid cells, life itself may be endangered. Another result of the inflammation is impairment of the integrity of the auditory nerve. This is, undoubtedly, a not uncommon cause of deafness, as inflammatory affections of the optic nerve are of blindness. Like its congener, the optic nerve, it is subject to atrophy, to infiltrative products of inflammation, and to various other degenerations. By the excessive filling of the tympanum with inflammatory products, the membrane is often ruptured, or it is slowly ulcerated away, and we have the very common result of a purulent catarrh of the middle ear. If the inflammatory process is of the dry order, as in milder cases, we probably will not obtain a ruptured membrane, or any destruction of its substance; but it will generally be found thickened and infiltrated with inflammatory products, as lymph, fibrine, etc. The external appearance is usually a sunken drum, for the reason before assigned, and is indicated by undue prominence of the handle of the malleus, by alteration of the light point, lines and ridges, or by spots of fibrous or lymphy exudations traversing the superficies of the membrane, and an opaque appearance, often resembling ground glass, and very unlike the pearly gray translucency of the normal drum. It may be pertinently inquired, how are we to know that the middle ear is inflamed without seeing it? I answer, the inflammation of the membrane in its deeper layers, its sunken and altered appearance (which cannot be occasioned by external inflammations alone, or at least rarely), occlusion of the Eustachian tubes, deafness out of proportion to the visible symptoms, a feeling of fullness in the inside of the ear, and the history of the case, will determine whether the inflammation is mainly of the middle ear or of the drum-head itself.

In the differential diagnosis between diseases of the middle and the internal ear or labyrinth, we shall find greater difficulty. In treating a case of deafness with its concomitant symptoms, if we find, after a while, that the impervious tube is fairly opened, and that the middle ear easily inflates, and the membrane presents the normal elasticity, as evinced by its slight outward movement upon inflation; if there is no evidence of fluid in the cavity of the tympanum, and there still remains much or most of the former trouble, we may infer that the difficulty is in the internal ear. It will be seen, therefore, that the accurate diagnosis of diseases of the ear, which are out of sight, is difficult. It may, also, be asked, how are we to know of the commencement of any obscure aural affection, during an acute disease of considerable gravity, when the symptoms of the general af-

fection are much more noticeable and severe than the not easily observed symptoms of ear trouble, especially if the patient is, as is the rule, a child or infant? This is a question not easily answered. If the patient be a very young child, it tosses its head about, it starts in sudden fits of crying, or screams outright, as though suffering acute lancinating pain—symptoms which, it is true, are common to other than ear diseases. If attention is directed to the ears, there may be no signs of inflammation of the membrane of the drum, or tenderness about the auricle pointing to trouble with the external ear; the throat will, however, be found inflamed in the majority of cases of the exanthemata, although a large number may escape serious ear complications. It is evident, then, that there are cases in which the diagnosis cannot be made out with certainty; but it will be advisable in such to treat the patient as though the ear trouble had been detected. It may be replied, we have often observed deafness, pain in the ear, otorrhœa, and the like, supervening upon ear trouble, which was only temporary, the disease in many instances being self-limited—scarcely requiring treatment. This, undoubtedly, has much of truth in it; but suppose we treat all cases in this way, we have the result I have before stated, in very many instances. What cases are to be of the self-limiting variety, and what of the mischievous, cannot always be told beforehand. Thus we see the necessity of carefully treating every case of incipient ear trouble when occurring as the sequela of other diseases.

Treatment.—The indication in treatment is to subdue, by proper antiphlogistics, the *inflammation*, which is the sum total of the disease. The pain, which is so characteristic a symptom, may be relieved by leeching the external meatus, by pouring a few drops of Magendie's solution of morphine into the external canal, or by the continued application of warm water (which not only allays pain, but tends to lessen the inflammation). Dry or moist warmth may be applied to the auricle by means of cloths, or any convenient method. Poultices should not be long continued, as they predispose to otorrhœa by their macerating effect upon the canal and membrane. The old domestic remedy, a roasted onion, is often serviceable; it contains as well as retains a large amount of heat and moisture, which are so acceptable to an inflamed ear. Its stimulating properties may be theoretically objectionable, but scarcely so in practice; more than this, we must prescribe agents which are likely to be used. A certain class of patients would have no confidence in the warm water, and of course would not give it a fair trial, while on the contrary the onion would warmly appeal to their sympathies and confidence. A bag of hops, moistened and heated, applied to the auricle, is often serviceable. Stimulating applications, such as chloroform, laudanum, ether, camphorated oil, etc., should be avoided, as being too irritating to the part. The old practice of stuffing the ears with cotton or wool, so as to prevent the egress of every particle of secretion, is much to be reprehended. Air or cold is undoubtedly injurious to the organ of hearing when in a state of inflammation, and it would be proper, therefore, to apply a handkerchief or bandage loosely about the auricle. Counter-irritation behind the ears should immediately follow these means, and be continued until the symp-

toms have subsided, even if lasting several weeks. In a case where the major part of the inflammation occupies the Eustachian portion of the cavity, and quite likely of the tube itself, we would expect a greater relief from the application of the counter-irritant to the throat rather than to the mastoid region, it being nearer to the diseased part.

Inflammation of the throat, of course, is always to be promptly attended to, and if the Eustachian tubes be closed, they must be opened by the common method of forcible expiration while the mouth and nostrils are closed, or by Politzer's plan, which is as follows: A rubber air bag of from 8 to 10 oz. capacity is attached to a flexible tube tipped with a nostril piece; the patient is asked to hold a little water in the mouth; the surgeon applies the tube to one of the nostrils, carefully closing the other; he then directs the patient to swallow, during which act air is forcibly expelled from the air bag and passes up the Eustachian tube to the cavity of the tympanum. The muscles concerned in deglutition by their contraction cause the faucial extremities of the Eustachian tubes to open, thus admitting the more free passage of air.

Inflating the tympanic cavity with air, vapor of water, or medicaments in a gaseous form, has from time immemorial been by a certain number of the profession regarded as appropriate treatment. In the acute stage of this affection, although many recommend it, inflation of the cavity seems to me a very painful and useless procedure. What advantage do we hope to derive from inflating the cavity of the tympanum? I answer: 1st. To render pervious a more or less impervious Eustachian tube; I do not refer to a stricture, for nothing but an Eustachian bougie will dilate it, but where there is some temporary obstruction, such as mucus, pus, etc. 2d. To press outward the sunken drum-head, and by such movement of the membrane to break up any adhesions which may have formed between the membrane and the internal wall of the cavity of the tympanum. 3d. To remove secretions from the drum, either through a perforate membrane or by the Eustachian tube, from the elasticity of the air forced into the cavity. 4th. To produce the specific *effect* of the injection upon the mucous membrane lining the drum, as in the case of the medicated air, vapors, gases, etc., although air alone may act curatively. This inflation should be continued daily until the indications for so doing no longer exist. With many medicated vapors or gases, Politzer's plan, with a Buttles' inhaler, adapted to the nostril, is the most convenient.

This inhaler, devised by Dr. M. S. Buttles, of this city, consists of a hollow cone, in which a sponge is placed, being first moistened by the medicament, and open at either extremity to admit of the free passage of air through it, which, of course, becomes more or less laden with the medicament. (Tr. iodine I have usually used in this apparatus, although chloroform, ether, aqua ammoniæ, ol. terebinth., tr. camphor, etc., may be used.) This combination was first adopted, I believe, by Dr. Roosa, of this city. If the case cannot be managed except by the catheter, a flask must be adjusted to it, from which the gas or vapor is formed. The muriate of ammonia, heated to about 212° Farenheit, is usually preferred, which is forced into the ear by an air pump or rubber bag. If the catheter alone fails to render

pervious the Eustachian tube, a bougie may be passed through the catheter into it, so as to dilate any stricture which may be present, and break up any adhesions within the cavity. This is, however, very difficult, and in many instances hazardous, as the ossicula have been disarticulated by the passage of a bougie into the cavity. Moreover, it is a very difficult manœuvre, and should be attempted only by a skillful hand. I hardly think it proper to attempt the air bath until the acute symptoms have subsided, for pain and aggravation of the trouble may be occasioned by adding to the intra-aural pressure already existing; and it is comparatively harmless for the tube to remain impervious for a limited period, as nature is prone to open it by means of coughing, sneezing, etc. (The object of the aëriform medicament, of course, is to act on the inflamed mucous membrane.)

I do not know that any constitutional treatment is necessary beyond attending to the secretions, allaying any undue febrile movement, etc. Mercury I am inclined to believe to be comparatively useless in any stage of the disease. As most obstinate cases of aural disease of this character require tonic and supporting treatment, we see in this a contra-indication for the use of mercury, unless we admit the tonic effect of "small alterative doses of the bichloride."

When the membrane is ruptured, a persistent otorrhœa is the consequence; and is best treated by a two gr. solution of acet. plumb. or tannic acid dissolved in glycerine, at the rate of from ten to sixty grains to the ounce; or alum, sulph. zinc, and other astringents of this class, of about the same strength as the acetate of lead solution. Of course the utmost cleanliness, by means of syringing with warm water, must at all times be insisted upon. A granular surface may be touched by nitrate of silver of sufficient strength to whiten the part, which is best done by using a solution with a small camel's hair pencil, or a bit of cotton rolled upon a small stick, or the solid nitrate may be fused upon a probe, and thus applied. Larger granulations may be cautiously touched by nitric acid. Even at this stage it may be proper to blow air through the Eustachian tubes, both to remove secretion and keep the tube pervious. In old cases, which have resisted other treatment, stuffing the cavity with cotton wool has been practiced, on, perhaps, a similar theory to the cure of indolent ulcers of the leg by strapping. I have used it in quite a number of cases, and it seems worthy of further trial. In order to succeed care should be taken to first perfectly cleanse the part by introducing small pledgets of cotton, and then to pack the wool carefully into the cavity by means of forceps and probes, avoiding the filling of more than the cavity, as pain would be occasioned by extending the stuffing into the canal. This may remain one, two, or three days, according to indications. If there is much discharge, it will not be judicious to allow it to remain so long; or, if pain is produced, it should be removed at once. I have generally found great comfort to result from this operation.—*New York Medical Journal, Jan.*, 1867.

Art. X.—*On Tabes Dorsalis and Progressive General Paralysis.*

From careful examination of recent cases, Westphal finds that in a certain number dragging pains, in the legs chiefly, had preceded or accompanied the commencement of paralysis and mental

weakness; and that in these, at the same time, the power of standing and walking, as far as it still existed, became materially less when the eyes were closed, or was even totally lost, the patients, when they made the attempt, falling down on the spot. From his cases the author comes to the following conclusions:

(1) There is an affection of the spinal cord (gray degeneration of the posterior columns), which anatomically is quite the same as that which exists in tabes dorsalis, and which, in its subsequent course, leads to disorder of vision. (2) In general, this resembles the progressive general paralysis of the insane, both in the kind of delirium and of the paralytic symptoms, as also in the emaciation. (3) It is, however, distinguished from the latter by the circumstance that the patients, when they close their eyes, are unable to stand or walk without tumbling down, and that the disorder of articulation belonging to general paralysis is quite wanting. (4) The palsy of the bladder and of the extremities precedes for a long time the mental derangement (contrary to what occurs in the progressive paralysis of the insane). (5) No disease of the cerebral substance analogous to the gray degeneration of the columns of the spinal cord was discoverable. The latter extends pretty uniformly over the whole extent of the posterior columns as far as the floor of the fourth ventricle, where it only occurred in patches. The nature of the cerebral disease is unknown, but appears to be accompanied by hydrocephalus internus.

Sappey relates the result of an inspection of the body of a man, aged from forty to forty-five, who died with the symptoms of *ataxie locomotrice progressive*. There was no morbid change in the brain or cord, except in the lumbar portion of the latter. The posterior columns here were of a grayish color, the posterior roots were of a grayish red, much thinned, and resembling bundles of vessels, except at their entrance into the cord, where they were flattened. The anterior roots and columns were normal. In the grayish parts the nerve-fibres were found partly quite devoid of their contents, partly containing them only here and there, partly quite filled with them.

Friedrich gives an account of six cases having the symptoms of *ataxie locomotrice progressive* or tabes dorsalis. Three proved fatal from typhoid fever. In these the pia mater all along the posterior columns was opaque and thickened, adherent to the cord and to the dura mater by narrow bands. The ligament. denticulat. was similarly affected as well as the pia of the lateral regions of the cord. The posterior columns were atrophied as high up as the lower half of the fossa rhomboidalis; they had a translucent grayish appearance, and were in two cases firmer than natural. The change was most advanced in the lumbar region, where it had extended to the lateral tracts. The posterior median fissure was obliterated. The posterior roots were thin, wasted, and stiffish; the anterior normal. In the posterior the continuity of fibres was not interrupted, there was no fatty degeneration; the axis-cylinders were preserved, but the medulla was coagulated, and there was much wavy connective tissue between the fibres. The hypoglossal nerves were in the same state, but there were also numerous corpora amylacea in the connective tissue. Friedrich refers these changes to a chronic septomeningitis. The influence of hereditary tendency is remarkable. The six cases

belonged to two families; their fathers were drunkards, and had certainly begotten their children while intoxicated. Two were male, four female. The duration of the disease varied from nine to twenty years. All treatment was unavailing. Friedrich infers from his cases that the posterior columns do not conduct sensory impressions, but are concerned in the coördination of movements; and further, as the lower limbs were not materially wasted, that the centres regulating their nutrition cannot be intimately connected with the posterior columns, as well as that the mere non-exercise of the muscles (which extended in these cases over years) cannot be essential to atrophy.

Remak distinguishes different forms of the disease, according to its seat. Tabes cervicalis is characterised by eccentric pains, small immovable pupils, and the long duration of the motor disorders. The primary change is a derangement of the nutrition of the nerve-cells; myelitis occurs secondarily. Tabes lumbalis is sometimes an independant affection, sometimes united with a unilateral lumbo-sacral neuritis. Rheumatic and arthritic influences give rise to deranged circulation in the cord, which is the fundamental evil. In tabes dorsalis the power of walking and the functions of the urinary and genital organs and of the rectum are more evidently impaired, and the eccentric pains are very severe. Tabes basalis usually commences with deranged action of the muscles of the eye, and may be therefore confounded with cerebral tumor. Disorders of vision and anæsthesia and paresis of the hands ensue at a later date. Tabes cerebelli is very rare, and is characterised by extreme unsteadiness of gait as almost its only symptom, and sometimes by amblyopia. Pain on pressure over the spinous processes occurs only in tabes lumbodorsalis, and is a favorable prognostic sign, as indicating a still existing myelitis. All forms of tabes may originate in syphilis. The constant galvanic current is the most effectual remedy, and is most available when myelitis is actually present. When there has been primary degeneration of the nerve-cells, when the disorder is complicated with the results of spinal meningitis and growths of connective tissue, galvanism is contra-indicated. It is more successful in tabes dorsalis and lumbalis than in the other forms. The induced current is injurious. Ramak has not found nitrate of silver to be of much efficacy.

Isnard regards the disorder as a neurosis—(1) because it alternates in the same family with other nerve disorders; (2) because all its symptoms are functional derangements of the nervous system; and (3) because all the remedies which have hitherto been found most useful are those which are advantageous in other neuroses. The result of autopsies are not a valid counter-argument, for on the one hand there are cases in which no morbid change has been found, and on the other the presence of anatomical alteration does not exclude the idea of a neurosis. The want of coördination in the movements is not the result of a local disease in the cord affecting the seat of coördination (probably the posterior columns and the gray substance), but of disturbances of the harmonic action of individual parts of the cord together. This consists, according to Isnard, in a *dissimilar* derangement of the muscular sensibility. So long as the muscular sensibility is only uniformly too weak or wholly

absent, coördination of the movements is not lost, though in the last case the aid of vision may be necessary. If, however, the sensibility is too delicate in some parts and too dull in others, then there is disharmony in the movements, which the sense of vision can only partially correct.

Benedikt enumerates as the causes of these disorders —(1) alterations of the sensibility; (2) disorders of the equilibrium of antagonist groups of muscles; (3) loss of the power of localizing movements; (4) want of proportion between the normal volitional stimulus and the excitability and conducting power of different parts of the nervous system; and (5) general disturbance of the functions of the brain, without complete loss of any of them. With regard to the affection *ataxi locomotrice*, he views it as made up of two factors, viz., loss of muscular consciousness (in acting) and loss of appropriate coördination of the movements. Ataxia may, however, exist without the loss of muscular consciousness or of cutaneous sensibility. Defective coördination, he remarks, is not a rare symptom. It is met with in many partial paralyses, and is produced by the volitional stimulus acting unduly on the antagonist muscles, when those which should execute a movement are incapable of contracting properly. The antagonist muscles are always set in play to a certain extent, for the purpose of regulating the action of the others. To produce ataxia, it is by no means necessary that one whole group of muscles should be paralysed completely. Any affection which impairs the functional excitability of the central nervous apparatus may produce ataxia, and so may any disorder of the conducting nerves, or of their terminal extremities at the periphery, provided they are non-uniformly affected. Static spasms (v. Romberg, vol. ii, p. 156) afford most striking instances of cerebral ataxia, while peripheric is very common in paretic conditions of individual muscles of the eye. Spinal ataxia is characteristic of tabes dorsalis.—*Year Book, Med. and Surg.*, 1863.

Midwifery and Diseases of Women.

ART. XI.—*Climacteric Menorrhagia.* By PROF. B. F. BARKER. Reported by E. S. Belden.

IN the early part of my practice, and for many years, I met with a class of patients, from forty-three to forty-five years of age, who suffered from a constant flow of the menses, about two weeks in every four, a constant draft upon the genital organs, which was accompanied with great disturbance of the nervous system, and of the general health. I examined for polypi, fibrous tumors and cancer, with the greatest care. I found it to be a peculiar menorrhagia, occurring especially at that period of life, when the functions of ovulation and menstruation were about to cease. I could find no organic disease upon which it appeared to depend. I consulted all the works to which I could gain access, both in our own and the French languages, with especial reference to this point ; but found nothing

satisfactory to aid me in its treatment. I find that, even at this time, none of our most recent authors, as Scanzoni, Bennett, McClintock, West, and Huett, or of the French authors, make any especial allusion to this peculiar type of menorrhagia, which I call the *climacteric menorrhagia.*

I feel assured that in active practice, you will frequently meet with these cases, and will find the directions of authors vague and unsatisfactory, and the proper management of the affection very perplexing.

Climacteric menorrhagia occurs in the plethoric and the anæmic, and I believe it is no more liable to occur in the one habit of the system than in the other. It continues for a longer or shorter time, according to the improper or proper treatment of it. It is not an affection susceptible of arrest or cure by any constitutional measures. The ordinary styptics, hæmostatics and astringents have very little influence in controlling it. Churchill, in speaking of the treatment of this form of menorrhagia, recommends ergot as especially valuable in that class of cases where it is associated with an enlarged or hypertrophied uterus. Other authors recommend a great variety of styptics; but none of them speak with any very great assurance regarding the effects of their remedies.

When this menorrhagia occurs in those of full habit, and continues, as it often does, two, three, or more years, the patient is reduced from a plethoric to an anæmic condition. It frequently renders the condition of the general system such that it is incapable of bearing, with the ordinary normal resistance, the shock of the little accidental injuries which may arise.

It sometimes appears in the form of violent exhausting hæmorrhage, to an extent almost equal to that which may occur in the puerperal state; this to be followed by an arrest of the menstrual function for two or three months, or longer, when a second hæmorrhage takes place, and so on. The system is thus reduced to a condition of anæmia, from which it arises only to be again brought down by this rupture of, and excessive hæmorrhage from the capillary vessels of the uterus. In other cases the drain is less profuse and exhausting, and occurs much more frequently. These are no fancy pictures, but what I frequently meet with in actual practice.

A few years ago, I came to the conclusion, that this form of menorrhagia was due to no peculiar condition of the general system, was caused or accompanied by no organic lesion, and was uninfluenced by constitutional treatment. I then began to reflect, that the internal surface of the uterus, during the whole period of what is termed menstrual life, is subjected to a constant process of formation and development of the mucous membrane and its follicles; the decidual membrane, its exfoliation and reproduction, occurring to a certain extent at each menstrual period, and at each period of gestation and parturition, to a full extent; that this process might be interrupted, and that it was possible and probable that these forms of menorrhagia were due to the condition of the internal surface of the uterus. I now believe that this form of menorrhagia is due to an imperfect cicatrization of the lining membrane of the uterus, following the exfoliation which occurs at each menstrual period, and associated with increased vascularity of this membrane. In

other words, I believe it is caused by a lesion of the internal surface. I commenced treatment in accordance with this belief, and its success convinces me that the theory is sound.

I have, within a few years past, conversed with certainly the most eminent uterine pathologists now living in different parts of the world, and when the proposition has been fully stated to them, it has been accepted; and the treatment I propose is now being practised in Edinburgh, London and Paris, as well as by many in our own country.

Tepid water injected into the cavity of the uterus, in its normal, undeveloped state, even in quantities of ten or fifteen drops, causes the most intense uterine colic. It is infinitely more tolerant of solid substances than of fluids, even the most bland. The presence of fluid seems to excite uterine contraction, and the uterine muscular tissue not being developed, these attempts at contraction produce excessive pain. But in these cases of profuse uterine hæmorrhage, where the cavity is enlarged and its capacity increased, half an ounce or more of fluid may be thrown in and retained by the then tolerant uterus. Since Dr. Squibb, to whom the profession is deeply indebted, introduced the solution of the persulphate of iron, I have used this exclusively in the cases of sudden and excessive hæmorrhage; where there is consequently more or less blood accumulating in the uterus. In these cases I use an india-rubber syringe of the ordinary form for uterine injections. If the injection is thrown in with any force, it will be thrown out at once. The object is to have it retained in the cavity of the uterus, to exert its styptic influence, which is to form a firm coagulum, thus blocking up the open mouths of the vessels, and also to astringe the coats of the vessels themselves. So I introduce the syringe, and with great gentleness inject from twenty to forty drops of the persulphate of iron. I have never, in a single instance, made use of this remedy without its being immediately followed by a complete and entire cessation of hæmorrhage, and no recurrence for some days afterward. In these forms of dangerous, profuse and sudden hæmorrhage, this treatment is infinitely more successful than any other measure.

The second form of menorrhagia is that which occurs at the climacteric period, which is much less profuse, but continues from two to three weeks an exhaustive drain upon the system. In this form my object is to carry into the cavity of the uterus, some substance which will produce rapid cicatrization of its lining surface. The agent which I have been using exclusively for this purpose, for five or six years, is a solution of sulphate of zinc in glycerine. The combination is

℞	Zinci sulphat.	℥j. M.
	Glycerin.	f.℥ij.

I find that a drachm of glycerine will dissolve an ounce of the sulphate of zinc; but in the combination I have given you, the proportions are such as to give it the proper consistence.

The instrument I use for this purpose is a hollow tube perforated in every direction at its extremity, the whole shaped like an ordinary female catheter, in which is fitted a piston. The instrument is filled sufficiently by partially withdrawing the piston, and dipping the perforated extremity into the ointment, which is then injected

into the cavity of the uterus, by the use of the piston. In regard to this treatment, I could give you a great number of cases in which the patients, in a state of extreme exhaustion, have been subjected to a great variety of constitutional and local treatment, but without effect, until by means of this simple treatment, the drain upon the system has been arrested. In these cases of menorrhagia, I have not, in a single one, had to apply this method more than twice.—*Phil. Med. and Surg. Rep., Jan.* 5, 1865.

Art. XII.—*Turning.* Abstract of a Memoir by Dr. J. Braxton Hicks.

UNTIL within the last few years, in effecting version of the child, the whole hand was introduced into the uterus, in order to seize the part to be brought down. The unavoidable delay occasioned by this mode of practice, and the suffering often induced by it, proved in many cases grave objections to its employment. Dr. Collins and Dr. R. Lee have pointed out that, in some cases of transverse presentation, it is not necessary to pass more than two fingers into the os uteri in order to seize the knee. But in Germany it has been shown for some years past by Wigand, Mattei, Stoltz, Martin, and Carl Esterle, that it is possible to rectify entirely from the outside abnormal positions of the fœtus, and by the last two professors it has been employed in many cases. But Carl Esterle seems to have principally adopted this method some weeks before labor was expected, and Martin insists in its use—1st, that immediate delivery be not called for; 2d, that there be a capacious pelvis; 3d, *no active pains;* and 4th, that the child be living. Now it is evident that these conditions cannot be granted, if we wish to practice this method in the midst of labor or in urgent cases. Indebted, then, to the Germans for the discovery of the mobility of the fœtus from the outside, and to our own countrymen for the plan of pushing on the child by one or two fingers through the os, the author proceeds to show how, by the simultaneous application of these two plans, each acting upon opposite ends of the fœtus, a degree of certainty and celerity may be obtained, of which each alone is entirely incapable. The principles upon which the author's plan is based are—1st. The mobility of the child in utero, varying according to the activity of the uterus. 2d. The fact that in transverse presentations the knee is almost immediately over the os uteri, and that the foot is close to the breech, and will be found upon it when this presents. 3d. The ease with which, in transverse presentations, the head can be directed either back to the os or to the fundus of the uterus. Podalic version of the child, in ordinary head presentations, is effected by pressing on one side of the breech at the fundus by a series of gentle palpations, or by a gliding pressure on the abdominal parietes, so as to follow up the fœtus as it recedes under the impulse, by the continuance of which the breech is brought to the middle of the uterus on one side; at the same time the head is pushed up by one or two fingers in the os, so as to raise it above the brim to the middle of the

uterus on the other side. The child being thus more or less transverse, the knee can, in most cases, be easily seized; if not, the breech must be depressed still more, and the foot secured. Turning will sometimes be simplified if, as soon as the head is above the brim, we pass the outside hand beneath it, and push it up from the outside alternately with the depression of the breech. If the os will only admit one finger, the foot can yet be retained by pressing it with that finger against the anterior part of the os, because here the pubes will assist in supporting the pressure. Supposing the position cannot be distinctly made out, if the head be placed at some distance from the centre of the os, then the head should be pressed to that side to which it inclines, and the breech to the opposite; but if the head be nearly central, and the position be not known, then the breech should be pressed towards the right side and the head to the left. In the early stage of transverse presentations the case will generally be the easiest of any requiring version, and here the external depression of the breech is so effective that the necessity for introducing the whole hand is, in most cases, entirely avoided; but where the arm is prolapsed beyond the vulva, and the thorax jammed into the cavity of the pelvis, the old method should be adopted, though even in the worst cases the external depression of the breech is of great advantage. When the arm has not prolapsed so far, the attempt should be made to return it on to the chest of the child, and then to push the child onward in the direction of the head, depressing the breech externally if podalic version be intended; but since the greatest value of this mode is the capability of version long before it can be performed by any other method, extreme cases will seldom occur to a vigilant practitioner. Cephalic version, which adds to that of Wigand's the more extended use of the inner hand, and which the author has found most useful in some cases of transverse presentation, is thus effected: With the left hand in the vagina, as in podalic version, and the right over the uterus, the shoulder is first pushed on in the direction of the feet by the inner hand, while at the same time pressure is made on the cephalic end of the child, which will bring the head down close to the os, and allow it to be secured between the two hands. The head is then placed directly over the os, and any tendency to face presentation at once rectified, while the external hand is retained on the head till the uterus has moulded itself to the form of the head and shoulders. The case with which cephalic version was effected in this way in one of the cases related by the author was such that only half a minute was required; but if there be any difficulty in this, podalic version is still feasible. All that is required is to place the hand on the opposite end of the child and depress it, pushing the head and shoulder from within, while the fingers in the os are ready to hook down a knee or foot; and, as a rule, in neck and transverse presentations, where all the conditions are favorable, cephalic version should first be attempted, and, failing this, podalic version may be effected. The advantages of early turning, whether for a cephalic or podalic presentation, in cases of neck, shoulder, and transverse presentations, will be manifest, while it is not less valuable in cases of convulsions *ante partum*. Here the introduction of the hand into the uterus is frequently attended with much danger, while by this method we shall be able to take ad-

vantage of the earliest dilatation of the os, and assist it by gentle traction upon the leg, which will thus act as a dilator. In placenta prævia the easy application of this mode of turning is shown by the author in a series of eight cases. It is especially valuable in those cases where, with great hæmorrhage, the os is yet so little dilated that not more than one or two fingers can be introduced. Here the author's practice is to rupture the membranes when the foot arrives at the os, and then, *without any force* to draw the foot and leg through. By exerting gentle traction *with merely the weight of the arm*, the leg is retained and forms a good plug, while valuable time is gained to rally the patient, for the os to dilate, and the pains to come on. Except in cases of internal hæmorrhage, the author waits for the natural efforts to deliver, and has never seen any hæmorrhage, internal or external, after the leg has been brought down. Should the placenta lie more or less completely over the os, the membranes will generally be found by detaching the placenta on that side which is least thickened; otherwise the method recommended by Dr. Barnes, of detaching the placenta all round till the membranes are reached, is the best. The advantage of turning under chloroform is very marked, but at least half the cases related by the author were performed without, and were amongst the most successful. Twenty cases are related, including eight of placenta prævia, as illustrative of the author's mode of version; all were cases of great urgency, and in most, the old method of version would not have been practicable. In one case of profuse accidental hæmorrhage, transfusion was employed with so good a result, that version was performed in half a minute, and delivery accomplished, but the patient, unfortunately, died from exhaustion half an hour afterwards.

The advantages of this method of turning are summed up by the author under two heads—(*a*) those of avoidance, and (*b*) those of acquisition.

(*a*) We avoid the addition of the hand, and perhaps of the arm to the uterine contents, with the present and future chances of irritation caused by it; the entry of air into the uterus; the liabilty to rupture of the uterus, the pressure being opposite to that of the ordinary method; much of the pain and distress felt by the patient in the old plan; much of the fatigue and distress felt by the operator by the pressure of the uterus during contractions, and the increase of collapse by the presence of the hand in cases of severe exhaustion.

(*b*) On the other hand, we shall gain—1, The opportunity of correcting malpresentations as soon as they are recognised; 2, the capability of early delivery; 3, the opportunity of using the child as a compress in placenta prævia; 4, the capability of version at a time when the old method is impracticable; 5, the opportunity of producing cephalic version much more readily than formerly.

The difficulties liable to occur in performing this plan of turning are—*first*, the doubling up of the fœtus upon itself, as in protracted transverse presentations, especially where the arm has been long prolapsed. If to this condition be added a very active uterus, the difficulty is still further increased, and here the breech should be depressed as much as possible externally, and the hand introduced as far as is necessary to reach the knee, which, by the effort, has generally been brought down at least half the distance towards the

cervix. *Second*, The firm and active contraction of the uterus upon the fœtus. Here chloroform should be inhaled to its full extent, and should it suspend uterine action for only a few minutes, in the majority of cases version may be effected without the hand in the uterus, except in the first mentioned cases. A *fourth* difficulty may be the excessive mobility of the child, which is seldom met with in labor at full term, but will be found in premature labor, especially if the child be already dead; and this difficulty may be increased by *excess of liquor amnii*, which, however, may at once be removed by rupturing the membranes. *The operation should be performed methodically, and without any confusion or hurry.* No indications of metritis have ever been seen by the author after this plan of version, and if such a sequel threaten, the pressure required, and the kind of motion to be produced, will not have been understood. Dr. Hicks believes that the above mode of version will succeed in 75 per cent. of all the cases requiring it, and the earlier it is performed the greater will be the resulting success.—*Year Book, Med. and Surg.*, 1863.

ART. XIII.—*The Pulse in the Puerperal State.* (Archiv. Gén. de Méd., Sept. 1863.)

M. BLOT arrives at the following conclusions: (*a*) Healthy lying-in women in general have a pulse which has become more or less slow. (*b*) Three series of observations, made in the Clinical Institution and in the Hôtel Dieu, prove that the frequency of this phenomenon necessarily alternates with the state of health of the patient. In the physiological condition, the slowness of the pulse seems to be a general fact connected with the emptying of the uterus. It only varies in degree. It is not connected with the disposition, peculiar to many women, of always having a slow pulse, for those women on whom the observations were made possessed the ordinary physiological frequency of the pulse, except during the puerperal period. (*c*) The degree of slowness of the pulse varies greatly. In 3 cases it fell to 35 pulsations in the minute: most frequently it varies between 44 and 60. From 21 observations the author concludes that food exercises no influence upon it. (*d*) This condition is more frequently found with multiparæ than with primiparæ, which may be explained by the greater frequency of puerperal attacks among the latter. (*e*) The duration alternates between a few hours, and 10 or 14 days; generally, the longer it continues the stronger it becomes, presupposing that the patient continues well. (*f*) The course is almost always the same. It begins generally in the first 24 hours after birth, then becomes always more considerable, remains uniform for a time, and again gradually disappears. It often exists even very distinctly at the time when the milk-fever—falsely so called—is said to come on. (*g*) The duration of the labor seems to have no influence upon the development and the degree of this condition of the pulse; on the contrary, the slightest pathological condition prevents its occurrence and removes it. It is observed after miscarriages, premature labor, and labor at the full time; and after

natural and artificial delivery. Even violent after-pains do not remove it, but the same is not applicable to any but slight hæmorrhages. (*h*) Position has a marked effect, and a very considerable change occurs when the patient removes from the recumbent into the erect position. (*i*) This slowness of the pulse indicates a very favorable prognosis. It is only found with women in perfect health. In a hospital its frequent occurrence indicates an excellent state of health, while its rare occurrence should cause us to fear the appearance of diseases and epidemics. (*k*) The cause of this slowness of the pulse does not lie in a nervous exhaustion : the investigations on the pulse which the author made in conjunction with Marcy, much more clearly point to its connection with an increase of the arterial tension after birth.—*Year Book, Med. and Surg.*, 1863.

Materia Medica and Pharmacy.

Art. XIV.—*Determination of Santonine in Santonine Lozenges.*

THE following method is recommended by Reickher: Use one end of a perfectly dry glass tube, about 2 feet long and containing about 60 cubic centimetres, with a plug of raw cotton; on this plug place a weighed quantity of the lozenges to be tested in powder, and then another plug of cotton. Connect this tube by means of a cork with the neck of a small flask which has been previously dried at 100° C. and weighed. Pour chloroform upon the powder in the tube, and allow it to filter through into the flask—1 or 2 lozenges of ordinary size require about 1 ounce of chloroform. This fluid dissolves the santonine, but not the sugar. After it has filtered through, a few drops more may be added and allowed to filter into a watch-glass—this watch-glass being allowed to remain in a warm place until the chloroform has evaporated. No stain will be left if the extraction of the santonine has already been complete. When this is ascertained to be the case, the chloroform may be carefully distilled off from the little flask, and the latter again dried at 100° C. and weighed. Its increase of weight gives the amount of santonine present.—*Fresenius—Zeitschrift für Anal. Chem.* [J. W. M.]

Art. XV.—*On the Detection of Alcohol and Ether in Chloroform.*

F. J. OTTO recommends, as a means of detecting alcohol in chloroform the addition to the latter of a little fragment of chloride of calcium, so as to remove any traces of water, and then the addition of iodine.

Iodine colors pure chloroform of a beautiful violet-red, but if alcohol be present, the color varies from orange-red to brown.

For the detection of small quantities of alcohol, C. D. Braun places 2 or 3 cubic centimetres of the suspected chloroform in a test-glass,

drops in a crystal of fuchsine, of about a twelfth of an inch in diameter, and shakes the fluid. The little crystal of fuchsine swims about upon the surface of the chloroform, appearing of a beautiful blue color by reflected light on particular edges and faces.

If the chloroform contain but a trace of alcohol, the fluid is colored of a distinct rose or carmine red, varying in intensity with the amount of alcohol present. On the other hand, if the chloroform be chemically pure, the fuchsine gives it only a pale reddish tinge, something like that of a moderately concentrated solution of chloride of manganese.

Ether may be detected by the iodine test of Otto, as given above, but not by the reaction with fuchsine.

Methylic alcohol (wood spirit) comports itself like ordinary alcohol in relation to both tests.—*Fresenius—Zeitschrift für Anal. Chem.*

[J. W. M.]

ART. XVI.—*Benzine in Hooping-Cough.*

THE object for which children are advantageously carried to gas-works, of diminishing the intensity and number of the attacks of hooping-cough, Dr. Lochner obtains more conveniently by administering benzine in small doses internally, and likewise sprinkling it cautiously over the bed of the patient. A number of drops are given in a teaspoonful of water several times a day. Dr. Lochner has treated his own child, 21 months of age, successfully in this way. The premonitory symptoms lasted eight days; the disease itself only six days. The attacks were very violent, especially in the evening at bedtime; but their number never exceeded five or six in the twenty-four hours, and they did not last so long as in the cases of other children. He gave his child from ten to fifteen drops during the day; and as soon as it had fallen asleep, he poured some drops of benzine on the bed. This outward use of the drug requires the ventilation of the room to be specially attended to.—*Gaz. Méd. de Paris*, Oct. 20th, 1866.—*Br. Med. Jour.*, Dec. 29, 1866.

ART. XVII.—*Grindelia Robusta in Asthma.*

THE following case has lately fallen under our observation: A reverend gentleman, well known in San Francisco, had been a victim of asthma, in its most virulent form, for about six years. His health gradually yielded to the disease, until at length he felt almost prepared to succumb, and to abandon all prospect of further service in his vocation. For a long time he had generally passed the night in his chair, with the torture usually incident to his disorder. He had exhausted the ordinary round of remedies, finding some relief from the paroxysms in the inhalation of chloroform. At this juncture a friend sent to him a quantity of syrup prepared from the herb above named, with the assurance that the person sending it, and a number of other individuals, had been cured or greatly

benefited by the use of it in asthma. Without attaching any importance to the article, or anticipating any benefit from it, he took a wineglassful of the syrup on going to bed—not however until he had consulted his physician, Professor Ayres, who permitted its use merely as a safe experiment. That night, for the first time for many months, he slept soundly, and was amazed on waking to find that the night was past. This was in April last, and he continued the medicine regularly in the same manner, with the same results, for four months, when a slight return of the disease took place, after unusual exposure and fatigue. But he has not spent one night out of bed since beginning the use of the medicine, now seven months ago. His general health and strength are greatly improved, and he is now capable of performing the most arduous duties incident to his profession, though frequently threatened with returns of his malady. On the threatened approach of a paroxysm, indicated by a sense of constriction and wheezing, he immediately resorts to the medicine, always with relief. Besides this, he takes regularly about a wineglassful of the syrup every night. Hitherto he has suffered most severely late in autumn, prior to the rainy season. But this year he has passed through that period with comparative comfort.

The syrup is prepared from a strong decoction of the herb, in the usual manner, a small quantity of gin or brandy being added to prevent fermentation. It is not unpleasant to the taste. It has no apparent effect on the stomach, bowels, kidneys or skin. The only sensible effect is on the pulmonory organs, promoting expectoration.

The Grindelia Robusta grows extensively through the State, mostly in hilly situations. It throws up a straight, unbranched stem, one or two feet in height, with short, rather rigid leaves, and a spherical head of flowers on the top. It belongs to the composite order of plants, the flowers having white rays about half an inch long. It may easily be known by a drop or two of a resinous fluid, which looks precisely like milk, and which is always to be seen attached to the calyx. In the mouth it yields a balsamic taste, and the odor is aromatic or balsamic.—*Pacific Med. and Surg. Journal and Press, Dec.*, 1866.

Art. XVIII.—*Bromine and its Compounds.* By J. H. Hollister, M. D., and Prof. Chicago Med. College, Chicago.

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I. ITS natural history, in brief, is this: Bromine was first discovered by Balard, in 1826. He obtained it from that portion of sea water from which common salt had been crystalized, and it was first named by him "*muride*," from "*muria*," *brine*. When Gay Lussac took it in hand for examination, he conceived it to be the sum total and aggregate of all villainous stinks, and persuaded Balard to call it "*brome*," or bromine, from the Greek "*bromos*," *the stink*. Neither of these men being familiar with the Chicago River, they deemed the bantling justly named.

So strong are its affinities, that it is never found in a free state, but,

in various combinations, may be derived from both the mineral and organic kingdoms. In the organic world, it is obtained from many of the marine plants of the Mediterranean, in the stony concretions of sea sponge, and, especially is it to be noted, as one of the constituent elements of "*cod liver oil.*" Its inorganic combinations are too numerous to mention. In the waters of the Mediterranean, the Baltic, and the Dead Sea, and in very many of the salt springs of the old and new world, it is found in greater or less abundance. The German springs of Kreusnach are especially rich in it, and from this source it was formerly mainly obtained. More recently, it has been found in the salt springs of Salina; and in still greater abundance, so as now to mainly furnish the market, from the salt springs in Pennsylvania. Its main combinations in these waters are with calcium and magnesium. Of the manner of its preparation I shall not speak.

II. *Physical Properties.*—Bromine, in its pure state, is an exceedingly volatile liquid; of a dark red color; pungent odor; acrid taste; boils at a temperature of 117° Fahrenheit, and solidifies at 4°; is not combustible; does not support combustion; immediately extinguishes a taper thrust into its vapor; is most soluble in ether; a powerful bleaching agent; colors the skin yellow, when in contact, as does nitric acid; and has a specific gravity nearly three times that of water.

III. *Forms of Administration.*—It has been highly recommended by Dr. M. Goldsmith and his associates, in the form of solutions of various strength, from 20 to 40 drops of bromine to the ounce of alcohol or ether; and still later, they advise its external application in its full strength. Internally, it is most frequently administered in the forms of bromides of potassium and ammonium. Its vapor diffused through the air is, also, one form of its use.

IV. *Physiologieal Effects.*—The very concurrent testimony of a number of observers is to the effect, that bromine has a *decided sedative influence* upon the *cerebro-spinal nervous centres*, and that, as a result of such impression, its free use is followed by diminished action of the heart and general circulation, lessening the special sensibility of particular portions of the system, and exerting a happy, tranquillizing influence in cases of excessive reflex excitability.

V. *The Diseases in which its Use is Indicated.*—Its physiological effects are not so decided but that they may be easily modified or controlled by serious structural disease, or morbid processes going on in the system. The cases in which most benefit is derived from its internal use, are those in which functional derangement, rather than organic disease, is present. Its very beneficial effects in certain forms of insomnia have been noted by several writers, and I have to add my own observation in several marked cases, in which a nervous, wakeful condition was well controlled in persons where opium was not well borne, and with none of its unpleasant sequences. Acting upon the suggestion of Brown-Séquard, who has spoken very decidedly in its praise, Mr. Henry Behrend, an eminent English practitioner, commenced the use of bromide of potassium in 1864, in cases of insomnia and restlessness, dependent upon nervous excitement and irritability. He cites several cases, where business men, by a severe overtaxing of their mental powers, were wholly unable to procure tranquil sleep. His prescription, in the instances cited, was 25 grs. of the bromide of potassium three times a-day, dissolved in a little cold

water, and with the happiest effects. Several of my associates have given me a like assurance of its beneficial influence as a sedative, and often very happily meeting the want where opium was not tolerated, and where valerian and other anti-spasmodics had failed.

Unhappily, the habits of our American people are such, that, for our overworked business men, for our overtasked children in schools, for our enervated females, who become morbidly sensitive mothers, a remedy like this seems especially needed, and it may be said in praise of this salt of potash, that, while it is a decided nervous sedative, it does not at all impair digestion, it does not constipate the bowels, and tends rather to allay than promote irritation of the urinary organs.

The dose for its sedative effect, in cases now alluded to, may vary from 15 grs. to 30, in solution, three times a day. Brown-Séquard assures us that he has given it in drachm doses, for several consecutive weeks, without any deleterious effect. As might be anticipated, it has already been very fully tried in *epilepsy*. Dr. Wilks, of Guy's Hospital, cites two cases, in which the exhibition of 5 grs. of the potash, three times a day, was followed by recovery, when the ordinary remedies had failed.

His theory is this: That in those cases there was local affection of bone or membrane, and that the remedy relieves by its absorbent power. I think it more probable, that the primary and favorable effect is upon the *nerve* tissue, diminishing its irritability, or else the iodide of potassium, which is more potent as a stimulant to absorption, would act with superior energy and success, which is *not* the case. Dr. Rodgers, physician to West London Hospital, has recently tested its use in this disease, with very favorable results. He directs 15 to 20 grs. three times a day, and has relieved, entirely, several cases that had baffled all previous effort. He dwells specially upon its use in epilepsy induced by excessive masturbation, one case, very severe in its development, yielding to a continued use of 25 grs. three times a day, for several months.

A friend of mine related a case that had excited a good deal of interest in Boston recently, where physicians had failed to relieve a patient of most distressing pain in the cervical portion of the spinal cord, and which Brown-Séquard controlled almost immediately by the administration of 20 grs. of bromide of potassium, administered three times a day, and continuing its use during several weeks.

I have tested the use of bromide of potassium, recently, in a case of tetanus, but without appreciable benefit; the case passing rapidly to a fatal termination, the exciting cause, whatever it may have been, brooking no restraint. Yet, in both these dieases, I am disposed to trust more to the use of bromine than to all other remedies.

One of its special effects is upon the nervous distribution to the upper portion of the respiratory tract. Hence, several papers have made their appearance upon its use in spasmodic affections of the larynx and bronchi. In spasmodic asthma, it has been spoken of with favor. In spasmodic croup, where there is a proclivity to its frequent return, I believe the tendency may be, in many instances, broken up by its judicious and timely use.

Whooping-cough is another affection, over which it exerts a very perceptible influence, and to its use in this disease, I invoke your

careful consideration. Dr. Gibbs, of Westminster Hospital, London, reports a list of cases of this affection treated with bromide of ammonium. Not all were relieved. Those with spasmodic cough, however, were almost uniformly cured of the whoop; but, in proportion as catarrhal symptoms were present, it failed to afford prompt relief. To infants, he administered from 3 to 5 grs. in solution three times a day, increasing the dose to 4 and 8 grs. in the cases of older children.

This drug is found also to produce a decided anæsthetic effect upon the genito-urinary passages. I have tested its effects upon irritation of the male urethra, and upon the genital irritation inducing nocturnal emissions, and have succeeded with this better than with any other remedy. A colleague cites a case of long-standing, habitual seminal emission, cured by the use of 20 grs. of bromide of potassium three times a day, its use being continued for a number of weeks.

Dr. Debout, a French writer, cites a remarkable case of stricture of the urethra, so irritable that it was found impossible to dilate it in the ordinary manner, with bougies, and attended with excessive febrile excitement. He made use of a drachm, daily, of the bromide of potassium, and succeeded beyond his most sanguine expectation; for, he says, as soon as the bromide had taken effect, the catheter could be introduced with greater and greater dimension, without any unfavorable effect. In this case, its hypnotic effect was very remarkable, for, although the patient had been almost sleepless for weeks previous, when only a half drachm had been administered, he obtained a good night's rest. In cases of irritability of the bladder, it has been equally successful. In some cases, its use has been discontinued from its excessive somnolent power, inducing too profound and prolonged sleep. Where there exists a morbidly sensitive condition of the mucous membrane of the genital organs, I think this remedy will be found to act very kindly, and, in the instances which have come under my notice, quite efficiently. It will be found serviceable in allaying the congestion and excitability of the genital organs of those habituated to masturbation, and may well be prescribed for its local sedative effect, during the period that the unfortunate victim is endeavoring to rid himself of the habit. I tried, in several cases, the use of bromide of potassium in this morbid condition of the genital organs, where produced by nocturnal emissions, in doses of 3 to 5 grs. three times a day, but failed of any satisfactory results till I had increased the dose to 15 and 20 grs. given at the same intervals. I anticipate that, where there has been developed in these organs decided inflammatory action, the drug will, in a measure, fail to meet our desire; but in the case of decided local inflammation of the part, I still believe the exalted sensibility will be in a good degree controlled, and that this effect will favor recovery.

In all these cases, whether of epilepsy, tetanus, whooping-cough, bronchial irritability, or excitement of the genito-urinary organs, those cases are most favorably affected, where the patient is in a moderately sthenic condition; and, indeed, it will be found beneficial sometimes to sustain with decided tonic treatment at the same time that bromine is used for its tranquillizing effect. Several cases of extreme prostration and wakefulness were well relieved by the use of $\frac{1}{20}$ gr. of strychnine administered three times a day, at meal-time, fol-

lowed by 20 grs. of the bromide at bedtime. In all cases where it is administered to persons who are *enfeebled*, I think special care should be taken to support at the same time by appropriate tonics.

I pass, lastly, to consider its external use as a disinfectant and as an escharotic. The testimony of Surgeon Woodward, 22d Reg't Ill. Volunteers, to Surgeon Goldsmith, is very decisive, as to the effects of the vapor of bromine in wards devoted to the treatment of erysipelas. Others speak so decidedly in its praise when used in its volatile form to prevent the contagious effects of erysipelas, that I confess a desire to see their experiences more fully verified, and if the half is true which is asserted of it, we may well rank it next to chloroform—the second best of God's gifts to surgery. I am disposed fully to test it, by liberating a moderate amount of its vapor in all confined rooms where contagious or even pernicious diseases are to be treated, with the view of determining to what extent it has power to neutralize the *miasm* which is productive of contagion.

Finally, its use is recommended in the strongest terms by Surgeon Goldsmith, his hospital assistants, and others, as an escharotic. The strong affinity which it has for the elements of the tissues causes it to act upon them in a similar manner to nitric acid; but it is found superior to the latter, from the perfect neutralizing effect which it exerts upon the poison producing hospital gangrane. It has seemed, in many instances, an absolute specific against the ravages of this disease, controlling the progress of the sloughing, and changing the wound to the condition of a healthy ulcer in which, granulations springing up readily, the recovery was rapid. Of the manner in which it exerts its beneficial effect, both upon living and decomposing molecules, I am not able to speak; but the fact remains, that when, in its full strength, the solution of bromine has been applied to a gangrenous ulcer or wound, the peculiar *fetor* disappears, the rapid decomposition of tissue is arrested, the wound soon puts on favorable appearances, the patient demands food, improves in strength, and soon rallies from his critical condition. Of course there are numerous modifying influences which may prevent its favorable effects, but, so far as the local poison which developes and propagates hospital gangrene is concerned, it is asserted, upon reliable authority, to neutralize it promptly by a single thorough application, and that thereafter the wound is to be esteemed and treated as of *non*-malignant character. How fully the experience of the great body of army surgeons is confirmatory of the strong assurances of Surgeon Goldsmith upon this point, I am unable to say; but I close the paper at this point, to solicit from those who may have given it a full and impartial trial the result of their experience, as an external application in the prevention of erysipelas and in the cure of gangrene.

Two queries present themselves, which I will not withhold. The one is: May not the presence of bromine with *iodine* in cod-liver oil give to it an efficiency not possessed by any of its artificial imitations? The other: May not the bromine found in most of our saline and some of our chalybeate springs have given to them a more decided curative power than we have been wont to ascribe to medicinal springs?

With caution, that we do not anticipate too much from bromine as a curative agent, remembering that its action may be easily modified

or entirely controlled by strong disturbing influences, as in acute disease, still I think it well for us to test, patiently and carefully, its effects upon the human economy; and I feel confident that in many instances, in the diseases before mentioned and perhaps others, we shall find in it a remedy which all must acknowledge to be essentially needed in the treatment of disease.—*Chicago Medical Examiner, Dec.*, 1866.

ART. XIX.—*Pitch Vapor Bath in Rheumatism.*

DR. W. W. IRELAND describes (*Edin. Med. Jour.*, Feb., 1864, p. 709) a very successful method of treating cases of chronic rheumatism, bronchitis, and other affections, which is employed at the town of Die, near Valence, in the south of France. It appears to have been for a long time the practice among the peasants of the district, when suffering from rheumatism, to expose themselves to the vapors of a pitch-furnace; but Dr. Chevandier was the first who employed this remedy in regular medical practice. The furnace used resembles a large baking-oven. The fire is below, and the resinous layers of pine-wood (*Pinus Cembrot*) are strewed upon the floor. The patient sits on a bench, wrapped in a porous covering of wool. The temperature is ordinarily from 140° to 158° Fahr. He remains in the bath from 15 to 20 minutes. After the feeling of overpowering heat has passed off, the sensations are very agreeable. Abundant perspiration is produced, and the skin becomes red; the face is often very injected; but the determination of blood to the surface seems to prevent any tendency to cerebral congestion. The pulse ordinarily rises by 10 or 15 beats. When the patient leaves the bath he retires to bed, and remains there an hour or two. The urine gives out a terebinthine odor. The number of baths taken is from 15 to 20.

The medical practitioners at the baths state that no case of pure uncomplicated rheumatism has ever left their establishment uncured. Muscular rheumatism is especially benefited. Lumbago almost always disappears after 5 or 6 baths. Rheumatic endocarditis and pericarditis are said to yield more rapidly to this than any other form of medication: but organic affections, and palpitation of the heart, and the hæmorrhagic diathesis, are regarded as contra-indicating the employment of these baths. It is doubtful whether this method of treatment does good in phthisis; but chronic bronchitis is rapidly relieved by it. Dr. Ireland has himself several times visited Die, and he says that all patients suffering from obstinate rheumatism or bronchitis should, if they possibly can, betake themselves to that place. The season lasts usually from June to September.—*Year Book Med. and Surg.*, 1864.

Physiology and Chemistry.

ART. XX.—*On the Source of Muscular Power.* By DR. EDWARD FRANKLAND, Professor of Chemistry, Royal Institution, London.

PROFESSOR FRANKLAND has, during last year, brought before the Royal Institution the results of a very interesting research upon the above subject.

He commences by stating the now well recognized facts that, within the sphere of our knowledge, *force*, in the abstract, is never created or destroyed; that it may exist in the latent condition of "potential energy," or may be liberated in some one of the well known forms of active force, as heat, electricity, mechanical force, etc., that these forms of active force are mutually convertible one into the other, so that we may produce heat by means of chemical action, electricity by means of heat, mechanical force by means of either, etc; and that in such transformations of force there is neither increase nor diminution of the original amount of abstract energy. "We now know that an animal, however high its organization may be, can no more generate an amount of force capable of moving a grain of sand, than a stone can fall upwards or a locomotive drive a train without fuel. All that such an animal can do is to liberate that store of force, or potential energy, which is locked up in its food." "From food, and food alone, comes the matter of which the animal body is built up; and from food alone come all the different kinds of physical force which an animal is capable of manifesting. The two chief forms of force thus manifested are heat and muscular motion or mechanical work."

The author next remarks that these two principal forms of force manifested by living animals, viz: heat and mechanical or muscular force, "have been almost universally traced to two distinct sources, the heat to the oxidation of the food, and the mechanical work to the oxidation of the muscles." He quotes from sundry eminent physiologists and physicists with reference to this view, which is generally associated with the name of Liebig. Thus Liebig himself says (in his "Organic Chemistry in relation to Physiology and Pathology,") "all experience teaches that there is only one source of mechanical power in the organism, and this source is the transformation of the living parts of the body into lifeless compounds. This transformation occurs in consequence of the combination of oxygen with the substance of the living parts of the body." And again (in his "Letters on Chemistry"), "The sulphurized and nitrogenous constituents of food determine the continuance of the manifestations of force; the non-nitrogenous serve to produce heat. The former are the builders of organs and organized structures, and the producers of force; the latter support the respiratory process, they are materials for respiration."

Playfair says (in his lecture "On the Food of Man in relation to his Useful Work," 1865): "From the considerations which have preceded, we consider Liebig amply justified in viewing the non-nitrogenous portions of food as mere heat givers, * * * * while we have been led to the conclusion that the transformation of the tissues is the source of dynamical power in the animal."

And Odling says (in his "Lectures on Animal Chemistry," 1866) "The slow oxidation of so much carbon and hydrogen in the human body, therefore, will always produce its due amount of heat, or an equivalent in some other form of energy; for while the latent force liberated by the combustion of the carbon and hydrogen of fat is expressed solely in the form of heat, the combustion of an equal quantity of the carbon and hydrogen of voluntary muscle is expressed chiefly in the form of motion."

In fact, the commonly received view may be thus summed up: The two principal forms of force eliminated by a living animal are heat and mechanical activity. Both these are derived ultimately from the same source, viz: the chemical combination of oxygen derived from the air with other elements, principally carbon and hydrogen, derived from the food consumed and assimilated. Food being divided into two great classes, viz: that which includes the fats, sugars, and starches—bodies destitute of nitrogen—and that which includes albumen and allied substances, containing nitrogen; the oxidation of the former of these gives rise to the evolution of heat; the oxidation of the latter is the source of mechanical energy. The assimilation of non-nitrogenous food destined for the production of heat goes so far only as the formation of blood, which fluid is then supplied with oxygen by means of the respiratory process, and, undergoing gradual oxidation. evolves *heat*. The nitrogenous forms of food, on the other hand, are not only converted into blood, but the blood is built up into organized muscular tissues, before the process of oxidation sets in which is to eliminate potential energy in the form of *mechanical* or *muscular force*.

After showing that some few writers have entertained doubts as to the correctness of the above view so far as it relates to the development of mechanical force by the living body, Dr. Frankland proceeds to examine this question experimentally, by determining the following points:

1st. What amount of force is a given weight of muscle actually capable of yielding by oxidation?

2d. What amount of mechanical force is actually exerted by the human body in a given time under given conditions?

3d. What is the weight of the muscle oxidized in the body in the same time and under the same conditions?

The first point was determined by burning muscle and certain other substances with an ample supply of oxygen, thus evolving the "potential energy" of these substances as heat, and calculating from the amount of heat produced the equivalent amount of mechanical energy, in accordance with the well known results of Joule and Mayer, who have shown that the force which in the form of heat is required to raise the temperature of 1 kilogramme of water 1°C. is capable, as mechanical energy, of raising 425 kilogrammes to the height of 1 metre.

The combustions were made with chlorate of potash in the calorimeter of Lewis Thompson, and full details are given of the method of experiment and the precautions and calculated corrections requiring to be made, but space does not permit us to reproduce them in detail.

The following results were obtained as the mean of several experiments for each substance.

Name of substance dried at 100°C.	Units of heat* produced by combustion of 1 gramme of each substance.	Metre-Kilogrammes† to mechanical force equivalent to heat produced
Beef muscle (purified by repeated washing with ether),	5103	2161
Purified albumen,	4998	2117
Beef fat,	9069	3841

But the above table indicates the production of a greater amount of heat, by the combustion of these substances along with chlorate of potash, than is actually developed by the oxidation of the same substances in the living body of an animal, because in the former case the combustion is *complete*, i. e., the carbon and hydrogen are converted into carbonic acid and water, ultimate products of oxidation, while in the latter case the combustion is *incomplete*, the products being carbonic acid, water, and *urea*, the last named substance being the vehicle for the removal of nitrogen from the system, while it is itself still a combustible body. In strictness we should class uric acid, hippuric acid, creatine etc., with urea, but the quantity of these other substances is relatively quite small. In order, therefore, to obtain the actual amount of force due to the oxidation of muscle *in the body*, it is necessary to ascertain the amount of force producible from the urea, as rejected by way of the kidneys, and subtract this from the results of the above table.

This has been done by Dr. Frankland, with the result in the case of urea that 1 gramme burnt with chlorate of potash yields 2206 units of heat, equivalent to 934 units of mechanical force. Then, assuming that the whole of the nitrogen of the muscle, albumen, etc. oxidized passes out of the body as urea, and that consequently dry muscle and pure albumen yield almost exactly one third of their weight of urea, the following corrected results are obtained:

Name of substance dried at 100°C.	Heat units produced by oxidation of 1 gramme of each substance in the body.	Units of mechanical force equivalent to heat produced.
Beef muscle, purified by ether,	4368	1848
Purified albumen,	4263	1803

To determine the second of the questions proposed above, viz: what amount of mechanical force is actually produced by the human body in a given time under given conditions, recourse was had to the reported results of the careful experiment made by Fick and Wislicenus upon themselves, consisting of the ascent of the Faulhorn in Switzerland from the Lake of Brienz. The weight of the body with all equipments (hat, clothes, stick) etc., amounted to 66 kilogrammes in the case of Fick, and to 76 in that of Wislicenus.

The height of the mountain ascended is 1956 metres. Therefore, in raising their own bodies, clothes, etc. through this height, these gentle-

* The unit of heat is the amount of this force necessary to raise the temperature of 1 gramme of water by 1°C.

† The metre-kilogramme, or unit of mechanical force, is the amount of this force required to raise 1 kilogramme to the height of 1 metre.

men performed 129.096 and 148.656 metre-kilogrammes of muscular work respectively; this work being done in 5.5 hours.

It is noticed that "in addition to this measurable external work there was another item of force which can be expressed in units of work; it consists of the force consumed in respiration and the heart's action." It is shown that these two additional forms of muscular exertion can be approximately estimated, though we do not possess absolutely accurate measurements of either. Basing his estimates upon the most reliable data available, and adding the results to those above given for the weights raised, the author arrives at the conclusion that Fick and Wislicenus, in raising their own weights to the top of the Faulhorn and maintaining during the ascent the observed degree of activity of the muscles concerned in respiration and the action of the heart, exerted a degree of mechanical force equivalent to 159.637 and 184.287 metre-kilogrammes respectively.

It is noticed also that during this mountain ascent there was necessarily a large amount of muscular or mechanical force originally evolved as such, but not represented by any permanent mechanical result, being converted again into heat, such as the muscular exertion involved in the passage over occasional level places or even descents on the mountain path, the various movements of the head, arms, and trunk, the very sustenance of the body is an erect posture; all of which would go to largely increase the above figures. These may therefore be safely taken as an expression of the minimum amount of mechanical work done by the muscles of the two experimenters.

The third of the questions proposed, viz: what weight of muscle is oxidized in the living body in a given time and under given conditions, was determined by reference to this same experiment of Fick and Wislicenus. These gentlemen abstained from all nitrogenous food from noon of the day before the ascent (Aug. 29, 1865) to 7 o'clock of the evening of the following day (Aug. 30). The only solid food consumed during this time consisted of starch, fat, and sugar.

The amount of nitrogen excreted in the urine was carefully determined by the experimenters themselves and the amount of dry muscle represented by this quantity of nitrogen is calculated with the following results:

	Fick.	Wislicenus.
Total am't of Nitrogen excreted during ascent,	3.31 grammes	3.13 grammes
Ditto during six hours after ascent,	2.43 "	2.42 "
	5.74 "	5.55 "

	Fick.	Wislicenus.
Weight of dry muscle corresponding to Nitrogen excreted during ascent,	20.98 grammes	20.89 grammes
Ditto during six hours after ascent,	16.19 "	16.11 "
	37.17 "	37.00 "

It is not considered necessary to take account of any nitrogen in the fæces (estimated at about one-twelfth that in the urine), as this may be looked upon as belonging to compounds which have not undergone oxidation, and therefore have not yielded up their potential energy.

Summing up the above results the author points out that

1st. If we calculate the weight of muscle oxidized in the bodies of Fick and Wislicenus in the course of this experiment from the weight of nitrogen excreted in the urine during the ascent and for six hours afterwards, we find that in the case of Fick there were 37.17 grammes of dry muscle thus consumed, and in the case of Wislicenus 37.00 grammes.

2d. The total amount of mechanical force capable of being produced by the oxidation in the body of the above amounts of dry muscle is in the case of Fick 68.690 metre-kilogrammes, and in the case of Wislicenus 68.376 metre-kilogrammes; but that

3d. It has been shown above that more than 159.637 and 184.287 metre-kilogrammes of mechanical work were respectively performed by these gentlemen during the ascent in question.

Hence, "it is evident that the muscular power expended by these gentlemen in the ascent of the Faulhorn could not be exclusively derived from the oxidation, either of their muscles, or of other nitrogenous constituents of their bodies, since the maximum of power capable of being derived from this source even under very favorable assumptions is, in both cases, less than one half of the work actually performed. But the deficiency becomes much greater, if we take into consideration the fact that the actual energy developed by oxidation or combustion cannot be wholly transformed into mechanical work. In the best constructed steam engine, for instance, only one tenth of the actual energy developed by the burning fuel can be obtained in the form of mechanical power; and, in the case of man, Helmholtz estimates that not more than one-fifth of the actual energy developed in the body can be made to appear as external work. The experiments of Haidinhain, however, show that under favorable circumstances a muscle may be made to yield in the shape of mechanical work as much as one-half of the actual energy developed within it, the remainder taking the form of heat. Taking then this highest estimate of the proportion of mechanical work capable of being got out of actual energy, it becomes necessary to multiply by 2 the above numbers, representing the ascertainable work performed, in order to express the actual energy involved in the production of that work. We then get the following comparison of the actual energy capable of being developed by the amount of muscle consumed, with the actual energy necessary for the performance of the work executed in the ascent of the Faulhorn.

	Fick. metre-Kilogrammes	Wislicenus. metre-Kilogrammes
Actual energy capable of being produced by muscular metamorphosis.....	68.690	68.376
Actual energy expended in work performed	319.274	368.574

Thus, taking the average of the two experiments, it is evident that

scarcely one-fifth of the actual energy required for the work performed could be obtained from the amount of muscle consumed."

The author examines several sets of experiments previously on record with regard to the work done by men in various forms—as labor on the tread-mill, "shot-drill" of soldiers, etc.—and finds that a similar result is deducible from these when examined in the same way.

Attention is next drawn to the fact, that the amount of nitrogen excreted in the urine is not materially increased by increase of muscular activity, but that the amount of carbonic acid thrown off by the lungs *is* very materially increased thereby. Thus E. Smith (*Phil. Trans*, 1859, p. 709) found the amount of carbonic acid evolved from his own lungs under different circumstances as follows:

	Carbonic Acid per hour.
During sleep,	19.0 grammes.
Lying down, and sleep approaching,	23.0 "
In a sitting posture,	29.0 "
Walking at rate of 2 miles per hour,	70.5 "
" " " 3 " " "	100.6 "
On the tread-wheel, ascending at rate of 28.65 feet per minute,	189.6 "

Hence, the final result arrived at by Dr. Frankland is that muscular or mechanical power is not due principally to the oxidation of the muscles themselves or of the nitrogenous constituents of food, but to the oxidation of the non-nitrogenous elements of food—sugar, starch, fat, etc.—which substances do not require to be converted into solid tissue before undergoing the oxidation which is to evolve their latent "potential energy," but need only to be assimilated so far as to enter into the composition of that vital fluid—blood—which is thus ascertained to constitute the true fuel which maintains the evolution of *both* the chief forms of force disengaged by living animals —heat and mechanical energy.

The muscle itself is only the machine, or a part of the machinery, by which the transformation of force is accomplished.

Comparing the living animal body with the best known machine of human contrivance—the steam-engine—the muscle is but a part of the machine itself—it is not the fuel beneath the boiler. The blood is the coal or wood, the combustion of which, though in a much more complex series of chemical changes, yet as really as the combustion of the common coal or wood in the furnace of a steam-engine, is made to yield both heat and mechanical force.

Dr. Frankland does not deny that both of these forms of force may be developed by the oxidation of muscular tissue or of nitrogenous food, but he maintains that such is not the normal or principal source of energy in the living animal. Recurring to the analogy of the steam-engine, the material of which the machine itself is composed—the iron of the cylinder, piston, etc.—might actually be burnt, and be made by combination with oxygen to produce steam or to yield at pleasure heat and mechanical force, but this is clearly not the most advantageous mode of developing the needed energy. True,

the muscles are being continually renewed, and nitrogenous food is needed for their renewal—in like manner the metallic parts of a steam-engine are gradually worn away and have to be replaced—but in neither case does the consumption of these portions of the *machine itself* stand on the same footing as the normal consumption of *fuel* as the source of force developed by the machine in operation—in life.

In connection with the foregoing results Dr. Frankland has made a number of experiments upon the different articles of food in common use, with a view to determine their capability for the production of muscular power. The determinations were made by the same calorimetric method as that applied at first in the combustion of muscle.

The following table gives the principal results:

Name of Food.	Metre-Kilogrammes of force developed by 1 gramme of each article oxidized in the human body.	
	Dry.	Natural condition.
Cheshire Cheese	2429	1846
Potatoes	1563	422
Apples	1516	273
Oatmeal	——	1665
Flour	——	1627
Peameal	——	1598
Ground Rice	——	1591
Arrowroot	——	1657
Bread Crumb	1625	910
Lean of Beef	2047	604
Ditto of Veal	1704	496
Ditto of Ham, boiled	1559	711
Mackerel	2315	683
Whiting	1675	335
White of Egg	1781	244
Hard-boiled Egg	2562	966
Yolk of Egg	2641	1400
Gelatine	1550	——
Milk	2046	266
Carrots	1574	220
Cabbage	1543	178
Cocoa Nibs	——	2902
Butter	——	3077
Beef Fat	3841	——
Cod Liver Oil	3857	——
Lump Sugar	——	1418
Commercial Grape Sugar	——	1388
Bass's Ale, bottled	1559	328
Guinness's Stout	2688	455

The following tables are calculated from the above:

Weight and cost of various articles of food required to be oxidized in the body in order to raise 140 lbs. (average weight of a man), to the height of 10,000 feet. (External work assumed--one-fifth actual energy.)

Name of Food.	Weight in lbs. required.	Price per lb. s. d.	Cost. s. d.
Cheshire Cheese	1.156	0 10	0 11½
Potatoes	5.068	0 1	0 5¼
Apples	7.815	0 1½	0 11¾
Oatmeal	1.281	0 2¾	0 3½
Flour	1.311	0 2¾	0 3¾
Peameal	1.335	0 3¼	0 4½
Ground Rice	1.341	0 4	0 5½
Arrowroot	1.287	1 0	1 3½
Bread	2.345	0 2	0 4¾
Lean Beef	3.532	1 0	3 6½
" Veal	4.300	1 0	4 3½
" Ham, boiled	3.001	1 6	4 6
Mackerel	3.124	0 8	2 1
Whiting	6.369	1 4	9 4
White of Egg	8.745	0 6	4 4½
Hard-boiled Egg	2.209	0 6½	1 2½
Isinglass	1.377	16 0	22 0½
Milk	8.021	5 d. pr. qt.	1 3½
Carrots	9.685	0 1½	1 2½
Cabbage	12.020	0 1	1 0¼
Cocoa Nibs	0.735	1 6	1 1¼
Butter	0.693	1 6	1 0½
Beef Fat	0.555	0 10	0 5½
Cod Liver Oil	0.553	3 6	1 11¼
Lump Sugar	1.505	0 6	1 3
Commercial Grape Sugar	1.537	0 3½	0 5½
Bass's Ale, bottled	9 bottles.	0 10	7 6
Guinness's Stout	6¾ "	0 10	5 7½

Weight of various articles of food required to sustain respiration and circulation in the body of an average man during 24 hours:

Name of Food	Weight in oz.	Name of Food.	Weight in oz
Cheshire Cheese	3.0	Whiting	16.8
Potatoes	13.4	White of Egg	23.1
Apples	20.7	Hard-boiled Egg	5.8
Oatmeal	3.4	Gelatine	3.6
Flour	3.5	Milk	21.2
Peameal	3.5	Carrots	25.6
Ground Rice	3.6	Cabbage	31.8
Arrowroot	3.4	Cocoa Nibs	1.9
Bread	6.4	Butter	1.8
Lean Beef	9.3	Cod Liver Oil	1.5
" Veal	11.4	Lump Sugar	3.9
" Ham, boiled	7.9	Commercial Grape Sugar	4.0
Mackerel	8.3		

The author remarks that these results are in many instances fully borne out by experience, referring to the facts that the food of hard working English laborers often is found to contain a large proportion of fat, that railroad "navigators" are seen dining upon "thick slices

of bread surmounted with massive blocks of bacon, in which mere streaks of lean are visible," that the chamois hunters of Western Switzerland carry with them as provision for long and fatiguing expeditions nothing but bacon fat and sugar, "because, as they say, these substances are more nourishing than meat," and that insects, as bees and butterflies, perform enormous muscular work, and subsist upon a diet containing but the merest traces of nitrogen.

The important additional remark is made that it "must be borne in mind that it is only on the condition that the food is digested and passes into the blood, that the results given in these tables are realized. If, for instance, sawdust or paraffine oil had been experimented upon, numbers would have been obtained for these substances, the one about equal to that assigned to starch, and the other surpassing that of any article in the table; but these numbers would obviously have been utterly fallacious, inasmuch as neither sawdust nor paroffine oil is, to any appreciable extent, digested in the alimentary canal. Whilst the force values experimentally obtained for the different articles in these tables must therefore be understood as the maxima assignable to the substances to which they belong, yet it must not be forgotten that a large majority of these substances appear to be completely digestible under normal circumstances.

We have thus endeavored to place before our readers, in an abbreviated form, the more important parts of this interesting paper, the conclusions arrived at in which are thus summed up by Dr. Frankland himself:

"1st. The muscle is a machine for the conversion of potential energy into mechanical force.

2d. The mechanical force of the muscles is derived chiefly, if not entirely, from the oxidation of matters contained in the blood, and not from the oxidation of the muscles themselves.

3d. In man the chief materials used for the production of muscular power are non-nitrogenous; but nitrogenous matters can also be employed for the same purpose, and hence the greatly increased evolution of nitrogen under the influence of a flesh diet, even with no greater muscular exertion.

4th. Like every other part of the body, the muscles are constantly being renewed; but this renewal is not perceptibly more rapid during great muscular activity than during comparative quiescence.

5th. After the supply of sufficient albuminised matters in the food of man to provide for the necessary removal of the tissues, the best materials for the production both of external and internal work are non-nitrogenous matters, such as oil, fat, sugar, starch, gum, etc.

6th. The non-nitrogenous matters of food, which find their way into the blood, yield up all their potential energy as actual energy; the nitrogenous matters, on the other hand, leave the body with a portion (one seventh) of their potential energy unexpended.

7th. The transformation of potential energy into muscular power is necessarily accompanied by the production of heat within the body, even when the muscular power is exerted externally. This is, doubtless, the chief, and probably the only, source of animal heat."—Condensed from "*Chemical News*." [J. W. M.]

ART. XXI.—*On the Existence of Xanthine in the Liver.* By A. ALMEN.

XANTHINE, which at first was found only in certain calculi, has since been met with in a great number of organs as these have been successively examined, and has always been accompanied by a greater or less amount of guanine and hypoxanthine.

Almen has sought for this substance in the liver of the ox, adopting the method of Staedeler in the investigation. 5 kilogrammes of liver yielded 1.001 gramme of xanthine, or about .02 per cent. As the result of another experiment 26 kilogrammes of liver yielded 6.24 grammes, or .024 per cent.

The xanthine as obtained by the method employed was purified by solution in ammonia and addition of carbonate of ammonia, which removed traces of lime and oxalate of lime; the filtered solution, on evaporation at a gentle heat, furnished the product partly in crusts, partly as a yellow or flesh color powder. The xanthine thus extracted from the liver contained neither hypoxanthine nor guanine. To remove the coloring matter accompanying the xanthine, it was dissolved in warm, dilute hydrochloric acid; the solution was digested with animal charcoal and filtered; on evaporation colorless crystals of hydrochlorate of xanthine were obtained.

The solubility of this xanthine in water was found to be about the same as that of xanthine derived from urinary calculi, as determined by Langenbeck: 1 part of xanthine dissolved in 14.583 parts of cold water.

Pure xanthine and hypoxanthine may be distinguished from one another by the action of heat. Hypoxanthine, when heated upon a strip of platinum foil, melts whilst undergoing decomposition; this does not occur in the case of xanthine.—*Bull. mens. de la Soc. Chim. de Paris*, quoting from *Journal für prakt. Chem.* [J. W. M.]

ART. XXII.—*Presence of Urea in the Milk of the Herbivora.* By J. LEFORT.

M. LEFORT is said to have extracted, by well known processes, 1½ gramme of nitrate of urea from 10 litres of the milk of healthy cows. He considers urea as a normal constituent of milk. The editor of the *Bulletin de la Soc. Chem.* raises the question whether the milk of a *milch cow* is itself to be looked upon as a normal fluid.—*Bull. de la Soc. Chem. de Paris*, quoting from *Comptes rendus à l'Acad. des Sci.* [J. W. M.]

ART. XXIII.—*On the Action of Per-Manganate of Potash upon Albumen.* By V. SUBBOTIN.

SOME time since it was announced by Béchamp that he had succeeded in producing urea from albumen by oxidizing the latter by means of per-manganate of potash.

Staedeler has contradicted this statement of Béchamp, maintaining that urea cannot be obtained from albumen by the method in question.

Subbotin has repeated the experiment of Béchamp, and he also reports negative results. The temperature was kept at 50°–60° C. during the process. It was found that 3.2 to 3.5 parts of per-manganate of potash are required to oxidize 1 part of albumen. The products obtained are similar to those yielded by the action of peroxide of manganese or bi-chromate of potash and sulphuric acid upon albumen, several different substances being found, of which benzoic acid and compounds of benzoyle constitute a considerable part, but *not a trace of urea*. All the sulphur of the albumen is converted into sulphuric acid. It was found that the nature and relative proportions of the products of oxidation depend much upon the conditions under which the reaction is effected. This fact renders it desirable that Béchamp should furnish a precise statement of the mode by which, according to him, urea may be obtained by oxidizing albumen with per-manganate of potash.—*Chemisches Centralblatt.*

[J. W. M.]

Art. XXIV.—*Alkaline Solution of Oxide of Bismuth as a test for Sugar in the Urine.*

FRANCQUI and Van de Vyven prepare this reägent as follows: A solution of nitrate of bismuth is precipitated with a great excess of potash, the liquid is gently warmed, and a solution of tartaric acid is added drop by drop. The precipitate which has been formed dissolves completely before the alkaline reaction has disappeared.

If a few drops of this alkaline solution of bismuth be added to diabetic urine, and the liquid heated until it boils, darkening commences at once, and metallic bismuth is thrown down as a black crystalline powder.

Urea, uric acid, etc., do not decompose the reägent. Albumen indeed produces a slight brownish cloud, but this substance can be easily removed by heating and filtering before applying the test for sugar. Urine containing sulphuretted hydrogen would, of course, be blackened by the reägent in question, but such urine would also be found to blacken a piece of paper dipped in solution of acetate of lead.—*Fresenius—Zeitschrift für anal. Chem.* [J. W. M.]

Art. XXV.—*How long will Strychnine resist the Action of Putrefactive Decay?*

IN order to obtain an answer to this important question, Cloetta introduced 1 grain of nitrate of strychnine in solution into each of several human stomachs, which he then placed separately in a vessel, closing the latter and burying it at the depth of 3 feet in the

earth. After different periods of inhumation the stomachs were removed and examined. The pasty mass produced from the contents and in part from the walls of the stomach was acidified with acetic acid. 2 oz. of alcohol and then 12 oz. of water were added. The mixture was allowed to stand for 24 hours, with frequent shaking. The remaining portions of the walls of the stomach were finely cut up, and extracted with water containing acetic acid. Both fluids were united and filtered, and the alcohol was removed from the filtrate by gentle warming on a water bath. The liquid was evaporated to dryness, saturated with ammonia, and the residue heated with chloroform to dissolve out the strychnine. The residue obtained on evaporating the chloroform was tested by the appropriate means for the presence of strychnine.

The first stomach was disinterred at the end of 3 months, the second after 6 months, and the third after $11\frac{1}{2}$ months. In all strychnine was found. Hence it results that 1 grain of strychnine mixed with the contents of a stomach may still be detected after at least $11\frac{1}{2}$ months interment. It is remarkable that a substance which is so easily and rapidly changed in the living body should so long resist the influence of the process of putrefaction.—*Fresenius—Zeitschrifts für anal. Chem.*

[J. W. M.]

Bibliographical Record.

Foundation for a New Theory and Practice of Medicine. By THOMAS INMAN, M.D., M.R.C.P. London; Physician to the Liverpool Royal Infirmary, etc. Second edition, post 8vo. Pp. 528.

[We take pleasure in presenting to our readers the following able review of Dr. Inman's new work, which has been furnished us by the Editor of the London *Medical Mirror*, from the proof sheets of the January (1867) number. The work is exciting considerable attention among the British medical public, and we are sure that the views of the reviewer will repay a careful perusal.]

THERE has been of late years certainly, perhaps always, a dangerous tendency to let the theory and practice of healing separate; so that, instead of mutually aiding one another they occupy apparently antagonistic positions. Our systematic lecturers administer to their class now a bit of one, now a bit of the other, and feel themselves under no constraint to exhibit their connection. We find even such teachers as the President of the College of Physicians, about a quarter of a century ago, giving to his pupils (and who is not his pupil still ?) the lessons in theory which he had received from his precursors, and confessing at the same time that his practice was completely at variance with those lessons. (See Letter of Sir Thomas Watson in

"Markham's Gulstonian Lectures on Bleeding, etc.") During that quarter of a century our schools have been becoming more and more empirical year by year; we shorten the systematic lectures, as if ashamed of them, and multiply and magnify clinical, that is empirical, instruction.

There are those who do not object to this. They say theories have of old led us wrong—down with them then! let them not lead us any more. Ah, my friends, you are aiming at an impossibility! They will lead you, and cannot but do so. Only, like link-boys in a London fog, unless you tell them how to guide you right they will probably guide you wrong. For instance, who can say that he has never been influenced by the fallacious ideas involved in the abstract term "inflammation," with its derivation from "*flamma?*" Have we not all seen the unhappy Latinizing of "frenzy" by "phrenitis," and the mental association between the termination "itis" and depletion, prove most fatal to the patient? Do not the theories implied by the words "stimulant" and "derivative" often incline at all events, if not lead, most of us to faulty practice?

Among thoughtful men there has been growing up a feeling of shame at the degradation of medicine to a technic art, by the want of any general views of disease at all in accord with the mode of treating it adopted by our acknowledged leaders. There has been going on a fermentation of thought, not dissimilar to that which preceded the great religious Reformation. It has not, indeed, lasted for so long a period, and perhaps some may think us not yet ripe for a Luther to crystallize into dogma thet ruths seething within us. It is a bold stroke for Dr. Inman, and it always will be a bold stroke for anyone, to come forward and propose to defend against all comers a principle which he considers will be the foundation-stone of the medicine of the future.

He does not, indeed, imitate the great reformer by nailing his theses on the doors of the College of Physicians; but if he did so, the poster would probably exhibit as a heading in red capitals—

ALL DISEASE IS A DEFICIENCY OF VITAL FORCE.

We believe this formula is a just expression of the idea animating the whole volume now under review, enunciated from time to time in phrases of varied form and length.

The author may fairly claim the merit of being the first of this generation who has put the notion in a tangible shape, and the first of any generation who has been enabled to bring science to its support. Stahl and Brown and Darwin came very near, but physiology was not in their days sufficiently advanced to enable them to defend and perfect their system; and the unfortunate false deduction respecting alcohol, which poor Brown drew, discredited the influence they exerted. It is different now: her scientific handmaids—Chemistry, Physiology, Histology, are in a condition to give as well as receive aid from Medicine; and, above all, we are less than our fathers under the dominion of words in estimating the qualities of re-agents and their effects. So that, whatever truth there may be in the generalization, thus set baldly and rawly forth, has a fair chance of standing its ground.

But is it true? And if true, is it true absolutely, as we have put it above? Aye, there's the rub. Some will accept it with certain exceptions, some with a grain of salt, some with a grain of cayenne pepper; a considerable party will qualify it with an epithet very important in a practical view, "All *curable* disease;" some will put their own definition to vital force, and then say it is not applicable to that; some will deny the existence of vital force; and to them the expression is meaningless; some will find it a platitude, and so on. But few, we are sure, of those who think while they practice, and practice while they think, will fail to acknowledge that they have of late been yearly more and more illustrating by their acts some principle which, may be wrongly, may be imperfectly expressed, yet somehow underlies the formula we have used.

The exact meaning of the term "vital force" does not seriously affect the argument: whether we take it to be, as even Mr. Lewes allows is unobjectionable, "the dynamical condition of the organism;"* or whether, with Dr. Inman and Dr. Beale, we view it as the *dynamis* which works through that condition, is of no consequence. In the former case disease will be "an adynamic condition of the organism;" in the latter, it may be called, in our own expressive tongue, "scant life."

The first five chapters are occupied in discussing this vital force in various aspects, the existence of it, the modifications of it by matter, the influence of the individual nature it is associated with, the action of destructive agents, its definite duration, and its absence from the still organic body, or "death." The sixth chapter enters upon the subject of disease:

"In health, every part of the body is undergoing change; but new material takes the place of the old with such steady regularity, that no alteration whatever is apparent in the shape, color, consistency, or composition of any part beyond such as is proper to growth and decay, such as the development of the testes in birds during Spring, and their diminution during Autumn and Winter, and the same in man at puberty, and the development of the uterus and mammæ during pregnancy, etc.

"In other words, every organ is perpetually renovated during health, and a certain definite standard condition is habitually sustained.

"But when an individual is out of health, and the vital power is impaired, we cannot expect that the functions will be performed normally, or the renovation keep up to the standard. The departure from the healthy standard may be so small as to be inappreciable, or so great as to be incompatible with life. Between these extremes we have an infinity of degrees.

"Shortly, then, we say, deficient vital power manifests itself by disorder of function and altered nutrition in all our organs."

That the phenomena of disease are the phenomena of a deficiency of vital force, of which death is the absence, is illustrated by what the author calls "a digression," but which seems to us a very essential part of the argument, "upon the phenomena of dying." These are shown to be extreme degrees of the familiar phenomena of disease. If, then,

"We can point out the close connection existing between certain signs during life, and certain appearances after death, and show that whenever there is reason to believe that the body is in a dying or very enfeebled condition, symptoms occur precisely similar to those which occur prior to mortification elsewhere, and if we

can show that these symptoms occur *chiefly* when the vitality of a part is very low, there is at least fair ground for the inference, that wherever they are present, they indicate a great want of power, locally or generally, or both.

"What these signs and symptoms are, it will now be our business to show."

And accordingly, in the next ten chapters, he goes through the principal tissues and organs, showing how their various morbid states are essentially manifestations of deficient vital power.

We will take from the first of these chapters—"On Deficiency of Vital Force in the Nervous System"—a specimen of our author's style of argument, and his forcible, trenchant manner.

"When we see in mania proofs of great mental excitement, surely, it is argued, *that* must involve increased action—the proposition seems self-evident. But, in reply, we ask—What is excitement? What is increased action? Is it not a more than usually rapid expenditure of tissue and of power? Is it not expending in *one* day the material which would otherwise last *two?* and with this excess of expenditure over supply, can there be anything else than impairment of vitality and loss of power?"

The importance of this consideration in the management of lunatics has now been recognized in practice for some years—why should we allow the theory, which looks upon augmented mental excitements as augmented vitality, to hold its ground in our systematic works unsupplanted and unopposed?

The comparison drawn by the author between *post-mortem* solution of the brain and morbid softening during life, both local and general, is very graphic and striking. Microscopic observation strongly confirms his views of the true pathology of degeneration of the cerebral vessels. This is a vital matter in the treatment of apoplexy, which Dr. Inman rightly considers of so much importance that he devotes a great part of a chapter to the citation of cases in support of his opinion that the "clot" in the brain, which occupied so much the thoughts of our forefathers, is really in very many cases the result of venesection; and that it is found less frequently now and of less size, simply because we bleed our apoplectics less.

It may be observed that the cerebral pathology here indicated applies equally well to hydrocephalus, both chronic and acute. In the succeeding subject—deficiency of vital power in the lungs—striking use is made of the addition to our powers of observation, made by Mr. Hutchinson's invention of the Spirometer. It is remarked how *any* morbid state, not only those which limit the area of the pulmonary expansion, but anything that debilitates, diminishes the vital capacity, or the number of cubic inches of air capable of being retained in and expelled from the chest. This is very important and strictly true, not only of diseases, but also of habits which lower muscular force without obviously affecting the health. For example, we have found, in examining for insurance persons apparently robust, that none of those who habitually drink spirits between meals, even in such moderation as to be considered strictly temperate, can blow up the spirometer to their due figure. And in several instances of really intemperate persons, this mode of observation has led to the detection of their secret.

In the succeeding chapters—"on deficiency of vital power in the heart" and in "blood-vessels"—we are made to feel what the accu-

rate modes in use for measuring the respiratory organs have done for us, by the comparative want of force in the author's argument when the circulating system is in question. The deficiency is not in the facts or in the impression they leave, but in the reduction of them to weights and figures. We look forward with interest to great use being made of the observations arising out of M. Marey's invention of the sphygmograph in the next edition of this volume.

In the chapter on the stomach, the importance of rest in the treatment of affections of this organ, is shown by many pointed cases, shortly and clearly given, without that twaddling off into irrelevant matter, which is so common a failing with the citers of clinical experience. The application of Dr. Inman's principles to these diseases is especially valuable, because no class have suffered more from the still clinging adherence to mediæval asceticism which afflicts our judgment. The fashionable theology of the middle ages taught that whatever the body desired was bad for the soul; fashionable medicine went further and said it was bad for the body too. The notion still survives, and thus is lost the aid to selection of treatment which "the voice of the flesh" (*He sarkos phone*—Epictetus) might give us. The author's remarks on the appetite as a condition of digestion are striking.

The 13th chapter is a bold one, for the author ventures to question the supposed frequency of disorder of the liver as a co-efficient in ill health. This is a serious blow to the routine practitioner; for at least nine-tenths of his chronic patients, who have got a pain they cannot otherwise account for, together with all their amateur advisers and consolers, are convinced that their livers are out of order, and want to be treated for "biliousness."

Now, on analyzing cases in which ocular or manual examination shows the liver to be really diseased, such as malignant fevers, abscess, cancer, atrophy, cirrhosis, etc., of the organ; it will be found not only that no *hepatic* symptoms, but as a rule, very few symptoms at all, and those vague ones, can be considered the rule. It is not likely, therefore, that when slightly disordered, it should declare itself by such frequent signs.

"This being then the conclusion to which our investigations have led us, it is advisable to review the principle upon which presumed diseases of the liver are generally treated, and the value of those special medicines which are most in vogue." This review the author undertakes, lance in hand, attacking in a most trenchant manner all cant, calomel and cholagogues. This chapter is all the bolder, in that it is purely destructive, as Dr. Inman is driven to confess his inability to supply a true therapeusis of the liver, in the place of the false which he so ruthlessly destroys. He says the current physiology of the hepatic function is so limited, that no reliable knowledge of its behavior during debility can be gained.

The specimens which we have quoted will enable our readers to guess at the line of argument adopted in the succeeding chapters on the skin, muscular system, and blood. In the last there are some very shrewd and suggestive remarks on what may be called *post-mortem* changes in secretions, that is to say, chemical changes which take place in various times after the separation of the secretions from the body. The author considers rapidity of chemical action

succeeding to vital as a direct proof of deficient vitality. This is a very important practical point; for if the "fouluess" of stools kept for our inspectiou is an evideuce of debility, the couventional purging and grey powder, which they generally suggest to the medical attendant, should be replaced by nutrition and tonics.

To acid fermentation he also attributes the sourness of the sweat in rheumatic fever, and suggests a prognosis to be derived from the rapidity of the alkaline decomposition of the urine.

The next chapter takes up the argument which naturally comes out of these various illustrations, and is apparently a justification of our anthor's assumption of the title "New," as applied to his theory of therapeutics.

He points out that, from the earliest times to the present, the means employed by orthodox physicians to restore health have beeu designedly such as will make a sound man ill. Drugs have been respected and valued iu proportion as they derange the vital force. Let an herb or a mineral cause a mighty physiological disturbauce in the humau body, and they have taken for granted there must be a therapeutical use for it.* We have seeu somewhere a quotation from Van Swieten, in which that philosophical physician expresses the result of his wide-spread review of medical practice in the aphorism, "All that Art can do is to weaken life;" aud truly that seems a fair description of the agents which have been handed down to us iu the Materia Medica; so that to conduct a cure ou exactly opposite priuciples, that is to say, by strengthening the vital forces which remaiu sound, instead of weakening those which are acting abuormally, may be fairly called a *new* theory of therapeutics. But we think Dr. Iuman is not quite just to his predecessors, when he represeuts them as using *destructive* remedies, that is, remedies which lower the vital powers by destructive assimilation, or which remove iu a mass a component of the body, solely with a view of destroying disease. The inteution often is to give freer play to the remaining functions by curbing or removing that which, in the existing condition of the body, is a temporary impediment to it, and thus to allow those functions to recover force, and act themselves as remedies. Thus we may draw blood in cougestion of the lung; not with the design, or eveu the effect of diminishing the semi-vital "inflammation" which is goiug on in the pulmonary tissue; but in order to mechanically set free the obstructed circulation, aud enable the blood to restore normal nutrition. Or we may purge, even drastically, a patient with dropsy, acknowledging freely that the induced weakness is a risk, while reckoning that the chance of a removal of the absorption compeusates the risk. To sacrifice capital for the sake of increasing iucome, may be a very prudent trausaction. We are sure that Dr. Inman often acts in such a manner in his owu practice, and he ought uot to pass over the fact that much of the treatmeut registered destructive had such an intention. In this chapter the advocate rather overshadows the philosopher.

* The leading idea of the savage mind is to reverence destructive power. Sir Samuel Baker found no medicine so popular in Central Africa as tartar emetic, by reason of the quickness and vigor of its consequences. His patients said there never was such a doctor. "He said I should be sick," they exclaimed, "and sick I was! There was no mistake about it! Wonderful!"

Of means for restoring the vital power, it might be expected that the list would be shorter than that grim catalogue of perturbative re-agents, which our forefathers delighted to lengthen, and we, in shortening, have still tried to strengthen. Foremost stand hygienic measures, on which Dr. Inman has many sensible remarks to make, illustrated by anecdotes from his own experience, pointed and purpose-like, but still so much in accordance with the experience of every one of us, that we assent at once, and only wonder we never drew the inference ourselves—they are so good, we think they must be our own. Perhaps the only novelty is the stress laid by the author on the proper regulation of exercise, so as to avoid excess; which, in virtue of being a novelty, is treated of at considerable length. There is no question but what here also mediæval ascetism is at work in the public mind, and leads them to look upon weariness as productive of more health than can be gained by simple relaxation. Dr. Inman's views on the subject ought to be put into the hands of the general public, not only as giving them a piece of useful advice, but as an illustration of sound physiological reasoning. We cannot advise the same treatment of his observations on the use of alcohol. There would be a great danger of their being misunderstood and misused. They would conduce to that great mistake often made in self-management—the substitution of alcohol for a sufficiency of food; indeed, we should like much to see a complete revision of this chapter in the next edition, and a transfer of alcohol from the company of "Foods" into the succeeding category, "Medicines."

Among these latter, we are obliged to Dr. Inman for the attention he draws to two of exceeding value as direct analeptics, viz., Glycerine and Almonds. Of the former he gives from nine to twelve drachms daily, as a substitute for cod-liver oil. Of the latter he quotes an instance in which a quarter of a pound of blanched almonds and a pint and a half of milk daily, took the place of all other food for eight months, and enabled the patient, a man of thirty, to walk twelve miles every morning. We would commend this portable food to Alpine and other pedestrian travellers, also to the military commissariat.

Among tonics, alcohol occupies the first place, and the remarks upon it in this collocation cannot but meet with the approval of all practical and unprejudiced men. The value of more strictly pharmaceutical tonics taken from the vegetable kingdom is here attributed, in a great measure, to their direct astringent effects on the mucous membrane of the stomach, and led by this idea, Dr. Inman has habitually substituted for them pure tannin, as a strengthening remedy, and has found it very useful. Upon the use of opium as a tonic, there are some exceedingly suggestive remarks, founded on experimental observations which every one can make for himself, and most probably will be able to cap from memory. This is an excellent feature, by the way, in Dr. Inman's illustrations; they are, as a rule, drawn from common experience, not from exceptional instances. True, we have now and then "a strange story" in a note, but it is always quoted on the authority of a named witness, and is never used to establish a principle.

The tonic effect of opium is not explained by the author; might we suggest that it seems to us to depend on a temporary restraint

of the destructive assimilation caused by nervous action, and that it would consequently be found beneficial in those cases only where nervous action is excessive. If we are right, an indication of the proper cases in which to use it would be established.

The sketch we have given will serve to introduce this very suggestive volume to our reader, and lead him to a pretty just anticipation of the solid food for thought which it affords. It only remains to us to say that this nutritive diet is rendered palatable by an agreeable dressing; the pages are ornamented by anecdote and allusion, sweetened from time to time by touches of human feeling, and occasionally made piquant by what the author must allow us to call a little "sauce."

An Introduction to Practical Chemistry, including Analysis. By John E. Bowman, F. C. S., etc. Edited by Charles L. Bloxam, F. C. S., etc. 4th American, from 5th revised London edition. Philadelphia: Henry C. Lea, 1866.

This book—the considerable sale of which is attested by the number of editions through which it has passed—will prove useful to students undertaking for the first time practical and analytical work in the Laboratory. It is purposely rendered as simple as possible, and the details of experiment are very fully explained. It includes the subjects of general manipulation, the preparation of gases, the use of the blowpipe and blowpipe analysis, volumetric analysis, the qualitative reactions of the principal bases and acids, systematic qualitative analysis, quantitative analysis with examples for practice; the preparation, examination and use of re-agents, together with a number of useful tables. Some changes and improvements have been made in this new edition, the date of which is March last. In view of the discrepancy of practice existing in England as to the use of the older or dual as contrasted with the newer or unitary notation, all chemical symbols have been discarded, and the student is left free to adopt either system to which he may become accustomed.

J. W. M.

Physicians' Clinical Record. A Tabulated Diary Designed to Facilitate the Observation and Record of Symptoms, Diagnosis, and Treatment at the Bedside; also of Post-Mortem and Medico-Legal Investigations incident to the Practice of most Medical Men.—By John I. Hulse, M. D., of New Orleans, La.

This is the title of a little work prepared by one of our junior practitioners, intended to facilitate the collection and classification of

clinical observations, and shortly to be published. We have been favored with an examination of some of the manuscript sheets, and take pleasure in commending the excellent arrangement by which all the points desirable to be recorded are easily and compactly systematized, convenient for future reference. To the busy practitioner or hospital attendant, desirous of having at command the results of his past experience, it will prove a ready and invaluable means of securing this useful end, and might be of incalculable advantage to the medical teacher and statistician. We have seen nothing else so well adapted to these purposes, and hope soon to announce its appearance before the public.

The following, from the author's preface, will serve further to explain the object of the work :

"For the encouragement of systematic clinical observation, a concise but comprehensive and scientific investigation and record of significant facts at the bedside, this little manual has been prepared with the hope that it may prove useful to practitioners as well as students in their pathological researches.

In the wards of a crowded hospital, the student is often bewildered with the multiform manifestations of disease. There is too much vague looking on, and not enough of close observation in noting the distinctive peculiarities of morbid appearances, and carefully recording them. Let him do this, and he will eventually become an exact and reliable physician, whose judgment will rarely be at fault in the emergencies of practice.

It is remarkable that some of the greatest practitioners seldom or never write. It is a melancholy thought, too, that the grave should close over their wisdom, and that the improvements they have originated in science should not be made available for the welfare of posterity, after they have ceased to be the actual dispensers of their matchless knowledge and skill.

Little hope is entertained of repairing this evil; but, surely, if any means be devised to contribute towards it, even with partial success, the effort will not have been made in vain.

Those who use this book will find it most available to employ phonographs, or word-signs, which constitute intelligible abbreviations of comprehensive generalizations in a very limited space."

Clinical Observations on Functional Nervous Disorders. By C. Handfield Jones, M. B., Cantab.; F. R. C. P., Lond.; F. R. S.; Physician to St. Mary's Hospital. 8vo., pp. 348. Philadelphia: Henry C. Lea, 1867. From Messrs. Krull & Dickey, Booksellers, New Orleans.

The modest title which Dr. Jones gives to his work might bespeak its merits to a discerning mind without a careful examination of its contents; while we are sure that it would be found well worth the while of all who have even a moderate share of time to devote to medical literature.

The plan of illustrating his chapters on the different neuroses by reports of actual cases, possesses in a degree the advantages of clinical lectures on Practical Medicine combined with the didactic course of the lecture room, now acknowledged and adopted as the best system of teaching in the schools.

The conservative inclinations of the author we think especially commendable in this age of *progress*, "so-called," for sensations are now as fashionable in Medicine as in the speculative sciences, and mischievous enough. In this class of diseases there is a broad and tempting field for speculation, both in pathology and therapeutics, in which an enthusiastic mind could hardly fail to be lost, since anatomical researches have been able so imperfectly to define its bounds and landmarks. While he refrains from riding therapeutical hobbies, he avoids the opposite extreme of skepticism in regard to the value of remedies. Though this is less the besetting tendency in the Medical profession than the opposite extreme, credulity, there is not wanting a class of minds which affect a disbelief in the inherent efficacy of drugs. In such a capricious class of maladies, where every thing in its turn seems sometimes to be useful, there is a temptation to conclude that all are equally useful or useless; and much observation and nice discrimination are needed to arrive at correct conclusions. As Dr. Jones has heeded the ancient injunction of Phœbus, "*In medio tutissimus ibis*," correct in fact as in fable, we commend him as safe authority.

Speaking of remedies, it is noticeable that, while he approves of digitalis in large doses in a certain form of delirium tremens, he does not recognize bromide of potassium as applicable to any form of this complaint. While on the treatment of epilepsy, he gives it a passing notice, but ignores it again in insomnia. From the recent repute of this remedy in the treatment of the neuroses, it might be expected that he would give it more notice, either favorable or otherwise.

It is also to be remarked that he includes angina pectoris among the functional nervous disorders. The reason is given in his own words: "I consider it to be *au fond* a neuralgia." As regards the connection between this and the organic lesions, which he admits generally, though not invariably, to be present, he is not very clear; but we are to infer, from the quotation, that they are either a consequence of the functional disorder, or an accidental accompaniment. The actual pathology of this interesting malady is still an open question, but we forbear to array authorities or offer any speculations of our own.

Chapter XXXV is devoted to the consideration of "Malarioid Disorder." He thus plainly includes the phenomena resulting from malarial poisoning among the neuroses, an idea rather dimly shadowed forth by other nosologists. This is not the proper place to discuss the nature of the malarial poison or its mode of action, subjects which are attracting great attention and are likely to be better understood at no very distant day. Here, however, the author confines himself mainly to the neuralgic or painful symptoms due to the toxic agent.

We have thus called attention to some of the peculiarities of Dr. Jones' work, the merits of which peculiarities we shall leave with our readers to judge for themselves.

An Index of Diseases and their Treatment. By THOMAS HAWKES TANNER, M. D., F. L. S., etc. 8vo., pp. 397. Philadelphia: Lindsay & Blakistone, 1867. From Messrs. Krull & Dickey, Booksellers, New Orleans.

DR. TANNER is already favorably known to the profession, as the writer of several very acceptable practical works. The book before us presents an alphabetical list of most of the medical and surgical maladies, to which the human organism is subject. The derivation of the name of each disease is given, together with its synonyms. Then follows a brief description of the symptoms, and at the close a sketch of the appropriate treatment. Under the latter head reference is constantly made to an appendix of formulæ convenient for use.

The succeeding section is devoted to a brief description of the climates of the various regions throughout the world, which are resorted to by invalids, including some excellent suggestions and directions to valetudinarians.

Then follow some general observations on mineral waters, with a description of the principal watering places resorted to in England and on the Continent of Europe.

The whole comprises, within a convenient compass, a vast amount of useful information, admirably arranged for easy reference. But it should be understood that this is not a book to be put in the hands of a student or a mere tyro in the practice of medicine. Like a keen blade, it may be very effective and useful in skillful hands, and a dangerous weapon in those of the unlearned or heedless. Not intended for a systematic treatise, it will be found highly convenient and useful by the busy practioner, who may not have time to search out the desired information from the large treatises which formed the basis of his early instruction.

Editorial Correspondence.

[Dr. Stanford E. Chaille, co-editor of this Journal, contributes the following valuable letter to our pages. As the information posesses practical suggestions, we spread it before our readers with the assurance that in future issues, they may expect from the same source communications alike important and instructive.]

Paris, January 1st, 1867.

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Thus far, I have but poorly fulfilled my promises of bi-monthly contributions to our pages. Let me hope that, by borrowing freely the ideas and words of others, I may be enabled, for this number at least, to add something both new and instructive to our publication.

You will remember that, during the winter of '65-6, we were much interested in the subject of the medical and sanitary reformation of Louisiana by legislation; but were no little embarrassed at every attempt made to decide on what practical principles State laws should interpose to throw their protection over the profession and the public; and to clothe those principles in the brief and concise words which should distinguish legislative acts. We very much needed, to guide us, the light of experience, the history of similar legislation in other countries, which the libraries of New Orleans did not afford. I believed that, on reaching Europe, the compilation of a history

the legislative acts of the most civilized nations in regard to medicine, would repay the trouble. Personal observation has caused me to doubt it. In Great Britain and in France we find the same complaints as in Louisiana, viz., quackery coining ill-gotten wealth unblushingly; the medical profession inefficiently protected and inadequately paid; the public guarded neither from ignorant pretension, nor from the avarice of venders of poison; and the laws inefficient either in their scope or their execution. The testimony in the recent trial in London of Hunter vs. the Pall Mall Gazette, throws some light on this matter, so far as Great Britain is concerned. As to France, which is, I believe, at the present time the best governed country in the world, possessing not only good laws but a power such as no free government has ever practiced, and a will to execute them; we find here, notwithstanding its laws against quackery, that quacks practice openly and with comparative impunity; that, notwithstanding its laws against prostitution, its streets are crowded with clandestine prostitutes, and its hospitals with their diseases; that, notwithstanding its laws against the dispensing of medicines on any order except that of an M. D. P., there is really little difficulty in procuring any medicine any one pleases. Strange to say, though the French law interposes all its authority against the vending of poisons by the dispensing apothecary, it does not interfere with the wholesale druggist who sells them in quantity, *practically*, to suit the purchaser. These remarks are not intended to show that legislation is not needed with us, nor that it has effected no good elsewhere; but that our deprivation of it should not cause us to be too sanguine as to the benefits which would ensue. I am well satisfied that those physicians of our State, who years ago, at different times, attempted to have enacted laws embracing a thorough system of registration, began in the right place, and that the valuable sanitary information derived from such a system is the means best calculated to instruct the public as to the extent of remediable evils, and thus arouse it to the importance of applying the proper remedies. Proper registration laws are, in truth, the foundation of all wise legislation devised for the protection of our profession and the public.

With us, complaints are not infrequently heard of the little honor bestowed on physicians by legislative bodies, and by the public which so often grudgingly and inadequately remunerates their services. In illustration, allow me to furnish you a European picture of the same subject:

The Medical Profession at Brussels.—Begin your career by spend-

ing seven or eight years of your life at a grammar-school; then get yourself matriculated at some university, pay your fees, work day and night to pass your bachelor's examination with credit; then go to the dissecting rooms for another couple of years, to get an appetite for your dinner by inhaling the "sweets of Arabia," the *Syrion aglaisma*, as Æschylus has it, you are likely to find there, letting alone the pleasure you run the chance of enjoying in case an unlucky slip of the bistoury were to render the amputation of a finger or two necessary; then spend another couple of years in hospital practice, inuring your senses to the most disgusting objects diseased humanity can present, and, lastly, weaken your eyesight and risk a brain-fever by hard reading far into the night, in order at length to fight your way to a doctor's degree, the *acme* of human bliss—and for what? To get ONE franc FIFTY-FIVE centimes per day, after risking your life for months in attending *gratis* patients laboring under cholera, during a fearful invasion of that epidemic. We are stating nothing but the simple truth, a bare fact. The municipality of Brussels has just awarded that munificent remuneration to the physicians of that capital. Dr. Vleminks, President of the Academy of Medicine at Brussels, and a senator, has protested against this absurd decision in the following words: "I could have understood the municipality's merely thanking my courageous colleagues, and assuring them of the gratitude of their fellow-citizens, and I am certain every one of them would have been satisfied with that; nay, I know many who never dreamt of a pecuniary remuneration: but to offer them one franc fifty-five centimes a day is degrading them, and that no one has a right to do." Dr. Caffe, in devoting an article to this subject in the *Journal des Connaissances Médicales*, compares this pitiful allowance with the salaries received by some singers at the French Opera, which are as follows: "M. Naudin receives 110,000fr.; M. Faure, 90,000fr.; M. Gueymard, 72,000fr.; M. Vilaret, 45,000fr., M. Morère, 40,000fr.; M. Obin, 38,000fr.; Mme. Gueymard, 60,000fr.; Mme. Sass, 60,000fr.; Mlle. Battu, 60,000fr. Among the ballet dancers, Mlle. Salvioni gets 30,000fr.; and Mlle. Fiorelli, 24,000 francs." [5 francs=1 gold dollar.]

The profession, as a body, is even worse paid than with us, and abundant evidence is found to confirm the observation of Dr. Stone, not the first nor only one to arrive at a like conclusion, that the physician who does not find in his pursuits pleasure sufficient to repay him for his toil, will fail to find adequate reward in either its honors or emoluments. A Professor of distinction and wealth remarked in my presence the other day, that he attended one rich family which paid him but 3 francs (60 cents) a visit; that this family was one of the first which patronized him in the beginning of his career, when his charge had been only 3 francs; that he had never demanded more; and that it "had the impudence" to continue to impose on him his original fee. In fact, physicians here, of great professional reputation and merit, attend patients for very small fees, particularly in the outset of their career; for there is no tariff of prices to

which all conform, nor does the habitual charge of a small fee derogate from professional honor and standing. As one advances in reputation, his prices advance, so that when he attains such a position as Nélaton's or Trousseau's, he will hardly look at a man's tongue without requiring from $1 to $2), *argent comptant*. Thus the pecuniary rewards of the physician are more unequally bestowed than with us, and we find a few amassing very large fortunes, side by side with many of equal merit and professional reputation, who are almost in destitution. Hence results among the Professors, each of whom receives from the State but $2,000 per annum, a constant contest for the practical clinical chairs, which always attract to them clients and money; but at the same time often do very great injury to the interests of the medical student and the college. There are abundant instances to prove that Professors who had obtained their position by their study of, and superior acquirements in, special branches, have shown a manifest inferiority, when transferred to the clinical chairs, to the great detriment of their pupils and of their own reputation. And sometimes, as in the case of Grisolle, worse results flow; for he, exchanging the chair in which he established his reputation for another, found himself forced to such constant mental application to sustain himself, that his health utterly failed, and he is now regarded as "off the stage."

But if the pecuniary rewards of the profession are more unequally and unjustly distributed here than with us, it surely is not so with its honors. Here it is well recognized, that the knowledge of disease and its remedies is but *one* element in the pecuniary success of the medical man; and that a good toilet, a handsome turnout, a fashionable office, hosts of friends, and that tact which understands how to be "all things to all men," are other very important elements (often the chief ones possessed) in the solution of the great problem—how is fortune to be attained. So a man may possess all these essentials, and yet his profession bestow no badge of honor, until he has entered the arena; and then, in contests which demand all his strength before the public and with competent judges, has conclusively shown his superiority over his competitors. Here, physicians are forced to show to the profession the degree of their merit; and not only their writings and lectures, but also their diagnoses and remedies at the bedside, are openly and unsparingly criticised, calling forth often great ability and eloquence in defence.

With us, the members of the bar and the public form a better estimate of a lawyer's merit, than is formed of that of physicians. Here

the physician who seeks place and honor, must undergo the same ordeal our lawyers are subjected to; they must, so to speak, plead in public. Therefore it is that, whilst favoritism, of course, exercises an influence here, as wherever human frailty exists, it is powerless to give position to *manifest incompetency*. Can all American Medical Schools say as much? Still farther, public success cannot force a man into position, though the position often brings pecuniary reward; and yet all, except the one interested, reject this, and justly think that the extension of a teacher's clientelle is necessarily a diminution of his labors for and of his usefulness to his institution. Some of the Professors who are most highly appreciated by the profession, have few or no patients outside the Hospitals, and are extremely poor. Let me add too, that some of those best known to us and the world by their writings, are as inefficient *teachers* as you ever heard make a muddy subject still muddier. Sit down on their benches with a fair general idea of the subject, and you will, nevertheless, come out with your hair in violent disorder, and with a faint suspicion that you are going crazy. But those are exceptions to the rule, and when you find a Professor a poor teacher, you will also find that he invariably possesses, in compensation, distinguished merit, and superior attainments in that branch whose chair he fills.

During the past year changes have occurred in the Medical Faculty, which have deprived this great medical centre of the services of many of those whose names stand high in the temple of medical fame, and are most familiar to our profession.

Chailly, Honoré, Guillot, Rostan, are dead; Trousseau, Andral, Grisolle, Ricord, Jobert de Lamballe, Cruveilhier, Piorry, and perhaps others, are so disabled by age or other infirmities that, for their ambitious successors and future triumphs, they are *hors du combat*. And last mentioned, but in my esteem first of all, Claude Bernard, has, from disease, been long incapacitated, and has not yet resumed his course, though I am told his health is almost entirely restored, and for the past six weeks have been constantly assured by his friends that he would soon enter again into active service.

The above names, together with their cotemporaries, still in efficient condition, Velpeau, Nélaton, etc., constitute a brilliant galaxy of medical talent, such as no other capital in the world can show; and you will not be surprised to learn that their disappearance causes here no little anxiety and competition. Fears are expressed, that the Paris School will lose its long-established preëminence, and will find none to

worthily fill the places of those whose career of honor and usefulness is ended. It is true, that there are no men of equal reputation, from whom to choose successors, nor perhaps any who promise as brilliant futures; and yet the initiated assert, with confidence, that they have, at any rate, the great desideratum as good, and, in many instances, better teachers. My own opinion is comprehended in this—that I have profound confidence in talent, in discipline, in labor; that the French are not inferior to other nations in talent, and that, in medical education, they are superior to all other nations in the thoroughness of their discipline and the amount of their labor.

So long as this school forces on its graduates and the candidates for its honors a greater amount of well disciplined labor than other schools, so long will it continue superior to all rivals. I say this, though I know that in recent years Germany has deserved greater honors in Histology and Pathology; and Great Britain, greater in Diseases of Women, Urinary Disorders, and perhaps other special subjects. I say it, though well aware that a large number of American physicians regard their French brethren as unreliable, impracticable; and are partial to the old sneer that "the French physician gives infinite labor and pains to his diagnosis, and then hurries his patient to the dead-house to confirm it." Substitute, *and after death, hurries to the dead-house to confirm his diagnosis,* and you will substitute a flattering truth for a scandalous falsehood. The fact is, that we, men of the South, who, when every nation's hand was raised against us, received from the head of this people the only words of good cheer which greeted us, should learn to better estimate the people he represents. Our very language is hostile to the French, and in it they are historically represented to us, even in our childhood, with no more regard to truth by their opponents, than we are now correctly betrayed by ours. For my part, I have no difficulty in finding in Paris as many as truthful, worthy, practical, talented and laborious members of my profession, as I have ever had the honor of extending my hand to in any part of the world. Those whose experience is different, have been either more or less discerning than myself, and certainly less fortunate; for I rejoice that I find abundant cause to love and honor France and the French, the land and the people of my Huguenot ancestors.

One source of this error among us results from the skepticism of the French school in regard to indication, which, in my estimation, flows from the fact that it is *essentially practical,* demanding absolute

proof, and not accepting hasty and inadequate testimony, preferring innocent *tisanes*, wherever powerful remedies are of doubtful utility. Do we not know that this is the invariable tendency of experience and knowledge? If not, we may listen with profit to the candid and honest convictions of our seniors, and we shall find them in a worse condition than Astley Cooper, who, having had twenty remedies for every disease in his youth, found himself, in his old age, with twenty diseases without any remedy. Fortunate Sir Astley, if he had *only* twenty diseases without a remedy!

After my arrival here, though not my first visit, I underwent the same experience as others with similar purposes, the loss of six weeks spent in making the discovery that I could gain but little by following the celebrities about their wards. By the end of that time, I found the men I needed, who, even if they knew less, at least taught me more, and gave me aid and opportunities for study, such as you will seek for in vain in those places where the crowd goes.

M. Leé, Professor of Therapeutics, and the recent successor of Trousseau, who has withdrawn from the faculty, kindly gave me the *entré* to his laboratory, which is devoted to the study of what is now generally, but somewhat paradoxically, styled "Physiological Pathology." Since the commencement of my studies, which thus far have been devoted almost exclusively to the chemical analysis of urine and blood, I have witnessed experiments of interest with quinine and antimony, given in experimenting doses until the death of the animal results. Whilst living, the physiological phenomena are closely observed, and after death, the pathological alterations are sought for, and the fluids and tissues subjected to chemical analysis, to discover where the medicines given are to be found, and the changes affected by them. M. Leé hopes, by such means, to be enabled in time to make valuable contributions of precise and reliable information to our limited knowledge of Therapeutics. The practical tendency of his mind may be estimated by his criticism to me of a recent treatise on the "Essentials of Therapeutics, etc." He observed: "I find such a title very pretentious for a book of several hundred pages, for ten pages would suffice for all the essential *facts known* in Therapeutics."

Prof. Leé is assisted in his pursuits by two younger men, to one of whom, Dr. Chalert, an old *interne* and aid of Becquerel's, an accomplished physician and chemist, and, what is better, a thorough gentleman, I am under infinite obligations for such aid and instruc-

tion as are very difficult to obtain anywhere. Thus far I have only watched, and given a helping hand to analysis of the blood, but shall in a few days begin my first independent essays. In studying the urine, I have done much more, and fancy myself quite well advanced. Believing that my experience in this matter may prove interesting and useful to some, I venture here to briefly record it.

Visiting Europe for causes disconnected with my profession, I yet determined to avail myself of the opportunity to rectify these defects in my medical education, which had most embarrassed me as a practitioner and a teacher. One of these defects was profound ignorance of what may be termed Chemical Diagnosis. I had too great respect for organic chemistry to indulge the hope of mastering it, but believe that, without becoming an accomplished chemist, I could obtain all the practical information absolutely essential for the physician. A brief experience enables me to assert with confidence that this is not only practicable, but far easier than is generally supposed. Bear in mind that my remarks at present are only applicable to the attainment of such knowledge of chemistry as is necessary to enable the physician at the bedside to make such examination of the urine as will furnish him with all the *practical* information needed by him, and obtainable by any chemist, however skillful, and are designed for the encouragement and benefit of those only who are now as little acquainted with the subject as the writer was a very short time since. The first thing necessary to appreciate is, that the big books written by Prout, Bird, Parkes, Hassell, Beale, Neubauer, Vogel and others contain an immense amount of chaff to a very little wheat; and that the subjects about which they write most, are those about which they know least. But do not suppose, by such a sweeping criticism, I design to disparage these works, which I appreciate highly. They are written, however, to attain or confirm a reputation on a special branch, to exhaust the subject, to enable the reader to master it in all its physiological and pathological bearings, and further, to instruct him in all the various methods (remember, but one is needed) by which each of the many ingredients may be analyzed, and thus place him in condition to make original researches for himself, and forward the progress of his profession. Books written with a purpose so laudable rightly devote very much space to the record of all facts which bear at all upon a principle unknown, but important, for by such means only can we arrive at any instructive discovery.

But it is none the less true, that a very few pages would contain

all the facts in these large books which the physician needs to aid him in diagnosis and treatment; and he may well lay aside the very large number of pages, which are filled with researches interesting to the physiologist, until those researches have resulted in establishing such practical facts as will aid him in *his* sole purpose—to alleviate and cure disease. Should my observations encourage any one to seek this knowledge, one other important fact should be known, that he may read books until he is gray, and may see others do many times that which he desires to learn how to do; but until he has gone into the laboratory and done them himself, until he has obtained *uniform* results, he will remain utterly incapable of doing more than *talk* intelligently about that which he knows not how to apply to a single useful purpose. But entering the laboratary well versed in renal physiology, and finding there a competent practical teacher, who will not lead him into constant skirmishes over the wild fields of theory and of chemistry, he will leave it in a far shorter time than he had supposed, with useful knowledge which he would not be without for much more than it cost to acquire.

Unless I commit the error of very gravely underrating the information of the profession generally on this subject, I might interest and perhaps instruct my readers, by pointing out briefly all that they would find *useful to them* to learn, and the results of my limited experience as to the best means of acquiring it. For the present at least, I shall limit myself to one or two points which have particularly struck me. One of the most instructive, and apparently easiest obtained facts in regard to the urine, is its specific gravity. Nothing can be easier than to introduce a urinometer into a vase of urine. But the result of my experience, after many attempts with various instruments, is a mistake invariably, and for the practitioner an error in that direction calculated to deceive him the most unfortunately. These instruments exaggerate. I have one from a maker of reputation and fully guaranteed (you can trust neither maker nor seller on their oaths), which gives 1045 for urine having a specific gravity of 1030 only. Until you have tested the veracity of your instrument with the specific gravity bottle, or other reliable test, it will lead you into false suspicions; unless the American instruments, which I never have tested, are more truthful than those of other nations.

Recent years have introduced to the profession the volumetric method of analysing the urine, which, when farther perfected, as it in time surely will be, will enable a plough-boy to learn in a very

short time how to analyze qualitatively and quantitatively, in a few moments, the urine as well as other fluids. However, if, at the present time, it is superior in brevity and accuracy to the old methods, for more than two of the unrinary constituents, I have yet to find them out. There, too, are the phosphates and chlorides. The principles of the volumetric method are as simple of application in some cases as they are decisive, and need only to be more fully understood by the profession to be almost daily applied.

A constituent of a fluid is sought for, by adding to the fluid some agent which will not only combine with that constituent, and it alone, but when *complete*, combination can be rendered appreciable to the eye. Could such agents be found for every chemical element and compound, nothing would be easier than an exact analysis of every fluid. But unfortunately few of the agents yet known behave as you wish; they will combine not only with the constituents you ask, but at the same time with others, and refuse to inform you when they have exactly completed the work given them to do. In some instances, however, and notably with the chlorides and phosphates, they, coaxed by a few chemical tricks, so to speak, behave most admirably. We hope that the illustration of this will prove of interest. The chloride in common salt will, if subjected to the influence of nitrate of silver, quit the sodium and combine with the silver. The chromium in a chromate of potassa will, in like manner, quit potassa to combine with silver; but silver loves chlorine more than chromium, and when given both of them together to act on, will not touch the latter until it has completely eaten up the former; and what is of great importance, furnishes to the eye a distinct and characteristic color *instantly*, as soon as it finishes with the chlorine and begins its action on the chromium. (As I am not to be read by Liebigs, I expect indulgence for unchemical metaphors.) A hundred books will tell you the grains or parts of silver required to combine with as many grains or parts of chlorine, which fact, with the application of those given, enables you to determine the exact quantity of chlorine contained in the fluid subjected to this analysis. For instance, to an ounce of urine, add a few drops of bichromate of potash; to this add, *guttatim*, a graduated solution of nitrate of silver (in each drop of which you know exactly how much of nitrate of silver there is), and if a novice like myself, you will witness with extreme pleasure the striking change in color which takes place, as soon as you have added drops enough of nitrate of silver to eat up all the chlorine in your urine. Then it is but a moment's work to calculate that, if it took

ten drops of your graduated solution of nitrate of silver to eat up the chlorine in one ounce of urine, what is the quantity of chlorine in that ounce, or fifty ounces, or one thousand parts of urine; and any man can be taught how thus to estimate the quantity of chlorine and chlorides in an animal fluid, in as little time as it has taken me to write this illustration of the volumetric method of analysis. But alas! clinically, the chlorides are of very little practical importance, and after you have estimated them, you have in all, except a very few cases, only learned that your patient eat a little more or less salt the day before; for which you did not need the assistance of the volumetric method of analysis.

But the phosphates are of some clinical consequence, and their deposit in the urine not infrequently alarms the patient and puzzle his doctor. We owe to Neubauer and Vogel a most rapid and accurate means of estimating them. I know of no other source where can be found a serviceable description of this process, than in this book. Beale's book, the most recent, only alludes to it, stating that he intends to try it. (By-the-by, he has published a new edition of his "Urine and Urinary Deposits," also his "Practical Application of the Microscope" which I am daily expecting.) I found here in Paris, that they had only read about it, so that it is well worth while to record in our Journal valuable information, so difficult to procure. For Neubauer and Vogel's book (translated into English) is a publication of the new Sydenham Society in London, whose publications are issued only to subscribers. However, a golden guinea per annum constitutes a subscriber, and supplies him with these select works. Profs. Jones and Bemiss are, I suspect, the only men in Louisiana supplied with "Neubauer and Vogel on the Urine," probably the best book published on the subject, and of which, I learn, there is a new German edition. Let me add here the curious fact, that the French have no books on this special subject, except the translations of Bird and Beale. Everything written by them is contained in their books on organic chemistry generally.

Neubauer and Vogel's volumetric method of determining the quantity of phosphates in the urine depends on the reäctions of uranic oxide. Leaving aside the theory on which it is based, I shall limit myself to such description as may enable one to use it. Three solutions and a bottle of ferrocyanide of potassium are needed. The three solutions are composed as follows :

No. 1. Phosphoric Acid solution.

Take of pure crystallized phosphate of soda, 1.0085 grammes.
" " distilled water, 100 "

N. B. Triturate well the phosphate of soda, and dry it between the folds of bibulous paper before weighing.

No. 2. Solution of Acetate of Soda.

Take of acetate of soda, 10 grammes;
" " distilled water, 90 "
" " pure acetic acid, q. s. to make a solution of 100 grammes.

No. 3. Uranic Oxide Solution.

Take of uranic oxide, 2.03 grammes;
" " acetic acid, q. s.
" " distilled water, q. s., to make a 100 gramme solution.

Before proceeding farther, permit me to say, that the scientific men of all nations are fast abandoning their own weights, measures, etc., and adopting the decimal system of the French, the only system founded on accurate and scientific principles, the system which is easiest understood and applied. The English and Germans use it almost exclusively in all chemical researches, and it is so superior in conveniences, that once learned, it is very difficult to return to any other. It is most unfortunate that America, which first adopted this simple system in its money, did not extend it to its weights and measures. Nevertheless, I am well aware that the use of unknown terms is annoying, so I will add, once for all, that one *gramme* equals 15.44 English grains; that one cubic *centimetre* of distilled water weighs one gramme; and that 28.4 cubic *centimetres* equal one ounce. By the application of these simple facts, French weights and measures, so far as used in this communication, may be reduced to English standards.

The tests above given for the phosphates are thus applied: to fifty c. c. (i. e. cubic centimetres) add five c. c. of the solution of acetate of soda; then, after heating this, add the solution of uranic oxide in small and known quantities, and as this solution is added, a drop of the urine is from time to time dropped on a white plate, and touched with the point of a glass rod which has been dipped in the ferrocyanide of potassium (or a solution of it). Now, as soon (and not before) as sufficient of the uranic oxide has been added, your glass rod will produce a magical color, which tells you at once, *hold, enough.* For every cubic *centimetre* of your uranic oxide solution added to the urine, there are in the urine five milligrammes (0.005 *grammes*) of phosphoric acid, so that if two cubic *centimetres* have been added,

you have determined that there is one *centigramme* (0.01 *gramme*) of phosphoric acid in the fifty c. c. of the urine under examination. Should it be desired to estimate the proportion of phosphoric acid which is combined respectively with the earths and the alkalies (a point often of practical consequence), the earthy phosphates in fifty c. c. urine are precipitated by ammonia, and this precipitate, washed and collected on a filter, is dissolved in fifty c. c. of distilled water. The phosphoric acid, combined with the earths in this solution, is then determined in exactly the same manner as was estimated above. Having then (1) all the phosphoric acid and (2) the phosphoric acid combined with the earths, (3) the phosphoric acid combined with the alkalies is determined indirectly, being the difference found by subtracting (2) from (1). With this test the alkaline phosphates in the filtered urine cannot be determined *directly;* for to the urine containing them, ammonia has been added to precipitate the phosphatic earths, and ammonia interferes with the reäction (chemically perhaps inexact, but practically, for quantitative analysis, true).

A question of moment is, how is it established that one c. c. of the uranic oxide solution is equivalent to 0.005 *grammes* (5 *milligrammes*) of phosporic acid? So far as accuracy of result is concerned, of course the whole matter depends on this statement. This is established by the phosphoric acid solution, by which the uranic oxide solution must in every case be tested and graduated. Neubauer and Vogel state that the phosphoric acid solution contains in every 50 c. c. one tenth of a *gramme* of phosphoric acid; therefore 20 c. c. of the uranic oxide solution, added to 50 c. c. of the phosphoric acid solution, should be just sufficient to produce the reaction with the ferrocyanide of potassium. This method of determining the quantity of phosphoric acid, and thence the phosphates in animal fluids, is remarkably quick and easy of execution, and admirable in results; which, when compared with those obtained by direct chemical analysis, give almost infinistesimal differences —differences too small to be of the least consequence, either in diagnosis or in physiological researches. It is well, however, to add that my experience is, that the prescriptions given for the uranic oxide solution is not to be trusted, until first tested with the phosphoric acid solution; and farther, that though *N.* and *L.* state that this latter contains for every 50 c. c. exactly one-tenth of a *gramme* of phosphoric acid, I have not yet satisfied *myself*, as I will in a few days, that their statement is entirely reliable.

It will be observed that, though stated that the *chlorides* and phosphates were readily determined by the volumetric processes given, yet that the results furnished are really the quantities of chlorine and phosphoric acid. It is these, and these only, which are really of practical value; and from these can be estimated their salts, approximatively only it is true, but quite sufficient for every clinical purpose. The bases with which they are combined are very variable in their proportions, and the study of this variability has thus far led to no practical deductions. The phosphates constitute an exception only so far as the determination of the relative proportion between the earthly phosphates (magnesia, lime and ammonia), and the alkaline phosphates (soda and potash)—at the bedside nothing is gained by the knowledge, for instance, of the exact quantity of phosphoric acid, which on the one hand is combined with the soda, and on the other with the potash. From such knowledge, useful deductions may perhaps in the future be drawn, but, as yet, this has not been done. If I have not thus demonstrated the facility with which the chlorides and phosphates in the urine may be estimated, it is not because it is not easy in practice. Now in this fluid, the only inorganic salts of consequence are the sulphates, which are estimated by means which, if once carefully watched, can be repeated by any man of common sense, even if he never opened a book on chemistry; and which being found, you will seek in vain to discover what you have gained thereby.

Neither does the determination of these organic constituents, which *concern the practitioner*, present any great difficulty. Urea, uric acid, albumen, sugar, bile, mucus, pus and blood, can all be detected by reägents or the miscroscope with ease, and the quantities of the first four readily estimated. What else is left? The extractives; that is to say, a large number of different and undetermined organic substances, which, united under one name, are, we know, of importance, but we *do not know* of what importance; and which are only obtainable by indirect means. Finding you have fifty grains of organic solid matter, and that of this thirty-five grains are urea, uric acid, etc., it does not require a great chemist to find out that fifty less thirty-five equals fifteen; and that he is authorized to assert forthwith, that he has fifteen grains of extractives, so called.

The fact is, books and teachers generally represent the whole subject as much more difficult than it is, so far as the acquiring of all the knowledge likely to be of absolute service to those, whose only

purpose is to learn those things which will be useful to their patients. And when books and teachers occupy their time with long discourses about alkapton and alloxan, tyrosine, leucine, inosite, hypoxanthine, uropalmatine, etc., etc., that time is worse than wasted, for the brain is confused, courage disheartened, and far more important information neglected. But if one's object in life be to master organic chemistry, and assist by his own original researches in solving some of the great mysteries of life and disease, then he will find that an exact knowledge of all these substances, with their brain-confusing names and properties, is necessary; and that a long life spent in such studies will still fail to satisfy the desires and designs of a noble ambition.

As I am narrating the results of my experience about this matter, for the benefit of those as ignorant as myself, I shall venture to make a confession of ignorance which I will join any one in denouncing as stupid; but having found men of my own age of superior talent and education just as ignorant, it is quite possible that some of my readers may be no better off, and therefore will willingly excuse me. Like thousands (I believe) of my profession, who have "done" one or more courses of chemical lectures, I finished them with a confused notion that there were such things as capillarity, latent heat, galvanism, atoms, molecules, equivalents, etc.; of all of these things I have gained more or less information since, but I have never known until recently, that the knowledge of the chemical equivalent of a body was of the least practical conseqnence to anybody but a professional chemist, and never understood exactly how he made use of such knowledge. To this fact I respectfully call the attention of Professors of Chemistry, who on examination will find either that their students are more intelligent than myself and many of my present associates (all of whom are M. D. P's.), or that they have better explained this simple, practical point than our professors did.

Having the equivalent of a salt (or any chemical compound), also the chemical equivalents of each of the constituents of that compound, the exact quantity of any constituent in a given quantity of the salt is readily determined. For instance, it is desired to know what quantity of phosphoric acid there is in a solution which contains fifteen grains of phosphate of soda. Suppose that your chemistry, or the back pages of the "U. S. Dispensatory" tell you that the chemical equivalent of phosphate of soda is 224.6, and that the

chemical equivalent of the phosphoric acid in phosphate of soda is 72; then what you desire to know is as simple as the rule of three. Your question is, if 224. 6 parts of phosphate of soda contains 72 parts of phosphoric acid, in fifteen grains of phosphate of soda how many parts or grains of phosphoric acid are there? i. e., 224, 6: 72 :: 15: x, or the phosphoric acid. Now the same process is applicable in all cases, and the reader will assent to the observation of my instructor, "*mon chere, c'est d'une simplicité primitive.*" Fortunate for the chemist that it is so, for its application is needed in almost every analysis he makes; and the result is infallibly correct, *provided* your equivalents be correct, and your medicine, salt or chemical compound be pure.

Contrary to my own design, when this letter was begun, I have given far more space to its contents than I expected. What it was proposed to give two or three pages to, merely as introductory to matter which I believed would prove of more interest, has occupied all the space intended for the whole.

Something of the Turkish Bath, of my studies (at the Hotel Dieu) of the Diseases of Women, of new applications of physics to physiological pursuits, of the recent contributions of experimental physiology, etc., etc., is in my note book, and will be prepared for publication at once; I trust in time for this same number (March), as novelty may lend to these subjects an interest, which my pen may but feebly sustain.

London Correspondence.

Lewis' Library, Gower St., London,
January 12th, 1867.

To the Editors "*New Orleans Medical and Surgical Journal.*"

Sirs—In my last letter I omitted to mention three London Medical Schools, viz., St. Thomas', Charing Cross and the Westminster Hospitals. St. Thomas' is an old and well endowed hospital; the two last are supported by voluntary contributions. Of course the medical schools attached to the hospitals are not free. The average cost to a medical student who may wish to attend the medical curriculum

of about four year's duration, with all lectures for the College of Surgeons and the Apothecaries' Hall, or for the degree of M. D. in the London University, would be about £100, or five hundred dollars, exclusive of the price he would have to pay for diplomas. The London University is just a degree-giving body, which at present has a location in Burlington House, Piccadilly. The innumerable medical schools, both in the metropolis and in the provinces, may be called the Colleges of the degree-giving body, which examines in its lodgings in Burlington House. Government is about to grant a sum of money to build a proper edifice, which is a source of rejoicing to those savans who belong to this body. Most medical students, however, are satisfied with the diplomas of the colleges of lawyers, physicians, and of the apothecaries' company, as the University of London requires so very many years of study, and so many examinations. The M. D. Lond. is considered a very good degree, but the M. D. Oxford or Cambridge takes precedence, owing to the antiquity of the latter. There are very many English physicians and surgeons, whose means have not permitted them to wait dangling about in London long enough to qualify for the M. D. Lond., who, when in good circumstances through successful practice, would often like to add the degree of M. D. to their working diplomas from the colleges of surgeons and physicians. As, however, they are unable to leave their practices to follow up a curriculum, they are glad to take honorary degrees from foreign universities that are not quite so exacting in their requirements as the London university, which is forced to make up for its lack of prestige by a ridiculously high standard of qualification. I do not know whether any Americans would care to take English degrees, but if they would, I don't know of any universities that they could receive an honorary degree from; although it might not be difficult for them to obtain a diploma from the colleges of surgeons and physicians of either London, Edinburgh or Dublin.

I do not think any student of medicine can live in London under £100 a year. With a view of keeping together the various and vexed interests of the many corporations, and also with a view to keeping some sort of check on medical education and on medical practitioners, a Medical Council has been instituted, which keeps a register of all qualified medical men. On gaining a diploma, whether in Dublin, Edinburgh, Glasgow, Durham, Oxford, Cambridge or London, the young practitioner is obliged to register it at the office of the General Medical Council of the United Kingdom. A fee is de-

manded by the Council for this act; so a young man has first to pay for his lectures, his hospital practice, and his subjects for dissection. Then he has to pay for his diploma or degree, and he has also to pay the Council for the registration of the said degrees or diplomas. The Medical Council is a most incompetent and a most incongruous body. A few members are chosen by the crown, and the rest are simply the delegates of the various diploma and degree-giving bodies in the United Kingdom. Its sittings cost a great deal of money, which money comes out of the fees paid by newly fledged doctors, who are obliged to be on the official list, to enable them to recover in a court of law the various charges due for professional service. Once a year this harmless, though ponderously verbose sitting of the council comes off; and hitherto it has been chiefly concerned as to the education of the young men who are about to enter the profession. In the Medical Council are the representatives of many different diploma-granting bodies. Some of these bodies have the very highest possible tests; others grant diplomas for either surgery alone or medicine alone; and those institutions which can give a good working diploma at the least trouble, are likely to retain their position of being the most favored by students, and are therefore financially the most successful. It stands to reason that the sole aim of each delegate is to heighten the standard of education of his neighbor's college, with a view of equalizing the chances of his special body being wooed by the students.

Our Medical Council being, as it were, a council of aristocrats, those who are past the skim-milk of the profession, and who do not understand the wants of the "working" members of the medical and the surgical body, it naturally does not inspire much confidence among the great body of the profession. We want to see delegates from the great body of general practitioners. The colleges and corporations at present govern themselves, and are jealous of interference by the great bulk of their licentiates and members; and they elect whom they choose out of their little governing coterie, to be their mouth-piece in the Medical Council.

We have many Scientific Societies in London, and there are many in the provinces. Medical men squabble wherever they may be, but they always make out that they are brimful of brotherly feeling. They therefore are fond of associating themselves together in little bands, and calling it a "Medical Society," or a "Medico-Chirurgical Society." The three capitals possess Medical Societies, but London must

be allowed to bear off the palm. The "Royal Medico-Chirurgical Society," in Berners Street, is a society worth belonging to. Entrance fee, £6–6–0. Annual subscription, £3–3–0. It has fortnightly meetings, when either medical or surgical papers of interest are read and discussed. The *élite* of the profession belong to this society, and no man who advertises either directly or indirectly, or has not the highest professional character, can hope to be elected. The Medico-Chirurgical Society can boast of a most perfect medical library, and no medical gentleman should miss calling to see the rooms and the library of this society. The reading room and library at the British Museum should not be missed; but for *medical* purposes the library of the Medico-Chirurgical Society is equally useful, not to mention its being so much more handy (being simply and strictly medical and surgical only) than the library of the nation. The Colleges of Physicians and of Surgeons have good libraries also. The Medical Society of London, though an older scientific society than the Royal Medico-Chirurgical, is thought less of, and cannot give the same facilities for study, or shew the same amount of books and periodicals as the Royal Medico-Chirurgical Society. The Royal Society is the best and most distinguished society we possess, but it is not a medical society, although many medical men have been honored by being elected. Of course there are many more medical societies besides the two I have mentioned, but they are not so remarkable as to require any particular notice.

I may now speak of our Medical and Surgical press. London has two weekly papers, viz., the "Lancet" and the "Medical Times and Gazette." Then there is a third one, which is more an Irish than an English paper, viz., the "Medical Press and Circular," being the amalgamation of the "Medical Press" (a Dublin weekly) and the "Medical Circular" (a London weekly). It is published in Dublin, London and Edinburgh simultaneously, according to the prospectus. It is very ably conducted by Dr. Jacob (of Dublin), but it appears to be more the mouth-piece of Ireland than of either England or Scotland. Dr. Druitt (author of the *Surgeon's Vade Mecum*) is the editor of the "Medical Times and Gazette," and I need scarcely say that such editorship implies a high standard of excellence in the scientific department of the paper. It is published by Messrs. Churchill, of New Burlington street, who are in the first rank of medical publishers. The "Lancet," which was founded by the late respected Surgeon, Thomas Wakley, M. P. for Finsbury, publishes

from an office of its own. It has recently lost its able editor, Mr. Ernest Hart (Surgeon to St. Mary's Hospital), who has left the "Lancet" for the "British Medical Association Journal." This latter journal is published in London every week. It is the organ of the British Medical Association, a large body of medical men who have banded themselves together with the common object of advancing the honor and usefulness of the profession. Each member pays £1–1–0 annually, and receives a copy of the Journal of the Association. There are upwards of 2500 members. They have branches and have district meetings at intervals, while once a year they meet at a grand gathering. Dr. Markham edited the Journal for some years, but on receiving the government appointment of Poor-Law Inspector, he resigned it to Mr. Hart.

The only monthly medical periodical is my own, viz., the "Medical Mirror," which is now entering its fourth year. The weeklies have so much other matter that they do not attend (in my opinion) as much as general practitioners could wish, to the review of new medical works. The "Medical Mirror" supplements the weeklies, by giving to its subscribers reviews and leading articles on the most weighty and important points that have occurred during the month. It contains also, in a condensed form, both medical and surgical opinions, in addition to picked original articles; while it ends with occasional notes and a roundabout paper on some medical social point.

The "British and Foreign Medico-Chirurgical Review" is a very excellent and high-class magazine. It is published by Messrs. Churchill every quarter, at 6s. per copy. The "Medical Mirror" is published by Mr. Lewis, of Gower street, who owns the best medical and surgical library of all private individuals in the metropolis. The "Medical Mirror" gives 64 pp., 8vo., monthly, for a shilling a month. Edinburgh has a monthly organ of the highest respectability, always containing some excellent original communications. It is published at 2s. monthly. The Glasgow University also has a monthly organ, containing excellent original communications. Dublin has its "Medical Press and Circular," and a capital quarterly magazine.

The endoscope, for exploring the urethra, has been creating a short-lived excitement in London. Mr. Christopher Heath, of Westminster Hospital, has written a good deal about it, and there has been a discussion between this young Surgeon and Mr. Henry Thompson (Surgeon Extraordinary to the late, and to the present, King of

the Belgians), as to the comparative merits of the endoscope and the *tactus eruditus*. Mr. Henry Thompson is a most brilliant operator, and may almost be said to "see" with his fingers; and it is no wonder that he sets more value upon the "*tactus eruditus*" than on the endoscope, which is to permit us to gaze into the urethra lighted up like the Thames tunnel. The thermometer in diseases; the sphygmograph for ascertaining the pulse, and for enabling us to make a sort of spidery zig-zag lot of lines on paper, to show to us the force, feebleness, tremulousness or rapidity of the pulse, are all old to German physicians, although new to many in England. I am personally of opinion that the brains behind the microscopic lens and the common sense of the man of experience, are of more value than the many "scopes" and other knick-nacks, that the student of the present day must have at their fingers' ends to "pass."

I send you a complete review of the London Hospital reports; also a most able review of Dr. Inman's work on the "Foundation for a New Theory and Practice of Medicine." I am not at liberty to mention to you the distinguished reviewer's name; but I do not think I am saying too much, if I mention that the physician who reviewed Dr. Inman's work for my Magazine and Review is a talented examiner in medicine. The "Foundation for a New Theory and Practice of Medicine" has for its ground-work the due appreciation of the "vital force," and it seems to consider that disease is more an alteration in this subtle agency than an alteration in tissues. However, I leave the entire review in your hands, to reprint or to put in your waste-paper basket, as may seem best to you.

Among the newest works that are making the most impression, I may mention Dr. T. K. Chambers' new volume on "The Indigestions." Dr. Chambers is Honorary Physician to the Prince of Wales, and he stands very high in London as one of our most advanced, and perhaps the most brilliantly accomplished medical author that the metropolis can show. Dr. Inman, of Liverpool, shines with equal lustre in the provinces; and Dr. Bennett, of Edinburgh, completes the trio of enlightened medical men, who do not tread in the worn-out paths of medicine, but who strike out for themselves new paths, and who guage all theories and all practice, however well established, by their own brilliant knowledge. Dr. Chambers' work bears 1867 on its title page, and as yet I have seen no review of it in any periodical; but as he has favored me with an early copy, I will give you a slight sketch of it for your readers' benefit. Your readers are

probably acquainted with Dr. Chambers' "Renewal of Life," a most fascinating work, which most ably advocates the "restorative" treatment, in contra-distinction to that treatment which does battle with disease by lowering the vital power. Dr. Chambers' title of "Renewal of Life" was found fault with by hypercritical reviewers—who are neither few nor far between in this "old country"—and he therefore changed the title to "Lectures, chiefly Clinical." Several editions of this work have been sold. The book before me on "The Indigestions" contains 293 pp., 8vo., and is published at 10s. It is most valuable, as being a record of *cases* treated by Dr. Chambers, in which the symptoms were most strikingly diverse, and which might have led ordinary observers astray as to the real origin of the disease. Dr. Chambers does not write in his new work on "The Indigestions Functionally Treated" a systematic medical law—to prove which the cases nicely fit in—but he records the cases and their symptoms, the treatment and the diet, and he allows his readers to make for themselves rules and laws and theories from the facts presented to their notice. Every man who wishes to be of any service to his patients, must have some fixed guiding principle or fundamental rule in the treatment of disease; and it strikes me very forcibly that Dr. Chambers' guiding rule seems to be, that all diseases tend to weaken the system, and that the system requires to be *restored*. We know of old, that the "blood is the life," and if we are to make good blood, we must look to the condition of the assimilative functions. Dr. Chambers appears to attack disease, not by lopping and pruning, bleeding, blistering and "eliminating," but by judiciously restoring the functions of the stomach and bowels, and by leaving it to Nature to sever the disease from the strengthened system. I have no doubt that Dr. Chambers' new work will be a great success in England, where wealth brings luxury and dyspepsia and its host of symptoms, and it cannot fail to be also extensively read in America, where there is no less of luxury, and much more of mental excitement from political and other causes than in the old country.

Dr. Chambers gives 227 detailed cases, which he analyses as follows: I. *Indigestion of various foods*—(a) of starch; (b) of albumen and fibrine; (c) of fat. II. *Habits of Social Life leading to indigestion*—(a) eating too little; (b) eating too much; (c) sedentary habits; (d) tight lacing; (e) sexual excesses; (f) compression of epigastrium by shoe-makers; (g) solitude; (h) intellectual exertion; (i) want of employment; (j) abuse of purgatives; (k) abuse of alcohol; (l) tobacco;

(m) tea; (n) opium. III. *Abdominal Pains*—(a) heartburn; (b) acidity; (c) waterbrash; (d) spasm; (e) gripes evacuating the stomach; (f) weight at the stomach; (g) wearing pain; (h) soreness on pressure; (i) anomalous pain in epigastrium. IV. *Vomiting*—(a) vomiting of pus; (b) of mucus; (c) of blood; (d) acid fermentation of vomit; (e) fæcal vomiting; (f) vomiting of unchanged food and hysterical vomiting; (g) vomiting in pulmonary consumption; (h) occasional causes of vomiting; (i) sea-sickness. V. *Flatulence.* VI. *Diarrhœa.* VII. *Constipation, Costiveness.* VIII. *Nervous Diseases connected with Indigestion.*

One of Dr. Chambers' remarks is the following: "Nearly all invalids are but *half nourished.*" He shews the fallacy of routine practice in giving lowering remedies or violent purgatives to "clear the decks" for the after treatment. *Defective vital power* is the key note of Dr. Chambers' book. It comes natural that, if defective vital power is the leading symptom, the *restoration* of the same must be the appropriate treatment. If all disease indicates a deficiency from vital force, disease must be combated by "renewing" the ebbing powers of life. Quinine; strychnine; aloes and myrrh pills, (the latter is used for its tonic principle—other purgative masses would be *destructive*); a well regulated diet to *nourish*, but not to burthen the stomach—*to make good blood*—that sums up Dr. Chambers' treatment. He teaches that we must not use destructive remedies to rebuild the shattered bodies of our invalids. We must be conservative of their vitality. We must prop up and assist Nature. We must paper, paint and glaze our human tenements, as we do the houses that we live in.

Mr. Baker Brown, the distinguished Surgeon for those plastic operations necessary to repair the injuries of the perinæum, consequent on labor, and whose London "Surgical Home" ought to be visited by all practitioners interested in the diseases of women, has been having a spirited controversy on the subject of "Clitoridectomy." Mr. Baker Brown excises the clitoris in nymphomania and in some other nervous afflictions. It is not yet determined by the profession whether the operation of clitoridectomy is useful or hurtful. There can be no doubt that Mr. Baker Brown has found it a useful operation in some cases. It is an operation of a serious character, and one that, in my opinion, no surgeon should perform without getting the *consent of his patient*, although it may be clearly indicated as the

only treatment. Perhaps you are not aware that clitoridectomy has been practiced by African races, who seem to think as little of it as of circumcision in the male; indeed both these operations are usual with them. Polygamy is the rule, and clitoridectomy is patronised by the black husbands to lighten their marital labors; for it has been found that "clitoridectomized" women are more indifferent to sexual intercourse than unmutilated females. A. T. M.

Necrological.

The late Ellis Hughes, M. D.

The subject of this sketch was born in Baltimore, Maryland, 9th of August, 1813, being descended from an old and respectable family which emigrated to the colony some time in the reign of George II. From an early age he exhibited a most enquiring mind. As indicative of early tastes and predilections, it is related that he would sit for hours examining maps and drawings, with an uncommon interest for one of his years. In early youth when able to grasp a pencil, he manifested a precocious taste in the fine arts, and, in the subsequent course of his diverse studies and investigations, could handle the pencil with remarkable facility, in illustrating his views. Sketches which he would occasionally execute for pastime, indicated what success he might have attained in a serious devotion to Art as a profession.

At an early age, Dr. Hughes matriculated in St. John's College, at Annapolis (Md.), at a period when that venerable institution was in a comparatively flourishing condition, with an able and cultivated Faculty, presided over by the Rev. Dr. Rafferty. Here young Hughes soon became one of the first students in his class, most of whom have since attained eminence as useful and distinguished men. In 1829 Dr. H. received the degree of B. A. with much credit, his graduation speech at the commencement being generally considered as one of the most finished productions of the occasion, and receiving high commendation from the classical critics of the day.

At college one of the daily exercises enjoined on the lower classes by Dr. Sparks, the professor of ancient languages, was one which may be worthy of mention in these days of degeneracy in classical

literature. The foot student had the privilege of asking of the head of the class any question pertinent to the lesson, and successively each one above the foot; so that frequently the last would become first, and the first at the foot, when his turn for the question might again place him in the van. Rivalry for the place was thus created, until every member became thoroughly grounded in the contents of Lempriere's Classical Dictionary. At these exercises Dr. Hughes, with the aid of his prodigious memory, became so expert that, should he lose his vantage ground temporarily, he seldom failed to recover it. The practice of research into ancient history and into old and curious facts, thus early imbibed, continued during life, and was the origin of that thirst for investigation which was so distinguished a trait in his character, and which led to the acquisition of such a vast fund of general information.

About the year 1832, he received the degree of M. A., but always appeared to estimate these literary tributes at much less value than most people attach to them; and never resorted to these, or any other means, to obtain credit by a mere display of knowledge, for which his thirst was so insatiable that he did not seem disposed to sacrifice his time to any other purpose; always apparently considering this as the main business of life.

After graduation, Dr. H. entered upon a course of medical study with that much esteemed and distinguished physican, Dr. Dennis Claude, of Annapolis, than whom few men have possessed during their lives more completely the love and admiration of the society in which they moved, or were more honored by their fellow-citizens with proofs of consideration and distinction. Here Dr. Hughes was noted among his fellow-students for thoroughness in his attainments, and for the spirit of enquiry which was continually stimulated and extended among them, by his questions, examinations and suggestive remarks. "In fact," remarked a distinguished physician, then an ornament to the faculty of physic, as he is now to that of Divinity, "in fact, he qualified some of his fellow-students for examination," which in those days, "they might have found it difficult to have passed, had it not been for his constant aid."

After three years of office study, Dr. H. attended the course of medical lectures at the University of Maryland, receiving much aid from that eminent Baltimore Surgeon, Dr. W. W. Baxley, who by his researches and contributions has acquired literary as also professional distinction.

In regular course, Dr. Hughes received the degree of M. D.—in those days not an empty title—graduating with distinguished honor, and was awarded the University Prize of a gold medal, as the author of the best original Thesis in the Latin language. Returning to Annapolis, Md., he commenced the practice of medicine, and seemed to have a prospect of soon securing an extensive business, which his attainments so well qualified him for; but having received the appointment of Demonstrator of Anatomy in the University of Maryland, he removed to Baltimore, where other engagements and views prevented him from seeking an extension of practice. About this time he contributed occasionally to the medical and literary periodicals of the day. Some of his articles attracted much attention, not unfrequently producing telling effect, by settling some dubious question in history, chronology or geography; and he seldom made an attack with his trenchant pen, either in regard to principles or persons, when it might not be said of his aim : "*Hæret lateri lethalis arundo.*"

Dr. H. had now directed his attention to a more active life, and applying to Mr. Poinsett, then Secretary of War, for permission to appear before the Army Medical Board for examination for the position of a medical officer in the U. S. Army, did not find it difficult, from his superior scholastic and professional attainments, to attain the grade of *number one* in the list of successful candidates.

In April, 1839, he received from the President his commission as a surgeon in the army, and served successively on the eastern frontier of the United States, and in Florida during the Seminole war. Stationed in the vicinity of the Everglades, and suffering the vicissitudes incident to a campaign in an insalubrious country, his health was seriously impaired. From the effects of disease and climate he long suffered, and perhaps it may be said never fully recovered. Yielding to the solicitations of friends, he resigned his commission in the army and returned to the walks of civil life; not, however, until he had had opportunities of medical practice, and of ministering to the comfort of many who have expressed the warmest gratitude and appreciation of his professional services.

He visited our city, where he remained for a time, pursuing a quiet and unobtrusive life, being debarred by continued ill health and other considerations from the practice of his profession. He soon after removed to Maryland where, at no time during his relaxation

from professional labors, did he cease from his efforts to store his mind with that extensive general knowledge for which he literally *thirsted*, watching every movement on the chess-board of nations with the most vigilant eye, especially the attempt of Great Britain and France to aggrandize their power and influence in the seizure of the key positions of the world, with the same interest as if he had been a diplomatist or minister of State; noting daily the progress of nations, whether of Europe, Asia or America, and the discoveries in the interior of Africa, as if the accuracy of his map depended upon the notation of each individual event. For in fact he marked and corrected his maps and wrote up journals, as if personal interest existed in every movement. If the siege of Sebastopol was ended, or if Louis Napoleon cast his eye upon Piedmont or the banks of the Rhine, or if the ambitious and tyrannical despot of Prussia longed for the dismemberment of Denmark, he did not fail to mark the fact and note its bearing upon the institutions of our own country. Or did the French Emperor essay to give his views of Julius Cæsar, he failed not to criticise them, regarding the accuracy of his facts and the deductions that might be made from them, as to the motives of his own action and the principles of his own conduct.

Desiring to visit the shores of the Mediterranean, and to renew the classical associations connected with the seats of ancient power and arts in the Grecian archipelago, and for the purpose of reëstablishing his impaired health, in the summer of 1841 he submitted to an examination before the Naval Medical Board. Some cause, however, prevented him subsequently from entering the navy, for which he had passed so satisfactory an examination; and had been reported by the Board as No. 1, for grade of a medical officer. He again devoted himself to civil pursuits, being associated with his father, the late Jeremiah Hughes, in the publication of that well-known standard periodical, "Niles's Register," so useful for reference, to the statesman and historian.

In 1849, he removed to the District of Columbia, and still continued his researches into the realms of general knowledge; became connected with the press; mastered most of the modern languages, as readily as he had the Greek, Latin and the Hebrew; acquired a reputation in the private literary circles of the metropolis, as an accomplished philologist; was versed in the principles of æsthetics, numismatics and the plastic arts; investigated the geography, flora, fauna and geology of almost every region on the globe, and becom-

ing well acquainted with its latitude, longitude and topographical features, searched out almost every remarkable place, locating it definitely; examined the ancient and modern history of battles and sieges, at the same time extending his studies in physiology and the natural and physical sciences.

One of the favorite maxims of the lamented subject of this notice, seemed to be, that it is not well to appear to know too much—that such is the weakness of human nature, men do not like to see others possess more knowledge than themselves; he was, therefore, generally careful to know more than he gave expression to, especially in society; and not unfrequently persons, in conversation with him, would discover that his knowledge was profounder and more exhaustive on the subject under discussion, than they had anticipated.

His health not permitting him to engage in the practice of his profession, Dr. Hughes was engaged, prior to the late civil war, successively in some of the various bureaus of the War and Interior Departments at Washington, especially those of the census, statistics and the topographical engineers. To aid him in his system of journalizing and annotations of maps, charts and other literary and scientific works, he mastered the arts of Phonography and Stenography, and claimed to have improved and simplified the system. His memory was singularly retentive—in fact he was remarkable in this respect. In the private relations of life he was, indeed, the type of a good man—not a successful one in the commercial and pecuniary sense of the word, since he was unselfish, generous, charitable, and liberal to an imprudent degree—for he had no guile, or suspicion of any one. In his habits he was moderate and temperate, and in social intercourse was more conspicuous as a listener than an active participator. In manner and character he was urbane, sensitive, retiring; quick to resentment, but ready to forgive; high toned and punctilious.

In the midst of life, and especially in late years, he had reflected on the certainty of death, and a few weeks before the close of his probation, gave such directions and made such remarks as induced the belief that he was anticipating the awful change as eminently probable in a very short time. In the hour of death he was as he lived, for

> "——veræ voces tum demum pectore ab imo
> Ejiciuntur, et eripitur persona, manet res."

The summons of the dread event came to him October 5th, 1866, at Georgetown, D. C. His last intelligent words were, "This is Life, indeed!!"

Requiescat in Pace.

A. J. Semmes, M. D.

New Orleans, Jan., 1867.

To Subscribers.—Despite many embarrassing difficulties, this Journal has nearly completed its Nineteenth Volume; and the proprietors are gratified to know that friends of former years have not forgotten the interest hitherto manifested. Many, however, who have expressed their approbation of the renewal of the Journal, have failed to send that aid which is so essential to the existence of a periodical aiming at the advancement of the medical profession.

We, therefore, trust that the same desire which has prompted the proprietors to strive for the promotion of medical literature, may stimulate subscribers to remit their annual subscription. In default of a proper remittance before the publication of the July number, the proprietors will demand ten instead of eight dollars, as this latter sum is the amount due from those debtors who ask for the Journal without remitting the customary price.

To Contributors.—We have received papers for this Journal from our co-editor, Dr. S. E. Chaillé, and from Dr. Henry Shiff, of Paris; also, from Dr. E. P. Gaines, Mobile; Dr. James C. Harris, Wetumpka, Ala.; Dr. W. A. Cochran, Cambridge, Dallas county, Ala.; Dr. J. F. Griffin, Avoyelles Parish, La.; Dr. R. J. Perry, New Orleans; and Mr. J. H. Hart, New Orleans — of which we shall make early use, and for which we would express our thanks.

List of Journals Received.

(London) *Medical Mirror.* November and December, 1866.
London Lancet (reprint, N. Y.). January.
Dublin Quarterly Journal of Medical Sciences. November, 1866.
Medical Times and Gazette (London). December 22, 29; January 5, 12, 26.
British Medical Journal (London). December 1, 15, 22, 29.
Gazette Médicale (Paris). December 15, 22, 29; January 5, 12, 19.
Journal de Médicine et de Chirurgie Pratiques. December and January.
Chemist and Druggist (London). December 15.
Druggists' Circular (New York). January and February.
Atlanta Medical and Surgical Journal. January.
The Cincinnati Journal of Medicine. January.
Medical and Surgical Reporter (Philadelphia). Dec. 22, 29; Jan. 5, 19; Feb. 9.
The Medical Reporter (St. Louis). January 1, 15; February 15.
The New York Medical Journal. January and February.
American Journal of the Medical Sciences. January.
The Richmond Medical Journal. February.
The Medical News and Library. January.
The Boston Medical and Surgical Journal. January 17, 24, 31; February 7.
Buffalo Medical and Surgical Journal. January.
The Chicago Medical Examiner. December, January and February.
The Pacific Medical and Surgical Journal and Press. December
American Journal of Science and Art (Silliman's). January.
De Bow's Review. January and February.
The Galveston Medical Journal. October and December.
Nashville Journal of Medicine and Surgery. January and February.
Braithwaite's Retrospect. January, 1867.
Journal de L'Anatomie et de la Physiologie (Paris). January.

Books and Pamphlets Received.

Annual Announcement of Lectures in the Atlanta Med. College, for the Session of '67.

Treatment of Fracture of the Lower Jaw by Interdental Splints—By Thomas Brian Gunning, New York. Pamphlet, pp. 39.

Diphtheria; a Prize Essay—By E. S. Gaillard, M. D., Richmond, Va. Pamp., pp. 114.

The Renewal of Life; Lectures, chiefly Clinical—By Thomas King Chambers, M. D., Honorary Physician to H. R. H. the Prince of Wales, Consulting Physician and Lecturer on the Practice of Medicine at St. Mary's Hospital, Consulting Physician to the Lock Hospital. Second American, from the fourth London Edition. 8vo., pp. 646. Phila.: Lindsay & Blackiston. 1866. From Krull & Dickey, Booksellers, New Orleans.

The Functions and Disorders of the Reproductive Organs in Childhood, Youth, Adult Age and Advanced Life, Considered in their Physiological, Social and Moral Relations—By Wm. Acton, M. R. C. S., late Surgeon to the Islington Dispensary, and formerly Externe to the Venereal Hospital at Paris, Fellow of the Royal Med. and Chir. Society, etc., etc. Second American, from the fourth London Edition. 8vo., pp. 291. Phila.: Lindsay & Blackiston. 1867. From Krull & Dickey, Booksellers, 106 Canal street, New Orleans.

Two Cases of Œsophogotomy for the Removal of Foreign Bodies; with a History of the Operation—By David W. Cheever, M. D., Assist. Prof. of Anatomy, Harvard University, Surgeon to City Hospital, etc. Pamphlet, pp. 42. Boston: David Clapp & Son, 1867.

Report of the Board of Health to the Legislature of the State of La. Jan., 1867.

Watson Abridged: A Synopsis of the Lectures on the Principles and Practice of Physic, delivered at King's College, London, by Thomas Watson, M. D., Fellow of the Royal College of Physicians, etc. (Abridged from the last London Edition). With a concise but complete Account of the Properties, Uses, Preparations, Doses, etc., (taken from the U. S. Dispensatory) of all the Medicines mentioned in these Lectures, and with other valuable Additions—By J. J. Meylor, A. M., M. D. A neat pocket volume, bound in cloth, flexible, pp. 277. Phila.: Published by the Author. 1867. For sale at the principal Book Stores in New Orleans.

Bulletin of the New York Academy of Medicine.

Vivisection; What it is, and what it has accomplished—By John C. Dalton, M. D., Prof. Physiology, College of Physicians and Surgeons, New York. Pamphlet, pp. 40. New York: Baillère Brothers, 520 Broadway. 1867.

THE

New Orleans Medical & Surgical Journal

MAY, 1867.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

Art I.—EXPERIMENTAL PHYSIOLOGY AND THE TURKISH BATH: By S. E. Chaille, M. D.

WHEN the chief capitols of the civilized word boast of their "Royal," or "Imperial," or other "Societies for the Protection of Animals;" when their members, no doubt amiable and worthy men, encourage prize essayists to denounce the most distinguished Physiologists as cruel torturers, and remorseless murderers of the mute and helpless brute creation; a little common sense, *versus* a great deal of trashy sentiment, is not uncalled for.

Cruelty is the infliction of *useless* pain. If vivisections be useful, they are not cruel. Are they useful, and, if so, under what circumstances? Many men, some doctors among them! know so little of the history and progress of medicine, that they are ignorant of the experiments on which depend for their proof many of its fundamental principles, and on which also depend the refutation and abandonment of many pernicious and obsolete errors. They are incredulous of all conclusions deduced from experiments on animals, when applied to their own species, and refuse to accept the indisputable physiological law, that similar tissues have like functions, and that differences therein between one animal and another, are differences in

degree, not in kind. The anatomy and physiology of the optic apparatus, or other apparatus or tissue of an animal, which is possessed in common by man, being established; the same laws of the same parts of man are thereby established, due allowance being made for differences in size, and other circumstances which may modify these laws *in degree*. Others, recognizing these facts, still denounce those questioning nature by vivisection, and exclaim that it is the agony of torture, not healthy nature which applies to the experimentalist; that "*la torture interrop, la douleur repond.*" Unfortunately for physiology, there is some truth in this, but in most cases only enough to require of the experimentalist much patient labor and careful analytical judgment. Unfortunately for the commisserated animals, there is some truth in it, for it renders indispensable the repetition and variation of many experiments.

It has also been objected, that the facts established by experiment have often no practical value whatever. To such frivolous objection it is only necessary in reply, to recall that such facts each of which, taken separately, may have no value, have, when accumulated in adequate number, often heretofore led, and will in the future, lead to the most important practical conclusions. The telegraph was not the concluding work of him who first made known the elementary laws of electricity, nor the engine the work of him who first established the expansive power of steam. How can the unknown be reached, except by induction from known, established facts? Is it better to seek progress by the discovery of these facts, insignificant as they may appear, valueless as some of them may continue to be; or shall we rather continue the history of the fruitless past, and by injurious theories, arrive at conclusions which facts refuse to warrant, and which are destitute of the only element really essential, truth? Bernard has well said, "as we march into science, the horizon expands, and each new fact, whilst often throwing light on many old questions, also suggests the solution of a dozen new ones."

Notwithstanding all objections, Prof. Carpenter, apparently a most commisserate vivisector, says in reply to our claiming him as a shining example of a great anti-vivisection physiologist, that "If we knock out of the existing system of universally-accepted physiological knowledge, all that has been learned from experiment, and what experiment alone can reveal, we should go back to a depth of ignorance which must cause a most lamentable increase in human suffering, through the maltreatment of disease and injury which

would be the result. I shall show that nearly the whole of our present knowledge of the functions of the nervous system has been obtained by experiment, and that the most minute anatomical research could never have disclosed it." Need it be added, in proof of the *utility* of vivisections, that Harvey, Hunter, Haller, Astley, Cooper, Abernethy, Charles Bell, Brodie, and almost every English and foreign physician who has left, or will leave behind them a permanent fame, were or are vivisectors? These men regarded little the sufferings and death of a few supernumerary cats and puppies, but conferred substantial benefits on their kind, and no doubt well discharged their social duties. Some who denounce them are not unlikely to much resemble the sentimental poet, who wept a eulogy over a dying ass, when his mother was at home, starving.

Whilst physiology, the standard-bearer of practical medicine, the *sine quâ non* of pathology, has drawn, and must continue to draw, perhaps its richest treasures from the numerous and instructive "experiments prepared by nature's hand," it nevertheless, owes to vivisection a renewed stimulus to future research, and many valuable contributions. It, then, deserves to be recognized as a potent aid to physiological studies, and a laudable means of scientific research.

If vivisections be useful, under what circumstances are they so, and what *degree* of utility justifies resort to them? Surgical operations on living animals are useful, to establish doubtful and discover new facts; to confirm and illustrate old facts, and to teach surgery. They are resorted to for all these useful purposes. The English public and profession are apparently opposed to vivisection, except for the first object, and do not resort to it to illustrate their lectures, or to gain surgical experience. Probably the French, more than any other people, resort to it for all the purposes mentioned. The whole question, in fact, amounts to this, how much good must be conferred on man, to justify so much pain and death inflicted on brutes? Different men will evidently differently estimate the relative value of the good and the evil; and having the power will exercise it, each individual in accordance with his own estimate. So long as the world encourages hunting and fishing for *amusement*, by which more animals are killed, wounded, and diseased in a day, than physiologists destroy in a year; one would think that the world's conscience need deprive it of no sleep because a few doctors do the same thing, for what they rightly or wrongly believe *useful* purposes. So

long as the profession witnesses with equanimity useless suffering, and perhaps worse, inflicted on their fellow creatures by incompetent physicians, a respectful silence, instead of denunciation, is decently due from them in regard to those of their competent *confrérs* who may deem it proper to kill, even to torture a few curs for their instruction. If they will persist in

> "Compounding for sins they are inclined to,
> By damning those they have no mind to,"

it is possible that an ingenious search may enable them to detect other sins, from which they may be equally free, and the denunciation of which would no doubt prove worthier of their metal and their wrath.

The "Royal Society for the prevention of cruelty to animals" in London, not finding enough dirty linen at home to wash, came over here and pointed out to the Emperor Napoleon the filthy rags in his back yard, (the Altfert Veterinary School); upon which the Emperor ordered the Academy of Sciences to inspect and report. Their report accords with common sense, and is just such as any *Academy of Sciences* must report, or stultify itself, viz: "There is no occasion to take any notice of the complaints of the London Society. Resolved, that in the future, as in the past, vivisectional experiments should be left entirely to the judgment of scientific men." The subject may be well left where this Academy left it.

Among the most recent and interesting vivisectional experiments are those of Paul Bert, Professor of Physiology at Bordeaux, on transplantation or animal grafting. The annals of medicine contain many curious facts, which for the most part are well authenticated and susceptible of repetition, showing that various tissues, various histological elements not grouped in tissues, and various parts composed of several tissues may, after removal, be restored to their usual positions and continue their normal manifestations of life. So also when, after their removal they are transplanted to a different and abnormal position on the same animal, an animal of the same species, to an animal of kindred species, and, in some instances, to animals of even a different species, parts so transplanted have continued their development and growth. Among the successful transplantations recorded are hairs, feathers, cocks' spurs, blood, red globules, periostial cells, periosteum, cells of medulla of bone, bone, teeth, muscle, nerves, skin, nose, ears, cheek, chin, tails, paws, spleen, testicles, stomach, womb, jaws, fingers, and entire members. Some of these reported successes, as for instance the transplantation of feathers to

the mammalia, are called in question by Prof. Bert, as well as by his predccessors. To this list, however, must be added the undoubted and interesting fact, that he has several times succeeded in producing artificial Siamese twins. The denuded sides of two white rats, kept in close apposition, united by first intention in five days. The vascular union, through the band of junction, was so completely established, that atropine administered to one, dilated the pupils of both animals, and after death an injection into the general circulation of one passed through this band into the general circulation of the other. Before abandoning this record of successful transplantations let it be remembered that nature herself prepares daily the most successful and interesting of all such experiments, the grafting in the womb of the vivified ovum. Transplantations require, for their success, that they should be accomplished between animals of the same or closely allied species. However, Hunter and Sir A. Cooper succeeded in transplanting a human tooth to a cock's comb (specimen in the Hunterian Museum, showing vascular connection between the two); several have transposed to the same place a bird's wing and a cat's tail, and the periosteum of a dog transferred to a rabbit, and of a rabbit to a chicken, has given evidence of osseous development. The record of such facts has heretofore been considered as rather illustrating the curiosities of medical literature than as tending to any useful result. Transplantation does, however, as will be shown, throw light on some questions of great interest, promises to solve several, and has already made valuable practical contributions.

There seems to be little reason to doubt that every element of which a living body is composed may continue to live after transplantation, provided that it be transferred to a medium where it can obtain its ordinary nourishment, and that the transplantation does not destroy those conditions upon which its existence depends. It follows then, that there does not exist one directing and coördinating principle of life which holds under its power the vitality of every part. For each part is endowed with its own special vitality; each of its constituent elements has impressed on it its developmental life, and *knows*, so to speak, what is to be its definite form, and to what new elements it is to give birth. There is not *one* life for the whole body, but every histological element is endowed with its own life. The union of the various lives of the various parts makes up the sum, and constitutes the apparent unity of life. Death illus-

trates the same law, of which no example can be more familiar than the *rigor mortis*, the result of the vital contractile power of muscles which does not usually cease for some hours after general death; and which demonstrates so long as it continues that muscular life continues. So too, the contractility of the muscles may be destroyed (by raising the temperature of a bird for instance to 130° F.), and the animal dies; because upon muscular contractility depends the exercise of vital functions, but not because the vitality of all the tissues is thereby destroyed. Transplantation proves that other parts continue to maintain individual life, and renders it probable that not even the muscles themselves are dead, but that only one (their chief) function, contractility, has been destroyed. It would naturally be supposed that death from old age would, if any mode of death could, illustrate a general and simultaneous death of all the parts. It is not so. When an animal dies of old age some of its anatomical elements are affected with senile degeneration. This prevents these elements from elaborating such nutrition as the tissues require to enable them to discharge their functions. If these functions be vital functions of the first order, such as nervous power and muscular contractility, death results from the suspension of these functions. But because some of the anatomical elements have, in consequence of senile degeneration, lost their power of elaborating proper nourishment for tissues, on whose health the exercise of vital functions depends, it does not follow that these elements have lost life and *all* their power. Transplantation proves they have not, and that their vitality persists, for if these degenerated anatomical elements be transferred to a new soil, where a fresh and healthy pabulum is found, failing life is restored to each degenerated dying elements.

The curious questions, then, are suggested, whether the anatomical elements have a *necessary* death, and if so, what is the normal duration of the lives of the different tissues? May successive transplantations of the same part, from the fully matured to the young animal, enable such part not only to prolong its life beyond the normal duration of the life of the animal (that which is already proved), but also to live on so long as such transplantations may be continued, even *ad infinitum?* Prof. Bert says he would have taken good care never to have proposed such a question, having no fondness for the "*nugæ difficiles*," had not his experiments forced such a question upon him. That he is aware metaphysicians will reply at once, that that which is commenced must finish, and that an ascending evolution

of an element renders necessary its descending evolution. But that men, who are not to be satisfied with mere words, will prefer with him, that the question should be left entirely to experience, that supreme judge whose decisions alone are satisfactory, when appealed to in last resort." He has now in progress the experiments requisite to throw light on this subject, but during too short a time to deduce from them any decisive conclusions.

Prof. Bert's experiments seem to have been limited to the tails and paws of rats, transplanted to the same species. The member is removed, denuded, then grafted under the integument of the back or elsewhere. It is at first nourished by imbibition, the capillaries soon penetrate to it, and in five days vascular connection is so well established between the parts, that the transplanted member may be injected from the general circulation of the animal upon which it has been grafted. The anatomical elements of which compose such transplanted part undergo various fortunes. The connective tissue, formative cells, tendinous and cartilaginous fibres, bone and marrow, preserve all their nutritive powers and functions, and are developed normally. The muscular fibres undergo fatty degeneration, and lose their contractility permanently. The nerve fibres may lose their functions temporarily, to have them in time restored. That nerves may be regenerated after their separation from their nervous centres, Valpeau and Philippeux claim to have fully demonstrated; also that a sensitive nerve, as the lingual, will not only unite with a motor nerve, as the hypoglossal, but after such union will transmit a motor excitant, and put the motor nerve in action. Bert claims that one of his experiments not only confirms these facts, but also proves that a transplanted nerve may carry the nervous current in a direction inverse to its normal course. He farther adds, that the innate sensation by which it is supposed that a nervous irritant is located, is due solely to experience; for if the nerve transplanted be irritated, it is sometime after the full restoration of its functions before the animal learns by experience the location of the suffering part.

Whenever a grafted part is transplanted where it fails to receive that which is required for its healthy nutrition it dies, or undergoes less serious pathological changes. Should the physiological laws of transplantation be ever well established, we have good reason to hope that the abnormal modifications which are impressed on parts transplanted to diseased or other abnormal media will assist in elucidating many pathological problems. The chief object of Dr. Bert's

experiments was to test the vital resistance of the tissues; to subject the transplanted part whilst *in transitu*, to such experiments as might throw light on its peculiar vital properties; on the part played by it in the phenomena of life, and on the modifications resulting from its removal from some of its normal influences as the nervous centres. The results reported are certainly not such as would have been anticipated. A rat's tail separated from its body, preserved in confined air, and protected from desiccation, lives when transplanted, if the temperature has not been above 53°(F.), from two to seven days; if the temperature has been at 77° it dies in two days; if at 86° in seven and a half hours. A temperature of over 130° or 0° does not kill the part. A moderately strong electric current continued for seventeen hours does not kill the part to be transplanted. Desiccation as complete as scientific means permit, does not entirely destroy its vitality. A prolonged exposure to oxygen, carbonic acid, nitrogen, hydrogen, carbonic oxyde, vapors of phrenic acid, benzine, ammonia, and of ether do not destroy life in the graft; though disease is often thereby inflicted on it. Immersion in water impairs the vitality of the anatomical elements more than their exposure to most of the gases. However, when the part has been immersed for nine hours in water at 65°, and below 32° it still gives evidence of life. Acids destroy the vitality of the tissues in doses very much less than the alkalies. One part of acetic acid in one hundredth parts of water kills in four hours, but two parts of potash, equally diluted, are perfectly inoffensive. This confirms the law already established, that it is necessary for the health and vitality of the tissues, that their nourishing fluid, the blood, should be alkaline. To the above almost incredible illustrations of the persistence of vitality, may be added the interesting facts, that the tail removed from a rat dead twenty-two hours, has been successfully transplanted to a living rat, and that Prof. Ollier successfully grafted upon a living rabbit periosteum taken from one dead for twenty-four hours, which performed its normal function of developing bone. Prof. Bert in no wise exaggerates the successes of his experiments, nor fails to point out the difficulties and dangers of animal grafting. He has done enough, however, to induce every reflecting man to receive with less incredulity the numerous cases reported by the older medical writers, of successful transplantations in the human being, and to arouse the attention of surgeons to renewed attempts for the restoration of mutilated parts. The head which wisely guides the bistoury to remove should not

be lightly discouraged from any reasonable efforts to enable the bistoury to restore as well as to destroy. If the past abounds in the failures of anaplasty, it is not destitute of successes. Some, by special skill acquired world-wide fame, and Tagliacozzo had even a statute erected to his memory (holding a nose in its hand), in honor of his rheinoplastic successes. That the nose, chin, eyelids, pulps of the fingers and teeth may be successfully restored, even some hours after their removal, is abundantly proved by the records of our own day; as also that lesions of the skin may be restored by transplantations from adjacent parts, its old connections not being entirely cut off, until it has established its new union. The records of the past tell us that noses have been restored by integument removed from the gluteal region, and that in one case the attempt was made with the skin from a body recently dead. That which our ancestors have thought it wise to attempt, we may think wise to study.

Two of the subjects connected with transplantation deserve farther attention, viz., the transfusion of blood, and the grafting of periosteum to form bone. By this latter Nélaton and Ollier have succeeded in giving a bony and solid base to an artificial nose; and the Berlin Surgeon, Langenbeck, has acquired fame and money by closing up fissures of the bony palate with osseus tissue.*

Farther, there has been *proposed*, by the same means, transplantation of periosteum, to consolidate ununited fractures. The experiments of Ollier, illustrating osteogenesis, and the facility and success of periosteal transplantations, have not then been fruitless, but have been applied to useful practical purposes by Langenbeck, Nélaton and others.

The transfusion of blood, long known to the profession, has met with some success, but far, far less than was at first anticipated, and in my own conviction, much less than it is capable of bestowing. It is beyond question, the most *rational* of all remedies, both to replenish the blood when insufficient in quantity, and to restore to it its healthy constituents when impaired in quality. It has been resorted to for both purposes, and some few patients have apparently been snatched by it from the very jaws of death. The profession therefore, recognize it as a laudable remedy, more especially when death is threatened by large and sudden hemorrhages; but those who re-

[* I owe the description of this latter operation to Dr. J. T. Darby, formerly of Gen. Hood's staff, and more recently attached to the Medical Headquarters of the Prussian army. He has kindly promised, for this number of the Journal, a report of this and other matters of interest.]

commend it even for this purpose alone, resort to it far less frequently than they recommend it. The operation is attended by necessary delays and difficulties; few have acquired by experience the manual dexterity requisite to bestow confidence, and to the fear of failure is added the fear of inflicting injury, and thus hastening the threatened death. Such are among the chief reasons which deter the practitioner from resorting to this remedy, calculated to prove so potent. One who has once witnessed experiments of transfusion can never forget the first impressions of satisfaction and profound astonishment which the results inspire, nor cease to look forward with sanguine hope to its more extended application to man. All the skill requisite for the experiment is the introduction of two small metallic tubes, with stop-cock attached, into the vessels of two animals. One should be secured, say in the carotid artery of one dog, the other in the jugular vein of another, the two united by an india-rubber or other tube. When the latter is bled to the desired amount, the stream of blood from the former flows directly into the general circulation of the other, through the opened stop-cocks and tube.

Claude Bernard performed, in 1860, the first experiment of this kind witnessed by the writer. The dog was bled until the mucous membranes were of a bloodless pallor; until syncope was profound; until the slow, gasping respiration threatened instant death; and until it was confidently believed that the skillful experimenter had, this time at least, greatly overstepped the narrow boundary between life restorable and death inevitable. The stop-cocks were turned, the vital stream admitted, and in ten minutes the animal was leaping, full of sport and hunger, about the room, apparently ignorant and regardless of the danger past. It is impossible to doubt that similar results would follow similar causes, if men were substituted for the animals experimented on; and that if this operation has not been made useful more frequently, it is not because it is not a rational and most powerful remedy. Several of the dangers feared by surgeons have been laid at rest by experiments. These have proved that, when death is imminent from hæmorrhage, very little blood is requisite to restore life, far less than has been lost; that in such cases it is the corpuscles of the blood (the carriers of the oxygen to the system) which are all-essential in restoring life, and that the serum and fibrin may be dispensed with; that the blood, before being injected, may be whipped with a small brush whilst flowing, and thus be deprived of its fibrine and power of coagulation

before it is injected; and that the admission of air into the vessels need be feared by no one not rash to foolhardiness. When a fluid, as blood, is mixed with gas as air, in considerable quantity, the fluid, by a physical law (whose effects are better appreciated than its causes), can no longer be forced by so slight a power as that of the heart's contraction through capillary vessels; therefore, when air is admitted into the general circulation, the blood no longer flows through the capillaries, the pulmonary circulation is thus arrested, and death, often very sudden, necessarily results. But the fact susceptible of the easiest demonstration is not sufficiently recognized that to thus cause death, it is indispensable that not only a *considerable quantity* of air should be admitted or forced in, but also that this quantity should be forced in *suddenly*. If the piston of a pint syringe, which has its nozzle within the vessel of a living animal be suddenly pressed down, so as to force its full contents of air into the vessel, the animal quickly expires; but if the piston be pressed down slowly, interruptedly, and cautiously, the animal bears without unpleasant symptoms, or the least danger, the same dose, which given suddenly in one full dose, would have caused instant death. Too great caution is far more praiseworthy in guarding human life, than too little, and transfusion demands great care as to the admission of air; but one who can administer an ordinary enema without forcing air into the bowels, need have no fear of killing his patient, if he manipulates his syringe of blood with the same care he should his syringe of soap and water. With the proper means for transfusion at hand, no man should die from loss of blood, provided it can be applied before the heart ceases to palpitate, and the open mouths of the bleeding vessels can be closed. Though the experience of the past has been discouraging, it is still not the dream of mere enthusiasm, but rather the conviction of reason which forces the belief that the infusion of healthy blood into a system poisoned by a blood disease, dying for lack of proper nourishment, should palliate the disease, and often cure the patient. Failures may result from many causes, altogether independent of the power of remedy to control those conditions to which it is *properly* applicable; and *all* the causes compromising success must be thoroughly understood before we can be justified in denying a principle sanctioned by common sense—that blood transferred from a healthy animal to one poisoned by diseased blood, or dying for want of healthy blood, should prove a more potent remedy than any in the pharmacopia. A little healthy blood,

added from time to time to a large mass of poisoned blood, might go but a little ways, but let it remembered that a few mouthfuls of food given to a starving man prolongs life for days.

Among other hopeful means, little resorted to, of purifying the blood and counteracting its diseases, may be mentioned the Turkish (or Hot-Air) Bath. This opportunity is taken to correct an unintentional exaggeration in a previous letter, which stated that this bath was a well established institution in all the larger cities of Europe. Though so represented, I find this statement false; it should have been limited to all the large cities of Great Britain, for the continental cities of Europe have not yet manifested sufficient enlightenment and enterprise to establish Turkish baths. This heathen virtue has been introduced to christianity by England, and by this nation alone has it been adopted.

It is not proposed to cite the names of Erasmus Wilson and many other of the most eminent physicians of England, who themselves use, prescribe for their sick, and warmly commend to all, the hygienic and remedial virtues of the Turkish bath; nor to detail the diseases, as catarrhs, fevers, rheumatism, albuminuria, phthisis, etc., etc., in which it has been found so beneficial. But a few lines may well be given to the physiology of the skin, and to the therapeutic action on it of this remedy, in so far as may illustrate that it is a "boon to humanity, an important auxilliary to the cure of disease," and one of our best means for purifying the blood. Passing by the consideration of the absorptive, secretive, and formative functions of the skin, as manifested by its imbibition of oxygen, fluids, etc., its setaceous secretion, and its hairy and other epithelial formations; it will be remembered that its perspiratory (excrementitious) glands open on the surface of this, the most extensive tissue in the body, by seven millions of pores or mouths, and that the tubes connecting the glands and their orifices, would measure, if spread out continuously, very nearly thirty miles. The excretory organs of the skin would, *en masse*, very nearly equal the size of both kidneys combined. A man in repose excretes by "insensible perspiration," two pounds of fluid daily; if this perspiration be rendered "sensible" by exercise or other excitant, about a pound is excreted every two hours. Under the influence of the Turkish bath, the skin readily excretes from a pound to a pound and a half *hourly*. Perspiration, is like urine, an excrementious fluid. It contains in every hundred parts one part of solids; and these solids, both organic and inorganic, like those of the urine, are

eliminated from the effete, metamorphosed constituents of the blood, which, when retained, act as a most efficient poison. Urea is excreted by the healthy skin, as well as by the kidneys. In some diseases, as cholera, and in all diseases accompanied by an accumulation of urea in the blood, its quantity in the sweat is very much augmented. The important cleansing function of the skin is still further manifested by the coloration of its secretion in icterus and other diseases, as also by medicines; and in addition, by the sensible effect of many diseases on its odor, which becomes at times even fœtid. But of all its excretions, no others are habitually so important as that of carbonic acid. The volatile matters excreted daily by the skin, amount to thirty ounces, while those by the lungs amount to only fifteen. The skin then discharges two-thirds of this all-important duty, and the bulk of the cellular and muscular tissues are ventilated by it. Varnish the skin, or otherwise arrest its discharge of this ventilating duty, and death ensues as *surely*, though for obvious reasons, not as quickly, as when respiration is forcibly suspended.

Sufficient facts have been cited to recall to the reader, that in health the skin excretes a large quantity of extraneous matters which, when not eliminated, are poisonous; that it constantly gives aid to the kidneys in the discharge of their important duties, and in case of their disease hastens to their assistance with augmented activity, performing their function "vicariously;" that in time of need it helps out the liver; and that, under all circumstances, it performs a larger share than the lungs in ridding the body of its death-bearing carbonic acid. Of all the organs, the skin performs the largest, the most varied, and the most important offices, and it is no exaggeration to designate it "the sanitary commissioner of the body." Another all important, practical consideration in connection with the bath, is that "while the other functions are withdrawn from our interference, the function of the skin is committed to our care." By the action of hot air on it, more can be removed in one hour than any other organ removes in twenty-four.

By the action of the Turkish bath dead epithelium which forms a horny varnish over the skin, and thus interferes with the absorption of oxygen, and the elimination of carbonic acid and other effete matters, is completely removed. Wash as you will, then go to a Turkish bath, and the best instructed man will confess that he had but poorly estimated the amount of this varnish, and the most skeptical will acknowledge that he never before enjoyed that "virtue next

to godliness," perfect cleanliness. By this bath, the amount of the perspiratory fluid eliminated from the blood may be augmented to one, two, even three pounds per hour — that is to say, if the quantity of blood in the body be taken at its highest estimate, thirty pounds, the whole of its fluid may be readily eliminated in less than twenty-four hours; but if, as recent researches seem to prove, the quantity of the blood does not exceed one-half the above estimate, then the water of the blood may be removed several times in the twenty-four hours. This fluid carries with it out of the blood a certain quantity of its extraneous, effete, poisonous matter; this dirty fluid is as it flows, replaced by pure water; and thus the living blood whilst circulating, may be *washed* clean. Let it not be forgotten that in health this large elimination of fluid may be continued for hours, daily, and the result is augmented vigor; and that in disease, this excretion may be produced without disturbing the stomach, bowels or other organs, and without causing debility.

The medical profession has too often gone astray in idle quest of panaceas, to accept the sanguine assertions of any man, who claims to have discovered that which, though arduously sought after, is unattainable; but surely skepticism, oversteps its legitimate bounds, when it refuses to heed facts reported by enlightened experience, facts consistent with well recognized physiological principles. It is difficult to understand how the profession can fail to admit that as a pure and simple sudorific, the hot-air bath is the most efficient, and the least injurious. In virtue of this action, and in consideration that the skin performs so large a quantity of those essential duties discharged by all the excretory organs, more especially by the kidneys and lungs, we should rightly anticipate from the powerful and judicious use of this bath notable relief in all diseases accompanied with a diminished eliminatory action of the kidneys and lungs, or other organs. To all the innumerable conditions often caused, still more often aggravated by the retention in the system, of those effete and poisonous products of the metamorphosis of the tissues, which in health are eliminated *pari passu* with their formation, the Turkish bath is applicable, and calculated by its wonderful power over the skin, to effect more benefit than any other means now employed, unless physiologists greatly exaggerate the importance of the cutaneous surface, and a new and amendatory chapter on the subject be required.

Mr. Urquhart, the founder and apostle in England of the Turkish bath, claims for it, in his enthusiasm, superior remedial virtues in two other conditions, which merit attention. In the crisis of many grave diseases, a favorable termination is often announced by profuse diaphoresis. In fevers there is an elevation of temperature, which, with the diseases, abates when the dry, inactive skin becomes moist and active. The former is a successful, the latter an unsuccessful effort of nature to eliminate by the skin the *materies morbi*. It it claimed that, in either case, nature can be best aided, and her struggling efforts best promoted, by this bath. He deems it also especially applicable to the large and important class of diseases termed, zymotic, which, in accordance with accepted doctrines, depend for their cause on the presence of a ferment or diastase in the blood. He argues that fermentation requires for its existence a temperature within known limits; that if this be lower than 90° or higher than 140°, fermentation is necessarily arrested. Man readily endures dry air heated beyond 200°. The writer has, on several occasions remained from fifteen to thirty minutes in a room heated from 175° to 200°, and though this heat was not comfortable, it did render rooms heated from 150° to 160° perfectly so, and the after results have always been sufficiently pleasant to induce their repetition whenever practicable. The human skin, therefore its capillaries, therefore the blood in those capillaries, and therefore all the blood in the body, since this makes an entire circuit certainly within every five minutes, can be subjected without danger, and for a length of time, to a heat, such as arrests fermentation. Thus then, according to Mr. Urquhart, the Turkish bath is a remedy calculated not only to eliminate the poisonous products of fermentation, but also to destroy the ferment. Clinical experience alone can furnish the proper estimate which practical men should give such views, however hopeful, however plausible they may be. If, nevertheless, the facts reported by Polli and the Italian school in regard to the power of the sulphites in destroying or notably modifying fermentation in the blood, are to be accepted; then it would seem that the profession is acquainted now with these remedies, the sulphites, the Turkish bath, and transfusion, which, if properly applied to zymotic diseases, should cure them, or, by their failure, prove that these diseases are not zymotic. In any case, proper experiments on this subject could not fail to furnish important information as to the true nature of their diseases, and the true value of these remedies.

One word, somewhat personal, before concluding the Turkish bath. The writer, no more than the reader of this, recognizes any real power or force in nature which can bestow always benefit, never evil, and his faith is extremely limited, when called upon to implicitly credit theories of any kind, above all those based on wonderfully favorable cases observed with preconceived notions, and reported with the sole purpose of establishing those theories. Notwithstanding this, it is firmly believed that the Turkish bath is one of the most potent remedial agents known to the profession; and that therefore it should be introduced into every hospital, city, and village in the land. Medical journals and medical men must be the chief agents in establishing, wherever practicable, this "boon to humanity." The writer's limited influence will be continually used, until New Orleans and the South adopt this onward step in civilization; or he becomes satisfied that our people are too much lacking in enterprise to establish and support baths, which are a very great *luxury* in health, and a very important force in counteracting disease. The magnificent Hammâm in London, owned by a joint stock company, which derives from it an annual dividend of eight per cent. (very large in Europe) must have cost many thousand pounds; but a gentleman in England who has a couple of spare rooms in his house, can provide himself with every essential of a Turkish bath for fifty dollars. Thus neither want of rooms nor of money need interfere with their establishment in hospitals, and elsewhere in America.

The space appropriated to the Turkish bath was destined to the record of additional physiological experiments. As this article, however, has already compromised its interest by its length, what was intended for it will be reserved for a subsequent communication.

ART. II—CONGESTIVE FEVER:

By JAMES C. HARRIS, M. D., *Wetumpka, Alabama.*

BEFORE proceeding more particularly with the consideration of congestive fever, I beg leave to make the following explanatory remarks. In a communication entitled, "An Enquiry into the Nature and Existence of Typhoid Fever in the South," contained in the *New Orleans Medical and Surgical Journal*, Vol. 6, May No., 1850, page

712,* I used the following language: "Regardless, therefore of the objections that may be urged against the general application of the term *congestive* to the different varieties of malarial fever, those most familiar with the history of their symptoms will, we apprehend, readily admit that there is scarcely any grade, no matter how light, but that either at its commencement or some time during its progress, gives unmistakable signs of a greater or less determination of blood to some particular tissue or organ than another; that this broken balance of the circulation, continuing or recurring at regular or irregular intervals, is known by those who have studied the phenomena of congestion to produce, or be accompanied with, either increased or decreased nervous action, attended in the part to which the accumulation takes place with *swelling, pain, discoloration and heat;* that, coincident with these, the essential elements of inflammation, we have also increased, diminished, altered or suspended secretion, attended with the softening of the mucous membrane, effusion and ulceration; and that these within themselves are sufficient, and in our opinion do clearly indicate the nature and the name by which they should be known. To show that I am not singular in this opinion, and that others have been in the habit of making similar admissions, and accounting in the same way for some of the symptoms and *post-mortem* appearances, particularly in remittent fever, it is only necessary for me to direct the attention of my readers to the recorded views of Mr. Twining, who observes (*Diseases of Bengal*, chap. 5) that from the closest attention to clinical observations, as well as the result of *post-mortem* examination, he is convinced that the remittent fevers of Bengal are invariably connected with local congestion, which often runs rapidly into inflammation, attended with much interstitial effusion. The seat of these local affections was found principally in the stomach, intestines, cellular structure about the duodenum, and at the root of the meso-colon, more especially where it passes across the spine; the principal disease being also often found in the spleen, liver, brain or lungs. Thus most clearly is shown, both from *post-mortem* facts and clinical observations, that while the mucous membrane of the intestinal tube, in the remittent fever of Bengal, is frequently the seat of inflam-

* In an interesting article in the *Memphis Medical and Surgical Monthly*, for June, 1866, entitled "Observations on Epidemic and Endemic Diseases," by Lunsford P. Yandell, M. D., we are informed (page 211—212) that typhoid fever in those portions of Tennessee with which he is familiar, and where it heretofore prevailed, has within the last few years entirely subsided.

mation and effusion, all the other organs of the body may in time take on a similar condition, and become *foci* of diseased action. Hence we would say arises the impropriety, from the occasional appearance of one *post-mortem* lesion (ulceration for instance of the glands of Peyer), of taking from a series of symptoms indicating and bearing the name of a clearly defined and well understood form of malarial fever, and hypothecating thereon a name, the very mention of which is calculated to mislead the practitioner, at least so far as treatment is concerned, into the most dangerous, not to say fatal, errors imaginable."

Again, in an essay on the climate and fevers of the South-Western, Southern Atlantic and Gulf States, reprinted from the Oct. and Dec. Numbers (1858)* of the *New Orleans Medical News and Hospital Gazette*, I spoke of typhoid fever under the head of the *continued stage of remittent fever;* and in another unpublished part of the same Essay, of congestive fever, as the *congestive stage of intermittent and remittent fevers.* At the time of the appearance of the above essay, I contemplated, at no very distant day, the publication of a small volume upon the same subjects; and believed that this might contain some nosological reforms, tending to the introduction of a more rational and successful plan of treating typhoid and congestive fevers, particularly the latter, that ought to be promulgated. Recent circumstances rendering it uncertain whether I shall be able to effect this purpose, I have been induced on the present occasion (incidentally however), to present for the consideration of my professional brethren certain of these supposed reforms.

After a long and careful study of the causes, seats, symptoms, anatomical characters and treatment of congestive fever, I have been brought to the conclusion that probably the chief cause of the disagreement in opinion amongst medical writers upon the subject, is perhaps more the result of the want of an appropriate phrase to express the true pathological condition present in the congestive stage of intermittent or remittent fever than anything else. As we all know there is present more or less congestion in every grade and variety of ague, and that it is the most prominent, if not the most dangerous symptom in the cold stage of an intermittent that terminates in death during the first, second or any other paroxysm, we are unable to perceive any good reason why the epithet congestive

* This Essay the editor of *De Bow's Review* for 1859 republished entire, in the June and July Nos. of that sterling periodical.

might not be very properly applied to that condition of the system recognized and known amongst us by the familiar term of *congestive chill*. If the minds of our medical brethren could be brought fully to realize the truth, that a congestive chill is nothing more or less than a prolongation and perhaps deepening of the cold stage of the paroxysm of an intermittent, and that remittents during their course sometimes fall into a similar stage, I think they would experience little trouble in arriving at a correct understanding of the true nature of congestive fever.

In an essay on the distinctive character of congestive fever, Dr. Silas Ames * denies its identity with the pernicious fever of Dr. Wood, on account of the want of uniformity in their *post-mortem* lesions; and with the malignant intermittents and remittents of other writers, upon the ground that the latter preserve throughout their paroxysms the several (cold, hot and sweating) stages of a simple intermittent. Entertaining, as I do, the highest respect for the character and memory of Dr. Ames, it is really a source of no small regret to have to differ with him upon any subject, but more especially upon one in which his experience could not have been otherwise than ample; nevertheless I am, at least for the present, unwilling to admit that the absence of inflammation in any of the tissues or organs of the bodies of those who die in the first or second chill, or the presence during life of some symptoms in the paroxysm of an intermittent or remittent fever that are absent in others, proves any non-identity whatever between them and congestive fever.

Under the head of congestive fever, Dr. S. H. Dickson, † while refusing to admit there is any variety of fevers to which this title is exclusively appropriate (in compliance with what he considers custom among American writers, who thus designate a particular class), describes a periodical form of intermittent and remittent fever. It is chiefly the latter variety which he thinks, if not identical with, at least to resemble very much the malignant intermittents and remittents of the French and Italian writers. Again, Dr. Drake ‡, after describing simple and inflammatory intermittent fever, then comprehends the remaining varieties of this type, not referable to these two heads, in which the reäction and remission are feeble and imperfect, and the regularity of the other symptoms mingled or want-

* *New Orleans Medical and Surgical Journal*, Vol 7, Nov., 1850, page 300.

† *Elements of Medicine, pages* 258–9.

‡ *Principal Diseases, Int. Val. N. America*, Vol 2, page 71.

ing under that of malignant intermittent. He also further informs us (page 114–115) that in malignant remittent fever, there is not only present great congestion in the vena cava and its branches, but that there also exists a broken balance in the circulation, and that the organs most oppressed become the seats of special irritation and congestion. When these local inflammatory engorgements fail to produce reäction, as they sometimes do, we have present every element of danger and difficulty, together with a concourse of symptoms of a highly adynamic and ataxic character, from which the patient will be recovered with difficulty.

In some localities in the Southern and South-Western States, those in which during the summer and fall months malarial fevers of every grade and variety prevail, we occasionally meet, in the second or third paroxysm of remittent fever, with a weak, frequent and variable pulse, attended with increased gastric irritability, restlessness and thirst. These symptoms, generally denominated by medical writers malignant or pernicious, are really nothing more than the premonitory signs of an approaching cold stage, and the manifest result alone of congestion. In other cases the congestion falls more particularly on some one or more of the principal organs of the body, as the brain, lungs, liver, spleen, stomach or bowels, and is accompanied in every instance by the peculiar symptoms characteristic of hyperæmia of these organs. These local determinations during the course of the primary fever have been, I think, very erroneously described by medical writers as the comatose, soporose, thoracic and abdominal varieties of congestive fever. In other low, moist localities, where the long absoption of malaria has destroyed the vitality of the blood, turned it black and rendered it incapable of stimulating the heart into reäction, the congestive stage is neither so mild or gradual in its approach, the patient frequently dying in the first chill. These necræmial cases are very well described by Dr. Lewis, in his "Medical History of Alabama;" by Dr. Hart, * of New Orleans, and others. We are informed by Dr. Forry, † that they are ushered in with a prolonged sense of cold and universal collapse of the vital powers, occuring in places and at times in which the endemic causes are intense and concentrated; but as they are of rather rare occurrence and almost universally fatal, they cannot, I think, be viewed with propriety in

* "New Orleans Medical and Surgical Journal," Vol. IV. July, 1847, page 56.

† Forry's "Climate of the United States," page 257.

any other light than as aggravated cases of the congestive stage, in which the power of reäction is completely overwhelmed.

From an examination of the preceeding synoptical extracts, it appears that, while some of the writers cited contend for a congestive fever, *abnitio*, others no less experienced deny its existence altogether, or describe a similar condition of the system under the name of malignant, intermittent, remittent or pernicious fever. The want of respect, on the part of one of these writers,* for the congestive theory, the advocates of which he derisively styles hydraulic or mechanical pathologists, no less than the difficulty experienced by some of the others in the transformation of a *mere symptom* into an idiopathic disease, is probably, to some extent, the cause of the difference amongst them. Hence the classification, by systematic writers upon congestive fevers, into the cerebral, thoracic and abdominal forms, with sometimes a subdivision of these into varieties. I feel constrained to maintain, upon the grounds just stated, that the original disease of which they are mere species, varieties and subdivisions, is itself nothing more than a symptom, a stage of periodic fever, and should be described and treated as such.

Treatment.—To meet all the indications, this must be preventive in the chill and during the remission. In an attack of either intermittent or remittent fever, should any of the symptoms present themselves heretofore mentioned as premonitory of the approach of the congestive stage, we must endeavor to bring the system of our patient under the influence of quinine and opium, before the expected return of the next paroxysm. This may generally be effected by the administration, every two or three hours, of from four to six grains of quinine, and half a grain of opium, or its equivalent of morphine, until from 20 to 30 grains of the former are taken. Sometimes, in combination with each dose of the quinine and opium, we give from 3 to 5 grains of pulverized cayenne pepper, directing the patient at the same time to drink pretty freely of a tea of this article, and to apply a mustard poultice to the epigastrium. This course I have generally found efficient to prevent the development of the congestive stage. Afterwards, if there is present much hepatic derangement, which is frequently the case, I give some three or four pills (one every two hours), composed of two or three grains each of calomel and blue-mass, to be followed, if necessary, with oil; and then complete the cure by giving, for two or three days longer, more quinine, gradually reducing the quantity each day.

* "Drake's Principal Diseases, Interior Valley of N. America," Vol. II, page 114.

Dr. Horatio N. Morris and myself, in the fall of the year 1835, in the case of a young gentleman at the "Planters' Hotel" in this city (Wetumpka), in the congestive stage of an intermittent fever, gave him, during the course of the afternoon, some eighty or ninety grains of quinine, with as much brandy and opium as we thought prudent; at the same time applying mustard poultices to his spine, epigastrium and extremities. Yet our patient gradually grew colder and weaker, and finally, before midnight, expired. This case, together with several others that came under my observation within the next five or six years, in which large quantities of quinine, aided by the external application and internal administration of the most powerful stimulants, failed to produce the least reäction, led me, not only to doubt the curative powers of eighty or one hundred grains of quinine in this particular condition of the system, but to suspect this quantity might have had something to do in bringing about the fatal result. About this time, and when greatly discouraged in trying to fix upon some better plan of treating the congestive stage of fever, I received from my friend, Dr. W. O. Baldwin, of Montgomery, his essay on the poisonous properties of the sulphate of quinine. After a thorough study of this essay, a few rays of light began to illuminate the darkness by which I was surrounded, confirming my previous suspicions, and leading me irresistably to the conclusion that from twenty to thirty-six grains of pure quinine would produce that particular condition of the system recognized by us all as quininism, a state of irritation and excitement;* that carried beyond this point, it would begin to display its sedative powers, and perhaps a little further, its poisonous properties. Ever since this time, now some eighteen or nineteen years ago, I have never doubted that large doses of this remedy in stages of depression (no matter what may be its action in other conditions of the system), would produce dangerous symptoms, if not death; and consequently have discontinued its use in large doses, during the chill. The plan now pursued in the chill, is to apply immediately over the epigastric region a large blister, six by eight, or eight by ten inches, letting it remain on from eight to ten hours. If I have any fears, from the coldness and want of vitality in the skin, that the blister may not draw promptly, I endeavor to irritate the surface with mustard or the spts. of turpentine, taking

* "Dickson's Elements of Medicine," Revised Edition, page 262.

care at the time of the application of the blister to moisten it well with the latter article. This done, I make use of the following:

R. Quiniæ sulph.....gr. xxxvi;
Calomel.....gr. xviii;
Opii.....gr. iv;
Camphor.....gr. vi;
Olei piper. nig.....gut. xviii;
Confection. ros.,.....q. s. M;
Ft. pil.,.....xviii.

One of these I give every two hours through the congestive stage, and continue them until the patient has passed beyond the period for the return of the next paroxysm; which will be in from twenty-four to thirty-six hours, according to the type (tertian or double tertian) of the prevailing fevers of the locality. During the remission, if the pills have not acted, give a little oil, or some other mild laxative; and then continue to treat the case, but rather carefully, as an ordinary intermittent or remittent fever.

Art. III.—ERYSIPELAS:

By J. F. Griffin, M. D., *Avoyelles Parish, La.*

THERE cannot be a doubt that many diseases are attributable, as a *proximate* cause, to the presence of animalcules, or of vegetable growths of a fungoid character, or more properly speaking, vegetables belonging to the cryptogamous class of Linnæus. It is a common opinion that even the *ultimate* causes of many diseases might be traced to these animalcula, or to these vegetable growths. Dr. Samuel Wilkes, of England, thinks there is an intimate connexion between diphtheria and some parasitic fungus (oïdium albicans), and all remember Dr. J. C. Nott's lucubrations upon animalcula being a probable cause of certain diseases. It is a well established fact that the itch (psora) is caused by a minute insect belonging to the genus acarus.

I know not whether the idea be original or not, but it has been an opinion held by me for some time, that erysipelas owes all its effects to a parasitic plant belonging to the cryptogamous class of the order fungi. If this disease be watched closely, it will be found to have all the characteristics belonging to the vegetable; two things being

necessary for its existence, a proper soil *(solum)*, so to speak, for it to grow upon, and the scattering of the sporules. It is not for me to say whence originate these sporules, any more than for the naturalist to tell whence originate the various seeds of the many plants of the earth, that arise seemingly spontaneously; it is enough to say they exist. Why is there that distinct line of demarcation always noticeable in erysipelas? Such is the case with all plants. They have a limitation to the extent of their growth, corresponding with the extent of the soil adapted to them. Owing to some condition of the human system, caused by the depravity of the blood produced generally in hospitals and in crowded places, there exists upon the cutaneous surface a condition of the skin favorable to the growth of the fungus *erysipelatosus*, if I may be permitted the use of the word; this fungus originating, as I have already implied, by the same spontaneity belonging to other plants. The sporules of this fungus being of such a microscopic character, they are wafted from one place to another, producing contagion.

It is found that, in many cases, oleaginous applications cure erysipelas. Why so? Because oxygen is necessary to the growth of all plants, and here the plant is occluded from the atmosphere, thereby preventing its continued growth. There are many other applications, such as tincture of iodine, nitrate of silver, etc., which act by positively killing the plant, or in some way by modifying the nature of the soil.

It is often found that tonics seem to have more curative effects in this disease than anything else. Why so? The cutaneous surface *(solum)* has assumed a condition favorable to the growth of the fungus *erysipelatosus*. Now anything that will modify this *solum*, that will restore it to its normal condition, unsuited to the growth of the fungus, will necessarily eradicate the plant.

It may be said that, this being true, if any one of these remedies already mentioned acts in this way at one time, why would it not do so always? Why, for instance, would not oleaginous applications always occlude the atmosphere and thereby kill the plant? Perhaps they would, if applied at the proper time. Perhaps, owing to some modification of the *solum*, the applications may be absorbed without excluding the air; or the plant may have reached such an extent of growth that, being once fixed in the soil, nothing can eradicate it without a change in the nature of the soil itself.

Every one possesses some remedy that he thinks best for erysipelas. I fancy I have the remedy *par excellence*, and in mentioning this remedy, it is with much gratification that I acknowledge having learned it from my friend, Dr. J. Theus Taylor, now of New Orleans, and not long ago a medical officer of high repute in the C. S. Army. This remedy consists in the local and constitutional use of sulphate of quinine. I quininize the patient by the earliest and most speedy method. I give him large doses of quinine, and apply it locally by combining it with lard, and rubbing it upon the inflamed surface. Carrying out my theory, I make use of the lard on account of its oleaginous property of excluding the atmosphere; the quinine being absorbed, together with the quinine taken internally, a modification is produced in the *solum*, and the growth of the fungus is prevented.

All who remember Dr. Wedderburn, of New Orleans, recollect the number of cures he effected, particularly of ulcers, by the use of quinine. I could mention many cases of erysipelas cured by it, having used it to a considerable extent in the C. S. Hospitals, and will mention one case while I was surgeon of the Executive Committe, Red River defenses in the war, as indicative of the local manner of using it, premising that when I give it *per orem*, the doses are sufficient to keep up the ringing in the ears.

January, 10th, 1863, saw Mr. —— Perkins, on Red River, who had been confined to his room since the middle of October, with ulcerated condition of one of his legs, pronounced by physicians who saw it at its inception to be erysipelas. Various remedies had been tried—indeed all the usual remedies. I took two and a half drachms of quinine, and incorporating it thoroughly with about as much lard as would take it up, I directed him to apply this gently to the inflamed surface by way of a liniment. This he did, and in one week from the time of the first application he went out and cut a cord of wood, the first labor he had been able to perform since the middle of October. He continued well, and in all respects is as sound as ever.

I desire to say that, with reference to the fungoid or cryptogamous character of erysipelas, I have no information in a microscopic point of view; and would suggest that those who are curious upon such subjects, and who possess advantages of using the microscope in these cases, might by so doing make discoveries which would be of much use to the medical world.

ART. IV.—NEW MODE OF PREPARING MERCURIAL OINTMENT: By J. H. HART, *Apothecary, New Orleans.*

FINDING the mercurial ointment, as usually met with in commerce, to vary in strength and purity, and many complaints by physicians having been made of its irritating effects, I would suggest the following mode of preparing the same, as offering the advantages of certainty, freshness and easy execution :

Take of stearine* and mercury, each..... 1. lb.
Tinct. benzoin (saturated)..... ...4 drachms.

Into the mortar in which the ointment is intended to be made, place a freezing mixture of ice pounded, 12; salt, 5; potass. nit. 5 parts. Introduce into this the mercury contained in a test tube, or other suitable vessel; allow it to remain till the temperature has fallen to 32°, or below; remove and wipe the mortar thoroughly dry; immediately introduce the stearine and mercury; when the trituration is nearly completed, add the tinct. benzoin by small portions at a time. In this manner, under favorable circumstances, 2 lbs of ointment can be made in 15 minutes. The tincture of benzoin can be omitted, if desired, but will be found of great benefit in retarding rancidity.

ART. V.—OXALATE OF CERIUM:

By THOS. J. MCKIE, M. D., *Woodlawn, S. C.*

AS long ago as 1859, Prof. J. Y. Simpson, of Edinburgh, in an article to the *Medical Times and Gazette*, called the attention of the profession to this valuable salt. After a brief history he tells us that its therapeutic effect upon the stomach is that of a sedative tonic, resembling in some degree the salts of silver and bismuth; and he has seen it succeed in curing the most obstinate cases of vomiting so much oftener and so much more speedily than any other

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* Lard deprived of its fluid parts by strong pressure

remedy, that he has come of late to have great faith in its employment. Believing that this agent has not received the attention from the profession in this country which is due to its great merits, and believing also, from my own experience, that it is susceptible of a much wider field of usefulness than is indicated by the Edinburgh professor, I have been induced to write a brief article for the purpose of calling the attention of my professional brethren to this valuable remedy, and adding my own feeble testimony to that of Dr. S., who speaks so highly of it, but whose observations seem to have been confined to that particular class of diseases, the vomitings peculiar to pregnacy.

About the middle of the year 1860, I had in charge a most obstinate case of vomiting dependent upon uterine engorgement, which resisted all the remedies usually administered in such cases. Having just seen Dr. Simpson's article, I resolved, as a last resort, to test the salt in this case. It was accordingly prescribed in grain doses three times a day, in the form of pills. Perceiving no effect, the dose was increased on the third day to two grains, and no vomiting occured after the second dose. Since that time it has been used in a variety of cases with the best effects. In the derangements of the stomach and bowels to which children are so liable at certain ages, it is a safe, pleasant and highly useful medicine.

Within the last few weeks it was given, with the happiest effect, to a fever patient, a young lady who was greatly distressed with incessant nausea and frequent vomiting, which anything else would scarcely palliate. Oxalate of cerium pills were prescribed in two grain doses every eight hours; but the father of the patient, who is a very intelligent physician, and nursed her, observed that the influence of the remedy did not last so long, the nausea returning in from four to six hours. The intervals were accordingly reduced, the dose slightly diminished, and the nausea ceased. This was regarded as a case of extreme irritability without inflammation, though I do not know that inflammation ought to be considered as a contraindication to its use.

In speaking of its action, Dr. Simpson says the vomiting usually ceases after a few doses have been taken; but in some places it does not abate till the remedy has been persevered with for several days. The effect is, however, sometimes instantaneous.

ART. VI.—ANEURISMS OF THE ARCH OF THE AORTA:

By EDMOND SOUCHON, of La., *Laureat et Interne des Hopitaux de Paris.*

An Essay on the History of Aneurisms of the Arch of the Aorta. A Thesis presented to the Medical Faculty of the University of Louisiana, for the Degree of Doctor of Medicine.

HISTORY.[1]

UNKNOWN to the physicians of old times, aneurisms of the arch of the aorta were only mentioned about the middle of the XVIth century.

It was Vesalius who diagnosed the first aneurism on the living,[2] and published the first case; but it is necessary to come to Morgagni to find notions somewhat precise. Since the age of that great master, the history of aneurisms of the arch of the aorta has greatly advanced, both pathologically and clinically. However, the history of the disease is complete in no book, either French or English, at least we do not know of any one, and all our renewed inquiries from several of the best learned men have proved useless. Of course, almost every book on pathology contains some information on the subject; and Corvisart, Scarpa, Kreysig, Bertin and Bouillaud, Laennec, Hope, Hodgson, Thurnam, Stokes, Broca, Leiton and many others have published important papers, but we have not met any containing a *full, complete,* and *detailed* history of this very important and interesting disease. Dr. Charcellay, of Tours (France), has, we know, written his thesis for graduation, on this subject, but we did not succeed in seeing his paper, notwithstanding all our researches. That thesis was published some twenty-five years ago, and, from what we heard, we feel inclined to think that, under the name of aneurism of the arch of the aorta, the author has, likely by some unaccountable tendency of the times, included other diseases, such as insufficiency of the aortic valves.

The essay that we have, this day, the honor of presenting to the Medical Faculty of the University of Louisiana, for the degree of Doctor of Medicine, is the result of researches in most French, English and American modern books and periodicals within our reach; of information obtained from our professors; and, lastly, from the cases we have had ourself the opportunity of examining.

1. See Grisolle, *Pathologie Interne*, 3c edition; Paris, 1862; vol. 2, p. 371. Vailleix, *Manuel du Médicin Practicien;* édition Lorain, Paris, 1867.
2. Nélaton, *Pathologie Chirurgicale*; Paris, 1844; vol. 3, p. 475.

NORMAL OR PHYSIOLOGICAL RELATIONS.

TABLE I.—*Systematical Relations of the Arch of the Aorta, which is in relation with:*

						ADDITIONAL OR ACQUIRED AND ABNORMAL OR PATHOLOGICAL RELATIONS (POSSIBLE RELATIONS OF THE TUMOR)
Bones which are	Anteriorly the	Sternum				Ribs. Clavicle.
	Posteriorly the	Bodies of vertebræ				Ribs Scapulæ.
Cavities which are either	Cavities without communication with the exterior divisible in	Serous C. which are	Of org. of circulation, either:	Pericardium		
				Cardiac, the	Auricles	Ventricles.
				Arterial, the	Pulmonary artery	Subclavian A.
					Bronchial artery	Carotid A.
				Venous, the	Superior or Desc. cava V.	Innominate V. Subclavian V.
				Lymphatic, the	Thoracic duct	Internal mammary V.
			Or of org. of respiration, the	Pleura		
		C. of cellular tissues, which are the	Cellular tissues between the coats of the aorta — dis aneurism			
			Posterior mediastinum			
		Osseous C. which is the				Spinal canal (after the vertebræ have been destroyed)
	Cavities with communication with the exterior divisible in	Mucous C. which are	Respiratory	Lung		
				Bronchus		
				Trachea		
			Or digestive	Œsophagus		
		And cutaneous (?) which is the	Surface of the skin (atmospheric medium)			
Nervous structures.	Central structure, which is the					Spinal chord (after the vertebræ are destroyed.)
	Peripheral structures or nerves, divisible into: nerves	Of animal life—i. e., arising from the cerebro-spinal axis, and divisible into: nerves	Of motion only, distributed to the	Respiratory system, the	Phrenic or diaphragmatic	
					Recurrent or inf laryngeal	
			Of motion and sensation, distributed to the	Parietes of the chest, the	Intercostal nerve	
				Neck and arm, the	Brachial plexus	
				Digestive, circulatory and respiratory organs the	Pneumo-gastric	
		Of vegetable life—i. e., not arising directly from the cerebro-spinal axis which is a	Motor-sensitive, distributed to the	Digestive circulatory and respiratory organs, the	Great sympathetic	

TABLE 2.—*Topographical Relations of the Arch of the Aorta, which are divisible into:*

An ascending arch which is divided into	An oblique portion which is in relation	Anteriorly with the	Infundibulum of the right ventricle, which crosses perpendicularly	
		On the right with the	Angular space separating the Infundibulum from the right auriculo-ventricular opening	
		Posteriorly with the	Auricles which form a half of a sheath or cylinder around it	
		On the left with the	Trunk of the pulmonary artery, which coils or winds around it like the ridge of a screw	
	A vertical portion, which is in relation	Anteriorly with the	Pericardium	Ribs, clavicle, skin.
		On the right with the	Right portion of the sternum	Internal mammary vein.
		Posteriorly with the	Superior or descending cava vein	
		On the left with the	Right division of the pulmonary artery and the remains of the arterial canal	
			Trunk of the pulmonary artery, which embraces it by its concavity	
	Anteriorly or on the left, with the		Phrenic nerve	
			Left pleura	
			Left lung	
A transverse arch which is in relation	Posteriorly or on the right, and from the right to the left, or antero-posteriorly with the		End of the trachea.	Brachial plexus.
			Origin of the left bronchus	
			Left recurrent nerve.	
			Œsophagus and pneumogastric nerve.	Great sympathetic.
			Thoracic duct.	
			Lymphatic glands.	
			Cellular tissue of the post. mediastinum	
	Inferiorly with the		Lymphatic glands	
			Left bronchus, which *is embraced* by its concavity	Ventricles of the heart.
			Left recurrent nerve, which *embraces it* by its concavity	Subclavian artery.
	Superiorly with the	Innominate artery.	Between the triangular space of which the trachea is seen	
		Left carotid artery.		
		Left subclavian artery		
A descending arch which is in relation	Anteriorly, and from above downwards with the		Lymphatic glands	Internal mammary vein.
			Left bronchus	Ventricles
			Left pulmonary artery and vein and bronchial artery	
			Pericardium and auricles	
	On the right with the		Œsophagus	Spinal canal.
			Thoracic duct	Spinal cord.
	Posteriorly with the		Vertebral column	Ribs.
				Scapulæ.
	On the left with the		Left pleura and lung	Skin.
				Intercostal nerve.
				Great sympathetic.

All those who so kindly assisted us in our task, we beg to accept our sincere thanks; and of all those who shall read these lines, we ask indulgence for the deficiencies of our "essay."

Our citations are numerous, because we have endeavored to prove that the facts or opinions we express, have been witnessed or expressed by higher authorities than ours; and because, also, we wish to leave with them, besides the honor, all the responsibility of those facts and opinions. Our sole claim, our sole merit, if merit at all there is, is the arrangement, the classification, the *method* in a word, which we have followed in writing down the many facts gathered. Our motto has been, and is, "*Multa Paucis*," and "*a place for every thing and every thing in its place.*"

Definition.

Aneurisms of the arch of the aorta are aneurisms of that portion of the aorta which extends from the left ventricle of the heart, to the space between the third and fourth dorsal vertebræ,[1] where the vessel assumes the name of descending thoracic aorta.

Relations of the Arch of the Aorta.

It is important to have the relations of the arch of the aorta present to the mind, in order to understand thoroughly the symptoms of compression by the tumor upon the surrounding organs, and the site of rupture of the aneurisms.

The following tables will give a ready and complete description of these relations, which are considered under a systematic and topographical point of view, and also in the normal or healthy state, and in the pathological. [See accompanying table.]

Frequency.

Frequency presents to study, 1st, the frequency compared with that of aneurisms of other parts; 2ndly, the frequency as regards different portions of the arch; 3dly, the comparative frequency of the latent or undetected aneurisms and the revealed or detected forms; 4thly, the frequency compared to the population; 5thly, the frequency compared to the age.

1*st*, *The frequency of aneurisms of the arch compared with that of the other arteries* is in favor of the first. Dr. Lidell[2] says, that out

1. This limit varies; some anatomists state the third vertebra (Richardson, Leidy); and others the fourth (Harrison, etc).

2 John A. Lidell, M. D., of New York, on internal aneurism as cause of sudden death, etc., in *American Journal of Medical Sciences*, January, 1867, p. 47.

of 551 aneurisms tabulated by Dr. Crisp, [1] the site of the disease was in the thoracic aorta in 175 of the cases; and it is altogether probable, he remarks, that the relative frequency with which aneurisms of the aorta occur is not fairly represented by Dr. Crisp's table, and that, in reality, this disease has its site in that portion of the arterial system much oftener than said table would lead to suppose.

2*ndly*, *Frequency as regards the different portions of the arch*, is, according to Dr. Lidell's paper, that aneurisms of the arch are more frequent in the ascending portions of that vessel; it is met with next in point of frequency in the transverse part of the arch; and beyond the arch in general, the more distant from the heart, any portion of the aorta is, the less also is its liability to become affected by aneurism.

3*rdly*, *As for the comparative frequency of detected or undetected aneurisms*, Dr. Lidell thinks that the pathological anatomist who forms his opinion with regard to the relative frequency of aneurisms in the ascending portion of the aorta, solely from what he has seen in the dead-house of a general hospital, will greatly err, because the cases of internal aneurism determining almost always sudden death, comparatively seldom enter any hospital. "Furthermore," says he, "I am convinced, from personal observation and experience, that no inconsiderable share of the cases that die suddenly without medical attendance and without any obvious cause, such as violence, passion, intemperance, etc., and wherein, no autopsy being made, the death is supposed to have been produced either by apoplexy or by disease of the heart, die in reality from unsuspected aneurism of the aorta; and that, in a considerable majority of these cases, the aneurism is located in the ascending portion of the aortic arch." For example, in *ten cases* belonging to this category that have come under Dr. Lidell's notice, and wherein autopsies were held, the aneurism was found to be located in the ascending portion of the aortic arch, and in the abdominal aorta in the remaining instance.

4*thly*, *Frequency compared to the population* is an interesting point. On examining the Inspector's reports of the city of New York for a series of years, Dr. Lidell found that, during a period of nine years (from 1856 to 1864), no less than two-hundred and forty-four interments of subjects, whereof aneurism was recognized as the cause of death, were registered in his office. In how many additional instances

1 Dr. Crisp on diseases of the blood vessels, pp. 113–127.

during this period, death was, in reality, produced by internal aneurism, although reported as occasioned by some other cause, such as rupture of blood vessel, hæmorrhage, disease of the heart, angina pectoris and apoplexy, must be left to conjecture.

5*thly, The frequency compared to the age* is the following: the analysis of a table of 343 cases, carefully compiled by Dr. Lidell [1] from the annual reports of the city Inspector of New York, during a period of nine years, shows that there died of aneurism in New York city 1 between the age of 2 and 5 years; 1 between 5 and 10; 2 between 10 and 15; 6 between 15 and 20; 25 between 20 and 30; 81 between 30 and 40; 69 between 40 and 50; 24 between 50 and 60; 20 between 60 and 70; 6 between 70 and 80; 2 between 80 and 90.

Divisions.

Aneurisms of the arch of the aorta are divisible according, 1st to their site or relations with the superficial parts; 2ndly to the communications of the sac; 3rdly according to their etiology; 4th, and lastly, to the number of tunics or coats involved in the aneurisms.

1*st, According to their site or relations with the superficial parts*, they are called *internal* or *medical* aneurism. The term "medical" has been given to them because it is impossible to apply to them any of the surgical operations generally applicable to aneurisms situated in the course of an artery within the reach of surgical interference, and called, for that reason, "surgical aneurisms."

Aneurisms of the arch are not, during all their evolutions, wholly internal or medical, for, when voluminous, or when developed close to the osseous thorax, they appear, in lesser or greater extent, on the exterior of the body, and some of the surgical means of treatment may be then applied.

2*ndly, According to the communications of the sac*, aneurisms are called *arterial*, when the sac or dilatation communicates only with the aorta; and *varicose aneurisms* or *arterio-venous aneurisms*, when the pouch communicates with one of the neighboring venous cavities (heart and divisions) or venous channels (pulmonary artery, descending vena cava). These varicose aneurisms, well studied by Dr. John Thurnam, are usually the consequence of the rupture of an arterial sac in one of the above named organs.

However, a penetrating wound, involving the arch of the aorta

1 Dr. Liddell, *op. cit*, p. 48.

and the heart, or the vena cava, it is easily conceived, may give rise to a varicose aneurism of the arch.

3*rdly, According to their etiology,* aneurisms of the arch are either *primitive, consecutive* or *secondary* to aneurisms of the heart or to aneurisms of the innominate artery, as we shall hereafter explain more at length.

4*thly, According to the number of tunics involved in the tumor,* the aneurism is called true aneurism when all the tunics participate in the composition of the pouch, and false aneurism when one only of the tunics is destroyed. The false aneurism is subdivided, according to the tunic destroyed, into *external mixed aneurism* [1] or *an. mixtum externum,* [2] when the internal coat being destroyed, the pouch is formed by the dilatation of the external coat, and *internal mixed aneurism* or *anévrisme herniale* (Dupuytrin),[3] when, on the contrary, the external coat is destroyed and the pouch formed by the expansion of the internal coat, through the opening presented by the external one.

This division is not, far from it, admitted by all authors, the greatest majority of writers rejecting the internal mixed aneurisms as an impossibility and as a fanciful creation, never met with in nature. That division is applied to all aneurism in general, and if we recall it here, it is because it is only on the arch of the aorta that an aneurism, looking somewhat like the so-called internal mixed aneurism, was observed and was brought forth to maintain the old divisions. The best known cases are those of Dupuytren and Antoine Dubois,[4] in which the sac was apparently lined by the serous coat of the vessel, and that of Wardrop [5] presenting a similar disposition; but Béclard and Bizot have remarked that the internal lining membrane of the sac, apparently continuous with the internal coat of the vessel, and thought to be that internal coat dilated, is in such cases but a mere false membrane, resulting from the inflammation of the sac. This remark was believed to express the truth, and thus a deadly blow accelerated the downfall of internal mixed aneurisms.

There are, at present, but the very contestable experiments of Haller on the dog and on the arteries of the mesentery of the frog,

1 See John Thurnam, on aneurism of the heart—in *Medico-chirurgical Transactions*, series 2nd, vol. 3, 1838—p. 232.
2 See Hasse, *Pathological Anatomy*, 1846—p. 87.
3 See John Thurnam—*op. cit.*, p. 234.
4 See *Compendium de Chirurgie Pratique*, par Denouvillers, Bérard et Gosselin.
5 Wardrop on Aneurisms, London, 1828—or see Hasse, *op. cit.*, p. 91.

to sustain the old theoretical division; while the well known experiments of John Hunter and Everard Home[1] are against it.

The arch of the aorta partakes with the rest of the vessel only of the privilege of presenting examples of the variety of aneurisms, called by Laennec, *dissecting aneurisms*; a variety acknowledged by all, and consisting, it is known, in a separation of the middle and internal coats of the vessel, by the blood passing through a solution of continuity of the internal coat, insinuating itself between the said coats and dissecting them from each other as with a knife; it forms thus either a blind pouch or a distinct canal, opened at both extremities, or at some intermediate point.[2]

ETIOLOGY.

The causes of aneurisms of the arch are General or Special, or at least for some of them, more often witnessed on the arch.

A—*The General Causes* are those common to all aneurisms in general, and we shall not dwell upon them.

B — *The Special Causes* are either of a traumatic or spontaneous origin.

a—*As for traumatic aneurisms*, some patients report to the date of an accident or injury of the chest for the cause of their disease. But it is questionable whether the accident was really the cause of the aneurism, or whether it only prompted an examination which led to the discovery of the already existing aneurism. In some cases, however, there was very likely a beginning or incipient aneurism, and the traumatic cause has only given it a sudden extension in rupturing the internal coat, already dilated, softened and partially destroyed.

b — *Spontaneous aneurisms* recognize anatomical and physiological causes, both producing primitive aneurisms; and pathological causes producing consecutive, or secondary aneurisms of the arch.

[3] *The anatomical causes are:* The proximity, or situation close to the heart; the direction of the arch; the inequality of calibre of that arch, and the structure of the same.

The proximity to the heart is the cause that the impulse of the blood, produced by the contractions of the left ventricle of the heart, acts more powerfully upon the external tunics, in the portions of the

1 John Hunter and Everard Home, in "Transactions of a Society for Improvement of Medical Knowledge"—vol. 1, p. 144; or Hasse, *op. cit.*, p. 91.

2 Pennock, cited in Gross' Pathological Anatomy—Phil., 3rd Edit., 1857, p. 251. McDonnell and Thomson, cited in Valliex, *op cit.*

3 Valleix; *op. cit.*, p. 193.

aorta which are nearer to the great central organ of the circulation, than in the parts that are remote from it; and, speaking generally, we may say that the degree of outward pressure exerted upon the walls of the aorta by the contraction of the left ventricle, diminishes as the distance from the heart increases.[1]

The direction or curvature of the arch is here a special predisposing cause, the wall of the vessel receiving, at an acute angle, the impulse of the blood at each ventricular contraction.

As regards the inequality of calibre, the sinuses of the arch, the small sinuses (lesser sinuses of Valsalva) corresponding to the sigmoid valves, and the large sinus (greater sinus of Valsalva) corresponding to the union of the ascending and horizontal portion of the arch, are considered to be also predisposing causes; the latter sinus, in fact, resembles an incipient aneurism.

These facts account for the greater frequency of aneurisms of the ascending arch, compared, especially, to those of the descending portion. Aneurisms of the ascending aorta developed in the situation of the aortic sinuses, in the great majority of cases, proceed from the right coronary sinus. This circumstance appears to be mainly due to the fact that the regurgitation of blood upon the sinuses, occurs chiefly on the right anterior aspect of the vessel.[2] Aneurisms originating above the small sinuses implicate, most frequently, the right anterior wall of the vessel; this is probably owing mainly to the impulsion of the blood against this part by the contractions of the left ventricle; the direction of the aneurismal tumor is also towards the right of the mediam line.[3]

With regard to the structure, we shall remark that a part of the ascending portion of the arch is embraced within the pericardial cavity, and is directly covered or invested only by a thin serous membrane continued on to it from the heart, and not by a tough fibrous sheath, such as belongs to the arteries in other situations. The walls of that portion of the arch, being thus not supported or strengthened by the pressure of a sheath, are peculiarly liable to give way, and become the seat of aneurism;[4] in consequence of the absence of a distensible cellular coat[5] around that intra-pericardial portion, these aneurisms prove fatal from rupture at an earlier period; Dr. McDonnell,[6] though,

1 Dr. Lidell; *op. cit.* p. 48.
2 See Gray's Anatomy, p. 364
3 Dr. Lidell; *op. cit.*, p. 70.
4 Dr. Lidell; *op. cit*, p 48.
5 Thurnam, aneurism of the heart; *op. cit.*, p. 232.
6 Dr. McDonnell, *Dublin Journal*, Jan., 1841; or in *Archives de Medecine*, *Ne. Serie*, vol. 7, 1845, p. 481.

relates a very interesting case of the formation of a "dissecting aneurism" of the ascending arch, in which the blood was forced, says he, between the external coat of the vessel and the detached serous layer of the pericardium, which is situated between the aorta and the pulmonary artery, forming thus a solid circumscribed clot.

2*ndly*, *The physiological causes* consist in the exaggeration of all muscular and respiratory movements,[1] which act in accelerating the circulation, and increasing the strength of the impulse of the blood against the parietes of the arch.

3*dly*, *The pathological causes*, are: as diseases of the aorta, strictures of that vessel; as diseases of the heart, hypertrophy and insufficiency of aortic valves; as diseases of the innominate artery, its aneurisms.

In strictures of the aorta, the portion of vessel situated above, is often very much dilated,[2] and thus constitutes a variety of true aneurism.

An hypertrophied heart, increasing the strength of the column of blood will be a predisposing cause;[3] moreover, the connections of the aorta with the heart accounts for the general, and more or less extensive, dilatation of the origin of the arch in cases of hypertrophy of the heart, and of insufficiency of the aortic valves.[4]

In aneurisms of the innominate artery, the arch of the aorta is often dilated, on account of the obstacles to the circulation; this dilatation *a tergo* can be carried far enough to produce an insufficiency of the aortic valves, and can be extended to the left ventricle, which is hypertrophied consecutively.[5]

Pathological Anatomy.

Divisions.—Four generally well marked and distinct clinical stages or periods rule the whole of the history of aneurisms of the arch of the aorta, and should, therefore, be well borne in mind.

These stages are, the 1st or primitive stage, or anatomical alterations in the parietes of the aorta, preceding the formation of the aneurism; the 2d stage, corresponding to the beginning of the aneurism; the 3d, or stage of development; the 4th and last, or stage of termination.

1*st Stage. The first or primitive stage, or the alterations in the parietes of the aorta, preceding the formation of the aneurism*, vary according

1 Valleix; *op. cit.*, p. 191, vol. 3.
2 *Ib.*
3 *Ib.*
4 Charcellay, of Tours, cited by Nélaton, *op. cit.*, p. 476.
5 Follin; *Pathologie Chirurgicale*, Paris, 1866; vol. 2, p. 378. Or see Liégeois, in *Bulletins de la Société Anatomique*, December, 1856.

to the cause and the species of aneurism. If the aneurism is traumatic, the parietes will be found healthy, unless there is a coincidence; if the aneurism is spontaneous, the state of the arterial tunics will vary according to the species of aneurism. Should the aneurism be a false, or mixed aneurism, (1) the parietes will be usually found to have undergone a more or less extensive fatty or atheromatous degeneration, and sometimes there will be found some calcareous cartilaginous and even osseous incrustations or patches, but still covered by the thin and transparent internal membrane (2). Corvisart has described small tumors of the aorta filled with, some say, atheromatous, others, fibrinous matter, and separated from the cavity of the vessel by a thin membrane, analogous to that of the internel surface of the aorta; which tumors he considered as a form of incipient aneurism or cyst. Should the aneurism be a true aneurism or dilatation, the parietes are generally free from these alterations. The importance of such differences is obvious as regards the formation, course, duration and termination of the disease. An aorta with sound, elastic and strong parietes better and longer resisting dilatation and rupture than an aorta with unhealthy, inelastic and weak walls, incessantly beaten by the impulse of the blood from the heart, and breaking down or giving way at almost every contraction of the normally so powerful left ventricle, which sometimes, moreover, is hypertrophied.

2*d Stage.* The second, or stage of beginning of the aneurism, varies according to the species and origin. In false aneurism it is marked by an ulceration of the internal membrane, by a fissure or a rent more or less extensive of that same tunic, and through which the blood gradually insinuates itself to dilate and expand the middle and external coats. In true aneurism, it is said that the weakened coats will all yield at the same time, and dilate together. In traumatic aneurism, it will be found that it is the tissue of the cicatrix of the wound that will give way.

3*d Stage.* The third, or stage of development, comprises the alterations of the developed aneurism, the alterations consecutive to the aneurism usually appearing gradually, as the aneurism grows.

A.—The alterations of the developed aneurism are divisible into the alterations presented by the tumor or sac, and those presented by the aorta above and below the sac.

(*a.*) The alterations or peculiarities presented by the tumor or sac, are not always the same in the true and in the false aneurism. These

peculiarities are relative to the number of sacs, the seat of the aneurism, the volume, the form, the parietes of the sac (structure, thickness), the internal surface (aspect), and, lastly, the external surface (its relations with, and action on, the surrounding structures).

Two different methods can be followed in the description of these peculiarities: in the first, or comparative method, each character (the seat, for instance) is at once examined in true, then in false aneurisms, comparing, as it were, the description, and showing the differences; in the second, or systematic method, all the characters, seat, volume, form, etc., one after the other, are successively examined, first in one of the species of aneurism, and then in the other. We shall choose the first, as it composes the lesions and involves less repetition.

The number of sacs is variable. There is generally but one; sometimes, though, several may be seen, situated at a certain distance from one another.[1] It is not very rare, either, to see other aneurisms (popliteal, the most often) coëxisting on the same subject with aneurisms of the arch,[2] both being developed under a general cause, called by some authors the aneurismal diathesis.

The seat of aneurisms varies. That of true aneurism is most often the ascending portion of the arch; we have already said that the direction and calibre of the vessel, at that point, accounted for it. In false aneurism the sac is generally situated on the transverse or descending arch;[3] false aneurisms do not occur in the pericardial portion of the arch, in consequence of the absence of a distensible cellular coat in this portion of the artery.[4]

The *volume* of the aneurism is very variable. It is often double the volume of the normal aorta; sometimes it is as voluminous as the colon;[5] at other times, the double of the heart (Corvisart); in one instance it was of the size of a fœtus' head (Laennec). According to Dr. Lidell, aneurismal tumors developed from the ascending arch, attain a large size in but a small proportion of cases; the walls of such aneurisms are liable to give way, because they are not strengthened by the coalescence with them of any arterial sheath or any considerable planes of connective tissue.

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1 A case of double aneurism of the ascending arch, by Dr. Bellingham, in *Dublin Med. Press*, May, 1849; or *Archives de Médecine*, 4 Série, vol. 21, 1849, p. 341.
A case of double aneurism of descending arch, by Dr. Gigon, in *Archives de Médecine*, 4 Série, vol. 16, 1848, p. 522.
2. Dr. Lidell, *op. cit.*, p. 76.
3 Grisolle, *op. cit.*, p. 368.
4 John Thurnam on Aneurisms of the Heart, in *Medico-Chirurgical Transactions*, Series 2nd, Vol. 3, 4, 1838, p. 233.
5 Bouillaud, *Dic. de Médecine, en 30 Vol., Article Anévrysmes.*

The *form* of the aneurism varies. The true aneurism presents several varieties: (1) the dilatation may be *general* (that is to say, include the whole of the circumference of the vessel); and, in that case, the dilatation may be uniform, fusiform or alternate, i. e., consisting of several successive enlargements, between which the aorta retains its normal volume [1] (this constitutes the *aneurismal varix* of Breschet)[2]; (2) the dilatation may be *partial and lateral*, that is, limited to a part of the circumference of the vessel; (those cases of partial true dilatation are rare; we have, though, most reliable cases observed by Laennec, Grisolle [3] and others.)

The *false* aneurism may be, like other aneurisms, sacciform, (ampullar aneurism of Cruveilher);[4] cup-shaped or crater-like. It presents this peculiarity, as we have already stated, that the *dissecting form* has never been observed on any other vessel. As the form of the aneurism rules the form of the orifice of communication between the sac and the cavity of the vessel (Broca),[5] we will not insist upon it.

The *parietes* of the sac present a thickness which varies; sometimes the parietes are as thin even as a sheet of writing paper, and sometimes very thick and hypertrophied; so that the aorta, like the heart, has its *active* and its *passive* aneurisms.[6] The thickness is rarely uniform, or the same on every part of the tumor, especially if the parietes are already thin. In some places, where the thickness is less, the walls having yielded, form one or more superadded tumors;[7] where the sac threatens to rupture, the parietes naturally are so much thinner that the rupture will take place in a shorter space of time.

The *structure* of the parietes varies according to the species; in *true* aneurism the structure is usually identical with that of the normal aorta; in *false* aneurism they are formed by the external coat, which sometimes, from an increased nutritive activity, becomes dense, resistant, fibrous, or even fibro-cartilaginous.[8] It is often reinforced by the surrounding tissues or structures, lungs, pleura, cellular tissue, etc., and sometimes by the bodies of the vertebræ, which are denuded, all elements which are adherent being united by adhesive in-

1 Idem.
2 See Valleix, *op. cit.*, p. 202; or Breschet, *Memoires Chirurgicaux sur differentes especes d'anévrysmes*, Paris, 1834.
3 Grisolle, *op. cit.*, p. 308.
4 Stokes, *Diseases of the Heart and Aorta*, p. 537.
5 Broca, *Des Anévrysmes et de leur traitment.* Paris, 1856.
6 Bouillaud, *Dre. de Medecine, en 30 Vol., Article Anévrysmes*, p. 101.
7 Idem.
8 G. B. Wood, *Practice of Medicine*, 5th Edit. Philad., 1858, Vol. 2, p. 228.

flammation and plastic lymph, so as to form but one mass, which is incorporated with the parietes, giving them increased thickness and strength.[1] In some instances, the parietes proper having disappeared, the sac, or a portion of it, is formed by these surrounding and modified structures (Wood); the vertebræ, being destroyed, may form a portion of the sac (Grisolle).

The internal surface of the sac presents to study its aspect or appearance and its lining fibrous laminæ or clots. Those characters vary in both species. In true aneurisms, the aspect or appearance of that surface is generally even, regular, smooth and soft. As for the lining fibrous laminæ or clots, according to Dr. Wood[2] one of the points in which complete dilatations most strikingly differ from the ordinary form of aneurisms, is the want of coagula; in some instances, though, there are layers which more or less fill the cavity. In partial dilatations it is more common to meet with fibrinou. deposits, though not forming concentric layers, as in false aneurisms, but appearing to be attached by a kind of pedunele to certain parts of the surface. According to Grisolle,[3] the lining fibrinous laminæ or clots vary with the volume of the tumor; if the aneurism is small, they are often wanting; if the aneurism is extensive, they will be found in a lesser or greater quantity, and presenting all the characters noticed in those of false aneurism. In false aneurisms the aspect or appearance of the internal surface is almost always rough and hard, resulting from the presence of calcareous and sometimes cartilaginous incrustations or patches. We have already said that, in a few instances, the internal surface had been found lined by a false membrane, which, having been mistaken for the internal coat of the vessel, had created the impression that there existed in nature a variety of aneurism called Internal Mixed Aneurism. The lining concentric fibrinous laminæ or clots exist, as a rule, and are more or less numerous, more or less thick and resistant, and more or less high in color, according to the same conditions as in all other aneurisms of other parts.

The external surface is the portion of the tumor by which it gains the relations above stated (see relations of the arch of the aorta) with the surrounding structures and acts on the same structures; all of which will be soon given in detail.

(b.) *The alterations presented by the aorta below and above the sac* vary according to the cause and species. In traumatic aneurism,

1 Wood, *op. cit.*, pp. 228—229.
2 Idem, p. 227.
3 Grisolle, *op. cit.*, p. 368.

the parietes of the vessel are sound; in true aneurism, they are also usually, but not always, healthy; in false aneurism it is a rule to find atheromatous degenerations, or calcareous, cartilaginous or even osseous incrustations or patches, similar to those of the walls of the sac and of the same date and origin.

B.— *The alterations consecutive to the aneurism, or appearing as the aneurism grows, or yet resulting from the existence of the aneurism*, are of two sorts: first, the anatomical alterations, or alterations not from pressure, or, again, alterations of the anatomical characters of the organs of circulation; and, secondly, the mechanical alterations, or alterations from pressure on the surrounding organs.

(a.) The anatomical alterations, or alterations not from pressure, i. e., the alterations in the anatomical characters of the organs of circulation, comprise the alterations or changes in, first, the heart, and in, secondly, the vessels arising from the arch of the aorta.

(1.) The heart may be altered in its volume, in its aortic valves and in its structure. The alteration in volume is much disputed. Grisolle [1] asserts that it is often hypertrophied. Stokes,[2] on the contrary, looks upon the alterations of the heart in general as quite accidental; he says that, when it was found, it was preëxistent to the aneurism; but, when not so, there is no reason to believe that the existence of an aneurism in any portion of the aorta throws additional labor on the heart; and hence we commonly find a healthy heart existing with a vast aneurism. Moreover, he adds that the most violently pulsating aneurism he ever met, coëxisted with a small and atrophied heart.

The aortic valves are altered variously. They are, in some instances, thinner than usual.[3] In their continuity sometimes they present numerous little holes near their free margin.[4] Lastly, in their functions they may be insufficient.[5] The alterations of structure, when existing, consist in a fatty degeneration of the muscular tissue, and, consequently, a soft and flabby condition of the heart.

(2.) The arteries arising from the arch, that is the innominate and the left carotid and subclavian arteries, may be altered in their situation or insertion, and be inserted on the sac; in their calibre, and be more or less dilated, which is often the case.

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1 Grisolle, *op. cit.*, page 370.
2 Stokes, *op cit.*, page 579.
3 Dr. Lidell, *op. cit.*
4 Idem.
5 Corvisart, *Essai sur les Maladies du Cœur et des Gros Vaisseaux*. Paris, 1806; or 2nd edit., 1811; or 3rd edit., 1818.

(b.) The mechanical alterations, or alterations from pressure of the tumor, are observed on the bones, cartilages, nervous structures (nerves and spinal cord), heart, lungs, cavities (pleura, pericardium, mediastinum), channels (respiratory, digestive, vascular), cellular tissue, muscles, and, lastly, the skin. (1). The bones, if they yield to the pressure of the tumor, are only altered in their position and situation, and are displaced. The clavicle has been seen pushed out of place, and the scapula is sometimes lifted up or thrown to one side. Should the bones resist, the aneurism will alter their continuity, and bore a hole through them or along their borders. Such is the case with the bones we have above mentioned (see relations of the arch of the aorta). We shall only call here the attention, more particularly, to the bodies of the vertebræ, which may be partially destroyed[1] and infiltrated with blood, or be totally destroyed, as it has been observed by Laennec,[2] who saw the blood penetrate the spinal canal.

(2.) The cartilages will neither yield nor be absorbed.

(3.) The nervous structures (spinal cord and nerves), may be altered in their form and become flattened; in their length, and become elongated; in their consistency, and become softened (the spinal cord especially); in their stucture, and present the absorption of the nervous marrow and tubes.

(4.) The heart sometimes presents alterations in its position and is thrown out of place. It is either depressed or displaced towards the axilla. In some instances it is altered in its volume. Though it may be hypertrophied, it is not of the size it would exhibit, should the sac, having grown in another direction, have left it free from all compression. Its cavity, remarkable to say, has been seen by Thielman Schmidt[3] encroached upon by an aneurism of the arch, which passed through the right auricle and penetrated the corresponding ventricle, traversing the tricuspid valves.

(5.) The lungs may be altered in their volume: directly, when the tumor presses on them, and in proportion to the size of the sac; and indirectly, for when the bronchus is compressed, there is a collapse of the corresponding lung.[1] Its consistency is also increased in both cases. Stokes has seen it altered in its structure by pathological productions, by chronic inflammation and continuous infiltration with

1 Grisolle, *op. cit.*, page 369.
2 Idem.
3 Thielman Schmidt, cited by Valleix, *op. cit.*, page 203.
4 Stokes; *op. cit.*, p. 521.

blood, and by suppurating cavities resembling those of softened tubercles; and in its nutrition by gangrene from compression of the bronchial or nutrient artery of the lung.

(6.) [1]The cavities, pleura, pericardium and posterior mediastinum, are more or less altered in their capacity, according to the size and situation of the tumor.

(7.) The channels that are liable to be impaired are the respiratory (the trachea, and the bronchi), the vascular (the innominate, left carotid and subclavian, pulmonary, bronchial or nutrient artery of the lung),[2] the veins (descending cava, innominate, pulmonary, bronchial, internal mammary), or the lymphatics (the thoracic duct—Laennec). In a general manner, we may say that these channels may be altered in their situation or direction, and be thrown out of their normal position and course; in their calibre, and be flattened, and the vessels obliterated or plugged; lastly, in their structure and continuity, and be inflamed, ulcerated or perforated.

(8.) The cellular tissue is almost always altered in its extent and thickness, being stretched over the sac, or in its structure, having often between its fibres and in its meshes, deposits of plastic lymph.

(9.) The muscles, when the tumor has worked its way out of the thoracic cavity, may be found altered in their extent and thickness, being stretched over the parietes of the aneurism; in their structure, the muscular elements being absorbed or replaced by fatty granulations, and the fibrous portion only remaining.

(10.) The skin, when at last the sac has reached it, is altered, like the two preceding structures, in its extent and thickness, and in its structure; and, moreover, in its coloration, for when thin, it becomes violet, or of a pinkish hue.

4TH *STAGE.— The alterations of the fourth stage, or stage of termination of the aneurism*, vary according to that termination, which may be a stationary state, cure or death.

(A.) In case of stationary state, which is very rare, there are changes in the contents of the tumor, which is so much more filled with fibrinous clots as the tendency to resistance is greater; in the parietes of the tumor, which are thickened, dense, resisting, hypertrophied, and sometimes fibro-cartilaginous, as above stated; in the surrounding structures, which are found united and adherent together; lastly, in the heart—sometimes fatty degeneration weakens it and thus assists in prolonging life.

1 *Id.*

2 For nutrient artery of the lungs, see Dr. Carswell, in Stokes *op. cit.*, p. 571; or Dr. Green, *idem*, or in *Trans. Path. Soc.*, *Dublin Journal of Med. Sc.*, vol. 17, p. 522.

(B.) The cure may be attended with the same changes as above, in the surrounding structures and the parietes of the tumor; but it is more especially, and often solely, due to the changes in the contents, i. e., coagulation of the blood, either spontaneous, or from inflammation or gangrene of the sac. The small tumors of the aorta, filled with the fibrin of the blood, and described by Corvisart,[1] are believed by Hodgson to be a mode of termination, a cure by coägulation of the blood.

(C.) The termination by death presents alterations worthy to be especially described only in cases of rupture. We have, then, to study the seat of the rupture, the number of the openings, the size of the rent, the permeability of the opening, and lastly, the diffusion of the blood according to the seat of rupture.

(a.) The seat of the rupture is divisible into (1) ruptures in which the blood is poured into a new or non-vascular cavity or channel,[2] without communicating with the exterior and serous (pericardium, pleura), or cellular (posterior mediastinum), or osseous (spinal canal),[3] or by communicating with the exterior and mucous and depending upon the alimentary canal (œsaphagus), or upon the respiratory organs (trachea, bronchi, lung), or lastly, cutaneous (the surface of the skin); (2) ruptures in which the blood is poured, or returns, into the circulatory stream[4] from rupture between the coats of the aorta itself, (dissecting aneurism[5]), in the heart (auricles, ventricles), in the arteries (pulmonary), or in the veins (descending cava). These last seats of rupture constitute the very important variety of varicose aneurisms, or arterio-venous aneurisms of the arch of the ascending aorta, so remarkably well studied by John Thurman.[6] As regards the name of "spontaneous varicose aneurism," Dr. Thurman remarks that it may be necessary to meet the objection that very possibly will be made, that to call an aneurismal sac which has ruptured into the right cavities of the heart, or into the pulmonary artery, a "spontaneous varicose aneurism," is a "pathological transcendentalism," and founded on a far-fetched, though ingenious analogy. He has therefore been gratified to find, since a great part of his paper was written, that Mr. Smith, of the Richmond Hospital, Dublin, had taken a

1 See Grisolle, *op. cit.* p. 373, and Valleix, *op. cit.*, p. 203.
2 Stokes, *op. cit.*, p. 552.
3 Laennec.
4. Stokes, *op. and loc. cit.*
5 Dissecting aneurism may, in turn, open in surrounding organs. See a case of rupture of a dissecting aneurism in the pulmonary artery, by Pirrie, in *Monthly Journal of Med.*, Nov., 1847, or in *Archives de Médecine*, 4 Séric, Vol. 16, 1848, p. 497.
6 John Thurman, on Spontaneous Varicose Aneurism of the Ascending Aorta, in *Med. Chir. Trans.*, Series 2d, Vol. 3d, 1840, p. 323.

similar view of the subject, and had anticipated the probable occurence of such a lesion as spontaneous varicose aneurism in the very centre of the circulatory system. When the communication exists between the left cavities of the heart, the lesion cannot, of course, be denominated a varicose aneurism, though both the general and the physical signs would probably have much analogy to those belonging to such cases. Dr. Thurman[1] says that, from the number of cases he has collected, varicose aneurism is not to be considered as a mere pathological curiosity, but, on the contrary, as a lesion which the practitioner should be prepared to meet.

(*b.*) The number of openings varies. There is generally but one, but in some instances there are several, either in the same organ, or from rupture in different organs at the same time.

(*c.*) The size of the rent varies, and it is very important. It is either large or small. On mucous membranes it is generally minute, while on a serous surface, as the pleura or pericardium, it is often, and perhaps usually, large; though Mr. Obré[2] relates a curious case in which an aneurism ulcerated into the pericardium by three small openings, each of them only about large enough to admit two bristles; and Marjolin has seen an old aneurismal tumor which had opened into the pericardium, and had there given rise to a well organized fistulous opening, establishing a communication between the sac of the pericardium and the sac of the aneurism. This disposition might be considered as an anatomical variety of aneurism.

(*d.*) The permeability of the opening is not always unaltered. The perforation is sometimes stopped or plugged either by the fibrinous clots lining the interior of the sac, or by the displacement of parts creating obstructions.[3]

(*e.*) The diffusion of the blood after the rupture, varies. On the surface of the skin and mucous membranes, it is, in general, free from all impediment; but on serous surfaces, it is not unfrequent to see adhesions limit the diffusion.

(TO BE CONTINUED.)

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1 Dr. Gardner, *Med. Chir. Trans.*, vol. XIII, or Holmes, *op. cit.*, p. 357.
2 Obré. *Path. Soc. Trans.*, Vol. 3, p. 307, or Holmes, *op. cit.*, p. 357.
3 See Dr. Reid, *Lond. Med. Gaz.*, Sept., 1846; or *Arch. Médecine*, 4 Série, Vol. 6, 1844, p. 501. Dr. W. H. Judd, *Lond. Lancet*, April, 1844; or *Arch. Méd.*, 4 Série, Vol. 8, 1844, p. 501.

Art. VII.—CLINICAL REPORTS:

By Dr. B. A. Pope, *in charge of the Eye and Ear Clinic of the University of La.*

A case of chronic inflammation of the lachrymal sac, complicating chronic conjunctivitis of three years' standing, and of extremely rebellious character; the disease of the sac, probably, originating at the roots of the teeth.

W. S., 31 years of age, has generally been healthy, with the exception of chronic dyspepsia. On the 10th of April, 1863, after much exposure in the army, he awoke with the left eye closed and discharging, presenting a very red appearance. The whole head and face were painful, but especially the teeth and upper jaw of the left side. He was treated at the time and subsequently, but could get no relief, except in the fact that the chronic disease gave less trouble than the acute.

This patient came to me for treatment in the latter part of Sept. 1865. Upon examination I found congestion of the ocular conjunctiva, and of the margins of the lids. The upper parts of the corneæ were somewhat vascular, as is usual in cases of chronic granular conjunctiva. Upon everting the lids, I found them very red, thickened and rough, with pale, flabby granulations towards the inner and outer angles, and firmer isolated ones in the middle and towards these margins. The lachrymal canals were narrowed, especially that of the left lower lid. Attention was not called by the symptoms to the lachrymal sacs, and they were not specially examined at first; nor did the patient give any history indicating that they were affected. It was noted at the time, however, that the left side of the nose was more, prominent than the other, so that it presented the appearance of being pushed to the right. Some of the lashes near the inner angles were turned inwards, so as to touch the conjunctiva. The caruncule lachrymales were enlarged, and hairs, much larger than normal, were growing from them. The sight of both eyes was affected, but that of the left more decidedly; in consequence of which the patient feared the necessity of quitting his profession, the practice of the law.

The usual treatment for chronic conjunctivitis was commenced; the hypertrophied caruncles were partially removed, and slight opera-

tions were performed near the inner angles, in order to correct the commencing inversion. The lachrymal canals were dilated, and in a short time no obstruction was presented to the ordinary probes used for that purpose. Soon the patient was able to use his eyes in studying and writing, the sight, as well as the inflammation, having been much improved. The right eye especially improved rapidly, although at first the granulations were worse in this eye than in the left. Between the commencement of the treatment and the first of the following February, there had been many variations in the condition of the eyes; but such improvement had taken place that the patient was then dismissed as cured, with the advice to return occasionally to have his eyes examined. The treatment had been much protracted, in consequence of his close application to business and repeated catarrhal attacks. The right eye had been well for some time, and remained so permanently.

Between the 1st of Feb., 1866, and the end of the following spring he returned several times, always suffering from a slight relapse in the left eye, which, however, yielded readily to treatment. In the meantime it was observed that these attacks always commenced at the inner angle of the eye, accompanied now by an increase of the uneasy sensations on the left side of the nose. The lachrymal passages were examined and found to be completely impervious to a fine probe and to water. Systematic dilatation was then commenced, and after three days a moderate-sized probe was passed. The operation was extremely painful, and had, in consequence, to be proceeded with very cautiously. The brow of the patient was very prominent, the bridge of the nose high, and the distance between the eyes probably less than the average. It was found necessary to give the probe an unusally great curvature, in order to succeed in penetrating into the upper entrance to the nasal duct. Dilatation was continued for a couple of months with decided diminution of tendency to relapse; still, a relapse occured now and then, and it became more than ever evident that the cause of relapse resided in the lachrymal sac. A full-sized probe could now be passed, consequently the trouble could not depend upon a hindrance to the exit of mucus and tears; it was therefore concluded that there must be a chronic inflammation of the bone or periosteum, any increment of which might give rise to irritation of the adjacent mucous membrane. The treatment was continued, but it was somewhat modified, in accordance with the view just given of the nature of the case.

On the left of the upper jaw there were several teeth which were broken off to a level with the gums. These the patient determined to have removed; and, to my astonishment, a most decided improvement commenced at once. Not only did the irritation of the sac, and the sense of uneasiness on the corresponding side of the nose rapidly diminish, but even the seeming thickening of the bony walls obviously diminished in forty-eight hours. This improvement continued until that side of the nose presented but little deformity, while the irritation of the sac was almost entirely relieved. There was subsequently one relapse, but it was not of a serious nature, and the case may be considered as at present cured.

This case presents many points of great interest, for it is the first case, as far as I am aware, in which a distinct connection between an affection of the teeth and a disease of the lachrymal sac has been traced. Of course serious diseases of the superior maxillary bone or of the antrum have been known to cause trouble in the lachrymal sac, by extension of the disease to the neighboring parts. Here, however, it was only observed that the roots of the extracetd teeth had, firmly attached to their extremities, elastic fibrous prolongations, about a quarter of an inch in length. The irritation at the roots of these teeth must have been propagated along the adjacent tissues, till it reached the anterior wall of the bony canal, and thence was propagated to the mucous membranes of the sac. Had it been an idiopathic affection of the sac, the degree of stoppage which had existed, would, in all probability, have caused more serious local disease. At no time, however, could pressure on the sac produce evacuation of matter through the puncta, nor was there, at any time, a tumor formed by accumulation of mucus or tears in the sac.

Entropium and Trichiasis. An extreme case successfully treated by a partially new method.

E. M., 22 years of age, delicate and nervous, gives the following history of her case: When about 14 years old, she had an attack of sickness, called by the physicians in attendance "Black Tongue," which commenced with a chill. Her tongue became much swollen, and the mouth and throat were much affected. At the same time an eruption appeared on her skin, commencing as small, hard, elevated spots, upon the surface of which "blisters" appeared and became "watery," and the surface "blackened" around for a short distance. This was followed by sloughing, to the extent of the blackened portion

of the skin, and then the eruption healed. The tongue "burst" and discharged much bloody pus. Following the chill, the eyes became affected severely, and a "red film" formed over the balls. The eyes were treated by cauterization. Her hair all fell out, and when it grew again, was partially white. Her nervous system was much affected and has remained weak. Once or twice each year since, she has been troubled with a peculiar papular eruption, which appears in small groups on various parts of the body, face, hands, arms and trunk. The eruption also seems to affect the *inner surface* of the *lids*, and is attended with considerable itching. The attacks commence with chilly sensations and nervous headache. There are successive crops of the papules, upon the surface of which small vesicles form, together with a little pus in the thickness of the skin. There was unusual breadth between the eyes, and the bridge of the nose was rather flat. Upon examination I found the lachrymal canals of the lids of the right eye closed at their point of entrance into the lachrymal sac; while those of the left lids were strictured. The conjunctiva was much atrophied and, at the same time, inflamed; but there was no discharge. Here and there were small isolated patches, elevated and inflamed, which itched and produced considerable irritation. These were not in the nature of granulations, but seemed to correspond with the eruptions on the skin. There was great change in the curvature of the cartilages of all the lids; so that almost all the lashes of the inner two-thirds of the upper lids, and those of the middle third of the lower lids, were turned directly inwards on the eye-balls. It was one of the most striking cases of trichiasis and entropium, which long neglect of proper surgical means could produce. For several years, to use her own language, she had spent her time in plucking out the lashes. So skilled had she become, that it seemed as if the greatest portion of the lashes had been lost. There was little or no disease of the lashes or hair bulbs, except what was incident to a thickening of the surrounding tissues and of the surface of the subjacent cartilage. Some vascularity of the margins of the corneæ was perceptible; but otherwise they were remarkably free from disease, a fact to be attributed to her remarkable skill in removing the lashes. It was impossible, however, for her to avoid breaking off some of them, and these rendered her eyes so irritable that she was unable to use them to any extent, and was reduced to a state of great nervous irritability and bad health. There was a strong tendency to keep her eyes closed, in order to diminish the irritation.

Six years before she presented herself to me, an unfortunate attempt had been made to correct the inversion of the right upper lid. The operation resulted in a considerable loss of substance of the whole thickness of the lid, followed by a decided increase of the trouble and inability to close the lids at their inner third.

For several years I had discontinued practicing the old operation of extirpating the hair-bulbs, having adopted the method of dissecting them up and transplanting them, by means of the removal of an oval flap, farther from the edge of the lids, the union of the wound drawing the hair bulbs away from their false position. I determined in this case to modify the operation, by seeking to obtain the withdrawal of the hair-bulbs from the margin of the lids, after dissecting them up, without cutting away a portion of the integuments. Previously I had tried various methods to avoid cutting away a portion of the skin, one of which was to pass two or three sutures through the skin and muscle immediately behind the hair-bulbs, and then drawing them, to fix them firmly to the forehead by means of adhesive plaster. The case operated upon in this way seemed to promise very well at first; but the sutures soon gave rise to so much inflammation and swelling of the lids, that their removal became necessary.

The modification of the operation described above consisted in the substitution of collodion for the extirpation of a portion of the skin of the lids, by which means retraction was successfully obtained without loss of substance. The operation was commenced by an incision along the margin of the lid, and the dissection was continued till the muscle and skin, together with the hair-bulbs, were separated from the cartilage for at least a quarter of an inch. The integument and cartilage were now separated as far as possible, and all redundant tissue on the outer surface of the latter was carefully shaved off; even a little which was dissected away with the hair-bulbs, was also removed. After the first step in the operation was completed, I applied the collodion, commencing a little above the brows, and gradually continued the application till within a short distance of the edge of the lid. The result in the left upper lid was admirable, making altogether the best I had ever seen in a case of this character. In the right upper lid, which had been previously operated upon, the result was quite good; but it was impossible to undo entirely the great injury inflicted upon the form of the cartilage by the previous operation. More difficulty was found in obtain-

ing a good result on the lower lids. This I have always found to be the case, where there is great change in the cartilage and conjunctiva.

This method of obtaining the retraction of the hair-bulbs is not applicable to all cases. In this case the eyes were prominent, and the upper lids large in their horizontal and vertical diameters; so that, when the lids were open, the upper edge of the cartilages did not pass far behind the rims of the orbits. Where the lids are small and the cartilages drawn for the greater part behind the rims of the orbits, this method is hardly applicable; and in a stronger degree it is contraindicated when the brows are very prominent. In children who have irritable skins, with a tendency to scrofulous eruptions, the collodion is liable to produce irritation, and may even necessitate its removal before the cure has been completed. In this case its renewed application would be impossible, and excision would become necessary.

ART. VIII.—REMOVAL, BY EVULSION, OF FIBROID TUMOR OF UTERUS, WITH VAGINAL ADHESIONS.

By T. MARION LETCHER, M. D., *Cross Keys, Ala.*

IN March, 1863, while on duty at General Hospital, Liberty, Va., I was requested by Dr. R. A. Sale, an old and successful practitioner of medicine in Bedford County, of that State, to see a patient then under his care, who was suffering from "uterine trouble" of formidable nature.

From my notes of the case, taken at that time, I draw the following history: The patient, a negro woman, previously healthy, stout, 45 years of age, had for eighteen months suffered almost incessantly from serious disturbance of the proper uterine functions. For last three months of this period, constant and copious sanguineous discharges escaped from the vagina, the patient at same time suffering much from what she described as "bearing-down pains."

Frequently styptic and anodyne injections had been ordered, with only temporary relief, until finally the symptoms becoming so urgent and entreaties of patient so earnest, the doctor resolved to make a digital examination, *per vaginam*, which examination detected a globular mass filling superior portion of vaginal canal. He was no

longer in doubt as to a sufficient cause for the persistent symptoms which had so long existed, but other and, as he considered, greater difficulties presented themselves. What was the nature of this mass and how was it to be disposed of, were questions which he very naturally entertained. He was inclined to the belief that it was a *polypus uteri*, but not entirely satisfied with this diagnosis, he called to his aid two other professional brethren, between whom and himself there was a difference of opinion.

At this juncture I was called to see the case, with the request that I should operate in case any surgical interference should be considered advisable. As doubt had been expressed as to whether the uterus was in its normal position, my first examination was directed to this organ through the abdominal parietes. Its outlines were readily traced *in situ*. The index finger of right hand was now passed into the vagina, but, at the distance of only an inch or two from vulva, was arrested by a large unyielding tumor which entirely occluded the vagina beyond. By patient trial, however, the finger was passed beside the tumor to a sufficient distance from the vulva to have encountered the cervix uteri, had it been possible; but, to my surprise and perplexity, the vagina posteriorly was as much occupied and distended, by an unyielding substance, as at the first point of resistance. The os and cervix uteri could not be detected. Indeed, the finger was so paralyzed by pressure that nothing of a satisfactory character was obtained by this procedure. Having at hand a small conical uterine speculum, I determined, if possible, to introduce it and thus bring to my aid the sense of vision, as well as that of touch. Placing the subject on her elbows and knees, I succeeded, by dint of persevering effort, in passing the instrument on until it was arrested by the vaginal wall posteriorly. Much force and manipulation were necessary to effect this part of the operation, which caused the patient not a little pain. After much time consumed in ranging the position of this instrument, whereby to examine every portion of surface beyond, I could easily trace, with the eye, the perfect continuity of structure between the posterior surface of the tumor and the *cul-de-sac* of the vagina; save at one single point where a small opening was visible, through which sanguineous fluid issued. This adventitious connecting medium (for such it seemed to be) presented a surface about equal in extent to that of the tumor itself, and completely enveloped the cervix uteri.

The only rational conclusion at which I could arrive, after this patient and careful examination, was this: that the body in the vagina was a fibroid tumor which, at some indefinite period, had been expelled from the uterus; that adhesions had afterwards sprung up between the posterior surface of this tumor and the posterior extremity of the vagina, which adhesions were thick and attached to the vaginal wall, external to the uterine neck; and that the small aperture in the body of the adhering material was the only outlet through which the catamenia and other uterine discharges had escaped. This was my diagnosis.

The excessive drain to the system, produced both by the menorrhagia and metrorrhagia, which had been kept up for several months, as well as by the material required to nourish this tumor, made it necessary that something should be speedily done to relieve the sufferer. It seemed self-evident that the only promise of permanent relief consisted in the removal, at once, of the tumor; and to effect this, the following suggested itself to my mind as the most feasible plan to be adopted: Break up the adhesions—draw the tumor without the vulva—cast a ligature around it and divide with the knife. Could such theory be reduced to practice, was a very natural and important enquiry.

The diagnosis and plan of operation were readily concurred in by three other medical gentlemen, in whose presence the examination had been made.

With the patient in the dorsal decubitus, I again passed my finger beyond the tumor, to the small opening already described, into which, by prolonged trial, I gradually insinuated the finger, and was soon much gratified to discover that the adhesions were slowly giving way to the gentle but constant force thus applied. This much gained, I had but little further difficulty in detaching the whole of the adhering mass from the vicinity of the cervix uteri. This body, together with the os and pedicle of the tumor, was now for the first time recognized. By no inconsiderable effort the tumor was drawn out of the vagina, and the pedicle found to be but little larger than the finger. The next step in the operation was to transfix the pedicle with a needle armed with a double ligature, which I was in the act of doing when it suddenly occured to me that possibly the pedicle could be stripped off from the tumor, as in the case of the vaginal surface. The union, however, was found to be much more firm than in the preceding instance. I determined, at all events, to

make the experiment, thinking that, in case of hæmorrhage, I could ligate the pedicle before much blood had been lost. By exercising patience, force and some dexterous manipulation, I soon held the tumor in my hand, smoothly detached from its pedicle by *evulsion*.

Not exceeding two ounces of blood was lost during the operation. The finger reïntroduced into the vagina, detected the external end of the pedicle at the os uteri, which soon retracted within the cavity of the uterus. An incision was made into the tumor, and the grating sound, peculiar to the division of fibrous tissue, elicited. It was unyielding and compact in structure, and weighed twelve ounces avoirdupois.

The patient had a successful recovery, and in two weeks from date of operation was attending to her accustomed duties.

Remarks.—The points of interest in this case are more than one, but I will direct special attention to only one, viz., the adhesions which connected the tumor with the vagina and which enveloped the uterine neck.

As the case presents some features unlike any similar ones which have come to my notice through the Journals or otherwise, I submit it to the profession, in the hope that it may not be wholly devoid of interest, at least as a matter of history.

Art. IX.—CASE of POISONING by PHOSPHORUS.

By Prof. S. M. Bemiss, *University La.*

MARY COURTIN, aged 45, widow, employed in a "cotton pickery," was admitted to ward 34, Charity Hospital, on the afternoon of March 2nd, of the present year. She was of moderate stature, but presented the appearance of a person who had experienced good health, and looked so youthful that doubt was thrown upon the statement of age given above. The patient's decubitus was dorsal, partly inclined to the side, with pillows so placed as to bend the head forward. It is altogether probable that this position was assumed because of the constant vomiting and the convenience it afforded for keeping the basin so situated upon the bed as to catch the matters ejected, without necessitating any movement. The changes from side to side were very frequent, but no different decubitus was observed during the continuance of the case. The surface of

the patient was cold and bedewed with a perceptible, though slight moisture; numerous petechiæ of a dull, livid hue were observed over the epigastrium, but not elsewhere. The eyes were dull and expressionless; countenance fixed and anxious; respirations slow; pulse 64, regular but very feeble and easily obliterated. The mental faculties were unaffected. Her only complaint was of intense thirst and incessant burning pain in the stomach. Upon approaching the patient's bed I called the attention of Mr. Giffen, my ward assistant, to a peculiar odor. This was strongly perceptible to both, yet neither was able to analyze it sufficiently well to apprehend a ready explanation. The odor was unmistakably manifest upon testing the substance vomited, by close approximation of the nose, and the exhaled breath was so strongly impregnated by it as to lead Mr. Giffen, after a short time, to affirm the presence of phosphorus, from a pungent impression upon the fauces, accompanied by nausea, analogous to the effects he experienced after inhaling the fumes of phosphorus matches. Upon inquiry, the patient stated that she had been upon a debauch for some ten days; that three days previously she had taken part of a box of "rat poison," but that it had produced no harmful effect; and that between 11 and 12 o'clock (of the day of her admission) she had swallowed the contents of a whole box of this poison, with intention to destroy her life. Her daughter, an intelligent child of 9 years, corroborated these assertions, and said her mother had "mixed the whole box of poison with a tumbler of water and drank it all." This was now half-past 4, probably five hours after the poison had been received. The patient was ordered ℈j sulphate zinc, to be taken immediately; magnesia ʒj in an ounce of gum water, repeated after every act of emesis; copious draughts of ice water and pellets of ice to be swallowed *ad libitum*. No other measures of treatment were instituted, and this course was continued until the death of the patient, which occurred about 7 o'clock, without being preceded by convulsions or other marked change of symptoms. No movement of the bowels had occurred nor voidance of urine. The substances vomited were fluid and of a yellowish-green color. Immediately after death I had the body placed in a dark room, and accompanied by Prof. Mallet, had every means employed to determine if any portion of the cadaver emitted luminosity, but none was observed. The patient had not, at time of death, the menstural flux, as in the case of the Polish lady who committed suicide by means of phosphorus, and from whose vagina Casper observed the appearance of luminosity. The

post-mortem examination was made by Mr. Giffen and Dr. Suchon, under direction of the Coroner, and City Physician—Dr. Nichols—and in presence of the writer.

There was nothing worthy of particular note in the external appearance of the cadaver. Attention was drawn to the expression of the countenance, as presenting the appearance of placidity which has been noted in one or more instances of death from this agent. I cannot positively say that I may not have witnessed as much freedom from that expression of suffering which the last agonies so often leave upon the face of the dead, but there certainly was a striklying composed and placid physiognomy. The *rigor mortis* was well marked. Upon opening the body the following observations were made: The stomach and intestinal tube were removed unopened, that they with their contents might be subjected to chemical examination. It may be well to observe that no part of the intestinal canal gave evidence, by external appearance at the time of the *post-mortem*, or by inspection of the inner coats made on the succeeding day, of any considerable degree of inflammation. The œsophagus presented no evidence of contact with any irritating agent, although the pharnyx was pretty deeply reddened. The course of the blood vessels over the intestinal tube was marked by strongly injected cord-like lines, but this may have been a *post-mortem* change. The liver was not appreciably altered in size, but presented a peculiar brick-red color, and a very unusual degree of friability, permitting the finger to enter its substance with slight resistance.

The spleen was soft and of dark color. The lungs showed old pleuritic adhesions, but were otherwise healthy. The heart was healthy; right side contained clots. The blood obtained from the heart and large vessels presented a peculiarly black treacle-like appearance, parting readily with its coloring matter, and staining the hands to an unusual degree. The brain was pretty strongly injected, and it may be somewhat softened, but not otherwise abnormal. The uterus was in the cavity of the sacrum, not gravid, although apparently of somewhat larger volume than usual. Bladder accidently omitted from examination. Microscopical observations not made. It was a very difficult point to decide, whether any, and if any, what portions of the cadaver gave evidence of the presence of phosphorus by still exhaling its odor. Mr. Giffen and myself were the only persons present who had had experience with the odor, as emanating from the patient, and with each of us its influence upon the sense of

smell was so persistent that we were doubtful of our ability to recognize a new impression. The opinion, however, was quite general to those present, that both the abdominal and cranial cavities emitted a phosphoric odor. Prof. Mallet conducted the chemical examination with his usual skill and careful attention to results. The following are his notes and give account of his procedure:

"The method employed was that of Mitscherlich, viz., careful distillation of the organic matter under examination, with a little water slightly acidulated with pure sulphuric acid, condensing the vapors found in a long glass tube bent twice at right angles, and well cooled by a supply of cold water circulating in an outer tube, the experiment being made in a dark room at night.

The first substance examined was the vomited matter which had been collected, greatly diluted by copious draughts of cold water, which had been administered, and containing evident traces of the magnesia which had also been used. This, as soon as active ebullition set in, began to produce a distinct, though pale, luminous ring in the condensing tube near the upper level of the cold water outside, which ring alternately disappeared and again became visible with a faint glow or puff of light, the phenomenon lasting for some ten minutes, or a quarter of an hour.

The stomach, including the substance of its walls, cut up into small pieces, and the very small quantity of greenish matter remaining in it as a part of the contents, was next submitted to experiment in the same way. It gave a much more decisive result; the luminous glow appearing at intervals of a few seconds for nearly half an hour, and for a time becoming almost continuous, and illuminating several inches in length of the tube.

The contents of the intestines, and a portion of the intestinal tube itself, taken from different parts of its length and cut into small pieces, were next examined, but no distinct evidence of the presence of unoxidized phosphorus could be obtained in this case.

A similar negative result attended the like experiment with a portion of the blood.

From the *liver*, however, in a crushed and disintegrated condition, quite distinct luminosity could be produced, though the glow was faint and did not last more than two or three minutes. This last result is perhaps that of most interest, as serving to indicate the passage of phosphorus in a still unoxidized state into the circulation, and its tendency, like that of so many other poisons, to accumulation in the liver."

There seem to be at least three different formulæ by which this phosphorus "Rat Exterminator" is compounded; two taken from the Boston Medical Journal, of Nov. 25th, 1858, are respectively as follows: Phosphorus, ʒiv.; flour, ℔s iij; honey, ℔s. ij; lard, ℔s. ij; venetian red, ʒi. The other, phosphorus, ʒiv; meal and sugar, aa ʒiv., with arsenic, venetian red and oil of anise-seed. The third is found in the last edition of the U. S. Dispensatory, and phosphorus forms about one-eighth part of the whole mass. Tests instituted by Mr. Laster, during the progress of the case, and the careful examination by Prof. Mallet prove that neither arsenic nor corrosive sublimate entered into the composition of the poison taken in this instance, consequently the second formula must be excluded. If the poison was compounded according to either of the other forms, the patient must have taken as much as 100 grains of phosphorus. Less than one grain has been known to occasion death in an adult, and the exceedingly small quantity contained on the ends of eight friction matches, amounting altogether to about 1-15th part of a grain, caused the death of a child two and one half years of age. The reader is referred to works on Medical Jurisprudence, especially Wharton and Stillé and Casper for details of cases referred to.

It is probably fortunate that a knowledge of the dangerous nature of this poison is not more widely diffused, since its utilization in so many branches of art, and its common employment as a vermicide, place it within the reach of almost every member of society. This very circumstance also, of its universal accessibility, must increase in some measure the liability to occurrence of both accidental and intentional poisoning by its means, and gives interest to all clinical and *post-mortem* observations made upon such cases.

Art. X.—CASE OF TRICHINA SPIRALIS:

By Edmond Souchon, M. D., *Lauréat et Interne des Hopitaux de Paris.*

TOWARDS last Christmas, we chanced to meet a remarkable case of trichina spiralis. While dissecting the muscles of the infra-hyoid region, for the lecture of anatomy, we were struck by a peculiar spotted appearance of the muscles, which Professor T. G.

Richardson (for whom we were prosecting) immediately pronounced to be that of a case of trichina spiralis. The other muscles of animal life were examined, and on every point where they were laid bare, either the arm, fore-arm, thigh or leg, etc., they presented that special and characteristic spotted appearance. It consisted in innumerable minute spots of the volume, form and color of ordinary yellow-brown sand; and looked as if the muscular tissue had been sanded by some dexterous hand. The spots were at some distance from one another, about a twentieth or a thirtieth of an inch, and existed on the surface and in the depth of the muscles. They were very apparent in every part, but more specially so where the muscular fibres were not lacerated, where the muscles were more red, either naturally or from the contact of the air, and where the muscles were thin, like the sterno- and thyro-hyoid muscles. The heart was the only striated muscular organ where the spots were not to be found.

The microscopical examination was made immediately, and it fully confirmed the diagnosis at sight of Dr. Richardson. The examination was made as follows: One of the spots was dug out of the muscular substance by the aid of two pins or needles, and when it was put on a slide of glass with a drop of water, covered with a thin glass and placed under a microscope, magnifying about 30 or 40 diameters, nothing could be seen but a dark oval spot, because the trichinæ are surrounded by, or imbedded in a calcareous matter, which cannot be traversed by the rays of light, and thus conceals them from view. But should dilute nitric acid be used, long enough and strong enough to destroy that calcareous matter, but no so as to destroy the animal itself, it will appear most beautifully coiled upon itself in the cell. Glycerine, or some other transparent and penetrating substance will answer the same purpose, but will take some time to permeate the calcareous matter. When pressing the cell between the two glasses, it will sometimes crack or split, and the animal will be seen out of it, and either coiled, curved or straightened. Sometimes, also, something resembling more or less a fissure or crack of the wall of the cell may be seen; whether it is really an opening, and the point of exit of the animal, or not, we will leave to conjecture.

Dr. Warren Stone, who in a long and extensive practice had never seen a case before, had some doubt about their existence in our country, and held it as a disputable point, or, to say the least, was skeptical about them; but he yielded to the physical proof, although he thought they were "mighty little things to look at." The microscope fully convinced him, however.

Portions of different muscles were put in a saturated solution of hyposulphite of soda, in the hope of preserving the color; but it proved to be an entire failure as regards the preservation of the color and the tissue itself. A strong solution of arsenic and common salt gave a much better result, and, in fact, a most satisfactory one, as it preserved both the color and the muscular tissue. Some were put in turpentine. The color, of course, did not keep, but the tissue did keep very well, and the spots show very well also on the white bottom formed by the discolored muscle. This last specimen can be seen any day at the University Medical College. The subject, when fresh, was seen by all the class and by several of our city practitioners.

Notwithstanding our renewed inquiries, it has been utterly impossible to find any clinical details about the case. All we could discover was, the patient, according to one of the students who had recognized him, had been in Dr. Hart's wards at the Charity Hospital. He died of a very severe pleuro-pneumonia, as was seen on opening the chest. Some tattooing on the anterior aspect of both of his fore-arms would lead to say that he was a sailor, and the type of his physiognomy and head, that he was a foreigner. These two last deductions are of some value, for if a sailor or a foreigner recently arrived, he may have brought the disease from abroad, and thus relieve us from the fear that the so-much-talked-of disease was spontaneously developed here.

We forbear to dwell any longer on the deductions to be drawn from this case, as the reader can do so as well as we can, if not better.

Art. XI. — CASE OF GUNSHOT WOUND OF KIDNEY — RECOVERY.

By R. J. Perry, M. D., *New Orleans.*

THE records of military surgery show that gunshot wounds of the kidney are almost always fatal, and being so considered, the unfortunate victim is too often left to his fate, without proper attention. The following case presents several points of unusual novelty and interest, and teaches the important lesson, that the surgeon should never abandon as hopeless any case of injury, however unpromising it may seem. Patients do occasionally recover from

wounds of the kidney, as well as from lumbar abscesses, caused by renal calculi, and should therefore be treated with proper care throughout.

CASE. Lieutenant A., 2nd Tenn. Infantry, C. S. A., of robust constitution, in perfect health and of abstemious habits, was wounded at the battle of Shiloh, on the 6th of April, 1862, by a minnie ball entering immediately below the heart and passing out through the upper portion of the left kidney. There was considerable hæmorrhage, causing excessive prostration. In this condition he was captured by the enemy and removed to Pittsburg Landing, on Tenn. river, several miles distant from the battle-field; where he remained for six days without any attention, not even the removal of his bloody clothing or dressing his wound. He was then placed upon a U. S. transport, conveyed to Louisville, Ky., and sent to hospital for treatment. During the month of July following, whilst his wounds were still discharging profusely, he was attacked with typhoid fever, and a large abscess formed in the lower part of the abdomen, about one inch to the left of the linea alba, which became a source of extreme annoyance and pain. The second week in August he was removed from Louisville to Camp Chase, Ohio. Several days subsequent to his transfer, very much enervated by reason of the prolonged and severe attack of fever, the abscess to which previous allusion has been made opened outwardly, and discharged an immense quantity of dark sanious fluid mixed with urine. This greatly alarmed him, and extreme mental anxiety, added to his nervous prostration, came near proving too much for the unfortunate victim; but all these difficulties were combatted by a good constitution and the inflexible determination of a veteran soldier, to such a happy degree that when an exchange of prisoners was effected, he was able to proceed to Vicksburg, Miss., where he was released about the first of October.

Immediately he commenced his journey homeward (Lynchburg, Va.), travelling during the day only and resting at night, suffering intensely from his wounds and the abscess which still continued to discharge an admixture of unhealthy pus and urine. At the expiration of two weeks he reached Knoxville, Tenn. (at which place I was then on duty), manifesting symptoms of very great nervous prostration. The day of his arrival in Knoxville, being called to see him at the residence of his sister, at 9 o'clock, A. M., I found him with a severe chill, which was followed by high febrile reaction. On examination, I found the anterior wound entirely closed and cica-

trized; the posterior wound and abscess very irritable, presenting no indications of a disposition to heal; and both discharging, though not profusely, a thin sanious fluid, mixed with urine. He complained of excruciating pains in the lumbar region, and passed but little urine through the natural channels. Secretions generally deranged. I ordered warm stimulating poultices to wound and abscess, and administered one grain of extract of hyoscyamus. Visiting him again at 4 o'clock, P. M., I found him restless, looking pale, anxious and greatly alarmed; pulse irritable and frequent. Administered anodyne to relieve pain. Saw him next morning at 9 o'clock, having rested comfortably during the night; still suffering from pains in lumbar region, but much more composed; pulse regular but frequent. Continued warm applications to wound and abscess, and anodynes to procure rest and sleep.

For several days subsequently he was annoyed with rigors simulating intermittent fever, which gradually subsided, leaving him much debilitated and troubled with night sweats. These were overcome by the use of aro. sulph. acid, tannin, etc., and sponging the entire body with stimulating lotions; at the same time directing generous diet, with the exhibition of iron, tinct. of bark, quinia, milk punch, etc. For some 18 days the discharge of urine and unhealthy pus continued, when the discharge of urine ceased entirely, and the pus became laudable. Simple lint and sweet oil dressings were substituted for the warm poultices, and the second week in November the wound and abscess were almost entirely healed, with but slight discharge. On December 15th, he resumed his journey to Lynchburg, and in a short time was restored to his duties in the army.

I met Lieut. A. in October, 1864, enjoying uninterrupted health.

ART. XII.—A CASE OF APHASIA WITH AUTOPSY.*

By S. M. BEMISS, M. D., *Prof. Theory and Practice of Medicine, University Louisiana.*

BRIDGET RILEY, Æt. 40, Irish, widow, was admitted to ward 34, Charity Hospital, on the 17th day of February, 1867. At the date of admission she was very much emaciated and had evidently been poorly cared for, as her person was covered with dirt and vermin. The patient was unable to communicate anything respecting her history or condition, except in response to questions so framed

* This case was made the subject of a clinical lecture at Charity Hospital, on the 18th of Feb.

that the answer would be simply "yes" or "no." These monosyllables seemed to constitute the entire vocabulary at her command, except in one instance hereafter mentioned, and except that she occasionally repeated words addressed to her. From this slender stock of language she selected her replies with evident intelligence. I satisfied myself of this fact by repeated examinations, and by putting the same interrogatory both directly and indirectly, so as to oblige her to change the monosyllable in giving correct answers. It was difficult to determine satisfactorily with regard to the integrity of the patient's mental faculties in their aggregate capacity. Efforts to answer any considerable number of questions without a period of rest, seemed to weary and confuse her mind, but under some circumstances she evinced by her replies, gestures and countenance, an amount of intelligence, perhaps not much below her normal standard. She had never been taught to read or write, and in all probability the amount of information she had acquired was very small. She had very well marked converging strabismus, which she affirmed had existed from childhood. One of the hospital attendants had seen her two years anterior to this date, and bears testimony to its existence at that time. There was not apparently any obstruction to the vocalization of the two words which she uttered. They were articulated distinctly and perfectly, though never in a loud tone. There was no difficulty in performing deglutition, nor any evidence of local paralysis; the tongue could be protruded readily and without lateral deviation. At time of admission she was not able to walk beyond one or two steps, and these were performed with evident difficulty and dragging of the feet, but not of one more than the other. There was no hemiplegia either of the upper or lower extremity. Ability to walk, or even to stand, was not retained longer than a few days after her admission. Whether this loss of power was due to defective nutrition and consequent debility, or to a general nervous paresis from cerebral disease, was not easy to determine. The functions of animal life were illy performed. Her bowels were stubbornly inactive, and required the exhibition of stimulating cathartics to effect any movement whatever. If several days were permitted to pass without defecation, her tongue would become thickly covered with a shaggy coat, and smeared over with viscid ropy mucus. Under such circumstances the mental hebetude was always increased, and the loss of language or of ability to comprehend was at times so complete that our efforts to extract any form of reply were entire failures.

On the other hand it generally occurred that temporary improvement, both of her mental and physical condition, followed healthy movements of the bowels. On one of my morning visits she surprised me by saying, in tones sufficientlyloud and distinct to be heard and understood by the students near her bed, "morling; better,—morling." This was the most successful effort at a connected sentence ever made in my presence, and the testimony of the ward attendants is of similar tenor. There was no derangement of the functions of the kidneys, nor any difficulty in either voiding or controlling discharge of urine. Death took place on the 21st day of March. For some days previously to this event it was a matter of very great difficulty to get her to take nourishment, and it seemed extremely probable that deficient nutrition, superadded to the cerebral disease, was its immediate determining cause.

The *post-mortem* was made on the morning of the 22nd of March, by Dr. Souchon, Messrs. Giffen, McNeil and the writer.

The external surface of the brain was entirely healthy. In removing the substance of the left hemisphere by successive thin sections, a tumor was disclosed, situated principally in the middle lobe and approaching to within one-half of an inch of its inferior surface, and extending into the anterior lobe. The tumor was in size something larger than a pigeon's egg and not unlike it in form. The long diameter was parallel to the base of ventricle, and the larger end pointed posteriorly. The line of the fissure of Sylvius divided the tumor into two unequal parts, so that scarely one-third part extended into the anterior lobe. It was external to the optic commissure, the pituitary body, tuber cinereum andcorpora albicantia; but encroached considerably upon the optic tract and crus cerebri, and occupied the anterior portion of the corpusstriatum. It extended to within $\frac{1}{16}$ of an inch of the lining membrane of the anterior corner of lateral ventricle, which was thickened and opaque. The consistence of the tumor and microscopical appearances were those of fibroid growths. No other evidences of disease were found in the encephalon. From an improper understanding of instructions, the body was interred without further examination. There was, however, no cause to suspect disease of any organ but the brain.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

ART. I. — *Inguinal Tumors.*

THE following are some considerations of M. Nélaton on a patient just admitted to hospital, but whose stay has been long enough to authorize a diagnosis of his curious and rare malady.

He is a drayman, about thirty-three years old, born in Normandy, of robust constitution, and apparently enjoying a perfect general health. This man carries, right and left, an inguinal tumor, appearing below the crural arch. The two tumors began their development two years ago; they are symmetrical; the skin covering them is intact; they yield to pressure, but not like a hernia; they disappear incompletely under pressure of the fingers, but do not withdraw into the adjoining parts; and when a certain pressure has caused their partial disappearance, the presence of small grains is noticed at the bottom.

M. Nélaton observed the first case of this odd disease ten or twelve years ago. The question in his mind then was the existence of venous tumors or of lipoma. Having inclined rather to the latter opinion, he operated. Scarcely was this commenced, when he encountered the discharge of a white liquid, opaque, resembling milk and inexhaustible. The operation was difficult and painful. The operator, tired of the discharge of this fluid mixed with blood, resorted to pledgets of lint saturated with perchloride of iron, and pressure. The next day there was swelling of the adjoining parts, resembling at once phlegmon and angeioleucitis. A few days later the patient succumbed.

The morbid portion of the tumor remaining was composed, not of varicose lymphatic vessels, a well-known malady, but of a dilatation of the vessels which form the woof of the glanglia; and, in illustration, M. Nélaton exhibited several photographs representing the anatomy of this ganglionic disease.

In the patient now under our notice, they found behind the scrotum, towards the perineal raphe, a tumefaction at the bottom of which they still perceived the presence of little grains, resembling in size those found at the bottom of the inguinal tumors. M. Nélaton questioned if these were small lymphatic ganglia, and recollected that none of them had been met along the perineal raphe. This fact could be the starting point of new researches. Finally the same patient presents, on the left side of the neck, a painless ganglionic swelling, apparently of the same nature.

We have said above that this man presented the appearance of health. However, for the last year he has had spells of bilious vomiting, which lately have become pretty frequent.

M. Nélaton is of opinion that, in such a case, treatment should be exclusively hygienic, and that, above all, operating is not to be thought of. He proposes to name this undescribed malady *Varicose Lymphatic Angiopathy.—Jour. de Méd. et de Chir. Prat.* (Paris,) Feb., 1867.

Art. II.—*Nitrate of Lead for Onyxis.*

ONYXIS, according to M. Moerlcosc, becomes sometimes, in scrofulous infants, an excessively rebellious affection, which may be prolonged several months, and which even in spite of the use of various topical applications, is sometimes aggravated to the point of requiring amputation of the finger, or involving the death of the little sufferer. For this evil our *confrère* praises the nitrate of lead, with which he sprinkles the ulcers for several days. No case, says M. Moerloosc, however rebellious hitherto, has resisted this application.

Here is a case which shows the good effects of this application on a boy nine years old: phalanx of finger swollen, globulous, double in size; ungual surface covered with fleshy granulations, soft, which no local remedy succeeded in keeping down, and studded with *débris* of horny tissue; suppuration profuse, fetid, etc. This affection was of seven months standing, and had been vainly treated by a physician of the city. Just eight days after his entrance into the hospital I saw him again, and found the finger almost well. There remained only one ulcerous point, as large as a pin's head.—*Gazette Médicale de Paris*, Nov. 3d, 1866.

Art. III.—*Fractures of the Patella, Treated by a Ring.* By Paul F. Eve, M. D.

ANOTHER benefaction has been given to humanity by the profession, in the treatment of a very difficult, though fortunately not very frequent, accident. The name of Dr. W. A. Gibson of St. Louis, U. S., will hereafter ever be honorably associated with the management of a fractured patella; for by the suggestion of a *ring*, he has not only simplified, but we think, probably perfected, a method for treating these cases, whether the bony solution be transverse, oblique, longitudinal. stellate, or by comminution. A moment's reflection will convince medical men that, of all means proposed to retain the fragments of a fractured patella in contact, and thus promote bony union, instead of the ligamentous one usually obtained in practice, the ring must have great and decided advantage, and is so simple in its application, that the thought almost involuntarily arises, Why was it not suggested sooner? And this is the more surprising, when we consider the many various methods employed to keep the fractured parts in contact. The two plates of metal shaped like a horse-shoe, to fix and bring together the fragments, invented by the late Mr. Lonsdale; the plates with two sharp hooks, of M. Malgaigne, recently deceased; and the practice of Mr. J. Wood, of King's College Hospital, London, consisting of strappings encircling the upper and lower margins of the broken bones, and then crossing each other at the sides of the point to be fastened to hooks attached to a wide splint in the popliteal region, would all seem suggestive of the value of a ring under these circumstances.

In the future treatment of fractures of the bone under considera-

tion, a revolution may be predicted, and the prognosis, change in the result from ligamentous to bony union. For, as Mr. Carsten Holthouse says, in "Holmes' Surgery," the great rareness of bony union in transverse fractures of the patella is owing simply to the difficulty of keeping the fragments in sufficiently close apposition; *when this is accomplished*, bony union occurs as in other fractures.

The idea so long entertained in treating fractures of the patella by position, so as to relax the quadriceps femoris muscle, we see by the October No., 1866, of the London *Medical Times and Gazette*, is now being abandoned, and Mr. Paget, at St. Bartholomew's Hospital, has been treating his cases for the past three years in the *horizontal position*. When, too, we reflect that only one (the rectus femoris) of these four muscles arises from the pelvis, while the others, the crureus and the two vasti, have their attachments to the shaft of the femur itself, we must be convinced how little position can effect in these cases. The fact is that after a day or two, the muscles relax spontaneously and the easiest and most unrestrained position of the limb has been found not only the most agreeable to the patient, but as good in its results.

We now give the case furnishing the occasion for introducing the ring in the treatment of fractured patella, followed by the two in which it has been employed in this city. Dr. Gibson published this in the September number of the *St. Louis Medical and Surgical Journal*. The patient, Mr. James Ferree, aged 35 years, had been the victim of rheumatism, and having so far recovered that he could use crutches, in attempting to get into a buggy, felt a sudden shock, as if some one had hit him with a stone on the knee, and could scarcely be convinced that the fracture was caused by muscular contraction.

"The patella of the left knee was fractured transversely through its middle, the fragments separating about one inch. I did not admire any of the modes of treatment for the fracture which I had ever seen recommended or used, and while hesitating as to what plan I would adopt, it occurred to me that a ring would answer the purpose. I therefore took a measurement of the sound patella, and had a ring made of iron (allowing for padding), which I padded well with cotton wadding cut in strips and wrapped around the ring, over which I applied a bandage. I then placed a well-padded splint twenty-four inches long to the posterior aspect of the leg and thigh, which I secured by a few turns of bandage at the lower and upper ends, the bandage being loose so as not to interfere with the circulation. I next brought the two fragments of bone into apposition, and placed the ring around the patella, and tied the strips of bandage over the splint, thus securely holding the ring in its place, and keeping the broken bone always in complete apposition, thereby giving the greatest possible chance for a bony union. At the expiration of thirty days, I removed the ring and commenced passive motion of the limb, and today (June 15th), he has very good use of the limb. During the time this case was under treatment, I invited Drs. E. H. Gregory, J. J. McDowell, E. A. Clark, E. S. Frazier, and other physicians, to examine the appliance, and they all expressed the opinion that it was *just the thing* for a fractured patella. The advantages of the ring in the treatment of this troublesome fracture are so apparent, that it seems to me hardly necessary to point them out,

The appliance did not give the patient the least pain, and there was no interruption of the circulation by the bandages. It was impossible, in this case, for the patella to escape from the ring, but possibly in some cases, as of women, when there is a good deal of adipose tissue, and but little prominence of the patella, it may not be so easy to apply the ring; but I am persuaded that it will give entire satisfaction in all cases. I claim, by the application of the ring, to have reduced one of the ugliest fractures of the human frame to one of the simplest for treatment.

"I report this case for the information of the profession, feeling confident, from the perfect success of this case, that the ring has never been used before, or we certainly would have been familiar with its use."

Case 2d.—On Sunday, the 28th day of last October, I was called to Lawson Marshall, a colored young man, who, by a fall on a rock, in a state of inebriation, had fractured the left patella, directly transverse, in about the middle of the bone. There existed a separation of some two or more inches between the fragments. He had apparently a good constitution, and was in excellent health.

The usual carved and straight splint was applied to the posterior surface of the limb after reduction of the fracture, as recommended by Sir Astley Cooper, viz., by a broad belt around the lower part of the thigh, just above the upper fragment, then by a long bandage passing down from it at right angles on one side, under the sole of the foot, from which extension was made by ascending the other side parallel to the leg, and securing it to the same circular belt.

Within two weeks after this, the September number of the *St. Louis Journal* was received, the case of Dr. Gibson noticed, and his practice at once adopted. The ring was worn five weeks, the latter three without the posterior splint. At first it was padded, then applied directly to the surface. It is made of brass, softer than iron. It has answered every purpose in the treatment, and numerous witnesses, besides our class, saw this case, and all bear testimony to the great value of this method. I consider it the perfection (humanly speaking) in the treatment of fractures of this bone. One suggestion, however, is added, that the ring should be worn for three or four months, the patient being permitted to go about—mine refused to wear it longer than five weeks, making the whole treatment about seven weeks. The ring too might be slightly curved at the sides, to which are secured the strips of bandlets to fasten it under the knee.

Case 3d.—By a railway accident, during the night of the 18th of December, Mr. G., aged 29 years, and of fair constitution, received an extensive contusion over the right lower extremity, falling, as he thinks, with his knee against the stove of the car, which caused a transverse fracture of the patella. Such was the injury to the soft parts, that twelve days were required of active treatment to subdue the resulting inflammation, and more than thirty after it the discoloration in the integument of the limb is quite apparent. In the mean time, the family physician, Dr. Thomas Menees, the President of the Nashville Medical Society, had consulted me in regard to the best management of the case, and when the ring, as advised by Dr. Gibson, was proposed, he at once approved of it, and had one made and applied. It has now been worn uninterruptedly three weeks, keeping

the fragments in close apposition, and there exists every prospect of a bony union.

The patient was up today, the 21st of January, in his chair. With nothing but the ring on, he stood upright, of course not on the injured limb, and commenced passive motions in the knee-joint. For security he still wears a splint of binder's board when out of bed.

Dr. Menees is fully satisfied that this simple treatment fulfills every indication, and is the best yet devised for a broken patella.

Feby. 1*st.*— This patient is out on the street, with a cane, ready to resume business. With the ring he not only walks well, but can flex the leg nearly at a right angle without inconvenience.—*Nashville Jour. of Medicine and Surgery, Feb.*, 1867.

ART. IV.—*Present Position of Aural Surgery.*

DR. ROOSA remarked, that the present method of examining the membrana tympani was a most decided improvement upon the somewhat familiar routine of the old practitioners. This revolution began with Prof. Troltsch's suggestion of the concave mirror, of six-inch focus and having a small central aperture for the convenience of the observer. Prof. T. combined with this the tubular speculum. There were those who even believed that the simple mirror would supersede Desormeaux's endoscope.

Another grand advance had been made in our appreciation of the real objects of interest, which present themselves for inspection. Formerly only the handle of the malleus and the periphery of the drum challenged attention. Now the triangular light spot, which effect, as first shown by Politzer, is due to the traction of the handle of the malleus upon the drum in an inward direction, was taking its proper rank in professional estimation. For the benefit of those who had given but little attention to aural science, he would pass around the illustrations of Dr. Politzer's work, for here this spot was prominently brought forward in the different phases of health and disease. He would also accompany those plates with certain photographic illustrations, obtained from Munich, in which the ossicula auditus and other parts of the ear were very well represented. The last number of Guy's Hospital Reports, as may be seen by a reference to the shelves of the Association, likewise exhibits perforation of the drum, although he objected to the term *normal* drum, as applied to one taken from the dead subject.

Then, again, the eustachian catheter, notwithstanding the assertion that Mr. Turnbull, in London, had killed two patients by its use, was steadily growing in the confidence of surgeons. *Apropos* of the danger to be encountered, he would answer with the experience of Continental and American surgeons, by whom this most excellent means of diagnosis was highly lauded. The only objection of value, and this a probable accident merely, was a rupture of the mucous membrane, which might produce an emphysema transient in character. Nothing alarming, so far, had occurred in his hands to induce him to abandon the instrument, unless a case of fainting

might be regarded as an exception. Certain it is that the catheterism of the eustachian tube is an operation frequently performed in the Eye and Ear Infirmary, and in private practice, without any feeling of dread. The value of the procedure is demonstrable in chronic catarrhal inflammation of the middle ear (the chronic myringitis of Sir William Wilde), but is not applicable to the treatment of a very rare affection, to wit, the stricture of the tube.

Bougies, for the stricture above alluded to, were now likewise beneficially used. In this mode of treatment, Dr. Francis Simrock, of this city, had a large experience.

With regard to Politzer's method of inflation, too much cannot be said. The late Mr. Toynbee proved that the eustachian tube was closed, except during the action of certain muscles concerned in deglutition; Politzer practicalized the discovery by requiring the patient to swallow, while the surgeon forced air through a tube, placed in one nostril while the other was closed. In this way, the rush of air through a ruptured membrane was readily appreciated, and at once became a valuable diagnostic sign. If during the experiment the membrana tympani chanced to be ruptured, there need be no apprehensions, since the wound thus caused very readily healed. Dr. R. spoke warmly of this method in those subacute cases, of which the following was a type, and which he would relate as exhibiting its success: A boy, of scrofulous constitution, exposed to the action of cold, "gets," in common parlance, "his ears stopped up." This deafness promising to be permanent, he is treated according to the best intelligence of the period, by cauterization of the throat and removal of the tonsils, but without benefit. His physician, as soon as Politzer's method was promulgated, sent for the boy, applied the principle, and was rewarded by the fact that the patient heard an ordinary conversation in five minutes. This patient was again attacked a number of months after, and again in like manner relieved.

Politzer's method, however, was not valuable in chronic peripheral thickening, as shown by change in form of the light spot, etc. Its good effect was chiefly manifest in the removal of mucous accumulations which might take on structural changes. In perforations Politzer's apparatus had been made available, in thoroughly cleansing the canal established as a result of inflammation. This was accomplished by filling the affected ear with warm water, afterwards stuffing the meatus with raw cotton. The tube, cavity of tympanum, and external meatus, were thus thoroughly washed out.

The nebulizer was now used in the therapeutics of aural diseases. Dr. Bishop's apparatus for nebulizing the mouth of the eustachian tube very often sends fluid instead of spray, but this freak sometimes being of advantage could hardly be urged as an objection. For the injection of iodine he had found Buttle's inhaler a very useful addition to Politzer's apparatus. Dr. R. alluded to and exhibited a few other appliances, upon the claims of which he descanted at some length.

Artificial membranæ tympani were now found more generally applicable than before supposed. Mr. Toynbee's disc of rubber, being liable to separate from its attachment and act as a foreign body in the ear, has been modified by a German, who has ended off the little wire with a spiral arrangement. The disc is secured by one or

two of these closely fitting coils, in the same manner that a cork is by the cork-screw. In one case in Dr. R.'s experience the hearing distance was prolonged, during the use of these discs, from one or two inches to two feet, which was certainly a very comfortable gain to the patient.

Then, again, the otoscope, for listening to the passing of air into the middle ear, is a refinement in our means of diagnosis unknown to our predecessors. We have now also better defined ideas regarding the aftergrowths in the ear. What Mr. Toynbee was pleased to call exostoses of arthritic or syphilitic origin, are now accepted as being due to a primary periostitis. We expect, therefore, to prevent their formation. As an earnest, indeed, of the benefits to be derived from the future cultivation of this inviting field of inquiry, it is observed that aural polypi, which are now regarded as exuberant granulations merely, are much less frequently met with than they were ten years ago.

The change in nomenclature points out our more exact knowledge of aural diseases, since such terms as otorrhœa, myringitis, etc., which only mislead the student, are falling into disuse. We now know that the ceruminous secretions and the inflammation of the middle ear are independent of each other.

The *literature* of the subject is now no longer meagre; publications of high authority are readily attainable in London, Paris, Vienna, Munich and New York. In addition to these facilities, we have a German quarterly devoted to the consideration of the topic. In fact, careful, earnest students are pursuing the branch with enthusiasm, and have already been rewarded by the most brilliant returns. For the matter of that, statistics show that, exclusive of the chronic cases inherited by us from a previous generation, we are not more unsuccessful in our therapeutics here than in other parts of the body.—*Med. Record* (N. Y.), Feb. 1, 1867.

ART. V.—*Cases of Amputation of the Cervix Uteri.* By WILLIAM WARREN GREENE, M. D., Professor of Surgery in Berkshire Medical College, and in the Medical School of Maine.

CASE I.—Mrs. S., of Sweden, Me., aged 35, the mother of three children, consulted me in the fall of 1855 with regard to pain through the pelvis, sometimes of a dull, often of a lancinating character. She had more or less sense of "dragging and weakness," and quite an abundant leucorrhœal discharge, sometimes tinged with blood. Menstrual discharge profuse. Her appetite was impaired, digestion feeble; she slept badly, and of late had been losing flesh and strength. A vaginal examination revealed hypertrophy of the lips of the os uteri, which were hard, nodulated and covered, as was also the lower portion of the cervical canal, with warty vegetations varying in size from a small shot to that of a bean. No ulceration, no tenderness. The upper portion of the cervix seemed to the touch healthy, as did the body of the organ as examined by finger and sound. I was in doubt whether I had here a case of genuine scir-

rhus, or of epitheloma. But believing that if it were the first, an operation would afford temporary relief and postpone the fatal termination, and if it were the latter a cure would in all probability be effected, while if left to itself it would run the course of malignant disease, I unhesitatingly advised amputation of the cervix After a few days' consideration she consented to the operation, which, with the assistance of the late Dr. Blake, of Bridgeton, and Mr. Barker, medical student, I performed in the following manner:

The patient, being etherized, was placed in the ordinary position for lithotomy. I then seized the diseased mass with a strong pair of Museux's forceps, and gave them into the hands of an assistant, with directions to hold the organ firmly and steadily, and at the same time to make gentle traction downwards. I then carried the chain of the *écraseur* around the cervix above the nodulated portion and tightened it. So small was the healthy surface that, as the chain grew tense under the successive revolutions of the screw, the tissues above were dragged into its grasp to such an extent that I feared, if I persisted with this instrument, I might open the peritoneal cavity. Therefore after thoroughly compressing the parts without dividing, I removed the *écraseur*, and dragging the mass down into view, made the section with a strong, curved, probed-pointed bistoury. This left a smooth stump, the hæmorrhage from which was but slight, and was readily controled by Monsel's solution.

There was very little shock following the operation. Immediately after consciousness returned, she got half a grain of morphia, which, in smaller doses, was repeated *pro re natâ*. She was kept quietly in bed for ten days, and had a bland diet. The bowels were moved the fourth day after excision. On the eleventh day, she sat up for half an hour without discomfort. In three weeks the stump was smoothly healed, and in two months after she came to my office, having gained in flesh and strength, and declaring herself entirely free from her "old troubles." Menstruation regular in time and quantity. Three years afterwards she was well. Since that time I have not heard from her.

Case II.— In October, 1865, I was called by Dr. O. E. Brewster, to see Mrs. ——, of this place, aged 55. She had been ill for about nine months, and complained of a general failure of strength, a capricious appetite and irritable stomach, constipated bowels, "strange sensations" in the head, palpitation, wakefulness, and had lost much flesh; was too weak to exercise, and much of the time kept her bed. She had been treated for eight months by homœopaths for "liver complaint" without avail, when she consulted Dr. Brewster. Under his management, the various functional derangements were readily controlled for the time being, but would recur without any apparent cause; and although he had put her upon a decided tonic course of treatment she did not respond to it.

Upon a careful interrogation of the different organs no evidence of organic disease was found, and by a rigid process of exclusion we were forced to believe that her sufferings were the result of uterine irritation *reflected* to the various organs whose functions were disturbed. But to such a suspicion the patient objected that she did not suffer and never had suffered any pelvic pain or distress of any kind, or leucorrhœa. But although an exceptional case, I had seen

such before, and urged an examination, to which she consented. The cervix uteri was considerably elongated, the lips hypertrophied to quite three times their natural size, very hard to the touch, but smooth; everted very much, and their inner surfaces the seat of what is often described as "dry ulceration." No pain or tenderness on pressure. The body of the organ appeared healthy.

I suggested a thorough trial of iodine to the parts, although having but little faith in removing the disease by anything except a radical operation. Dr. Brewster used this remedy faithfully for several weeks, but without producing any appreciable change, either local or general, and I advised excision, which was performed. The patient, previously etherized, being placed in the lithotomy position, I seized the mass with Museux's forceps and dragged it into view, and while Dr. B. held it thus firmly, I, with a bistoury similar to the one used in the first case, divided the neck just below the reflection of the vaginal mucous membrane from its surface. The hæmorrhage was inconsiderable, and was readily checked by the persulphate of iron. There was no shock following the operation. From this time she began to convalesce. In three weeks she was able to walk about the house, slept and ate well. The stump was quite tardy in healing, but at the end of eight weeks was completely cicatrized, and she continues a strong, healthy woman today. Dr. Paddock examined the specimen under the microscope, and pronounced it epithelioma.

CASE III.—In the spring of 1862, I was called to see Mrs. ——, aged 34, in consultation with Dr. Wheeler, of N. Becket. She had been a great sufferer for years from inflammation and ulceration of the cervix uteri, from which she had been for several months confined to her bed. There was also some endo-metritis, but the cervicitis was evidently the primary trouble. A vaginal examination revealed hypertrophy of the neck, both in its axis and diameter; the os dilated, and cervical canal so expanded, as to readily admit the forefinger to the os internum. The parts were very tender to the touch. There was profuse leucorrhœal discharge, which was seen through the speculum to come both from the external and internal surfaces of the cervix (that from the internal being clear and very tenacious), both of which surfaces were in places ulcerated or abraded. She suffered more or less of pain and the various reflex phenomena which almost always present themselves in one form or another in such cases, but the symptom more prominent than all others was an intolerable, uncontrollable itching of the pudenda and inner and upper portion of the thighs. There was no eruption or any sign of disease of the skin whatever, but so severe was the irritation that she was unable to get any rest except by the aid of large doses of morphia, which she had become habituated to taking. Under the influence of thorough local depletion, iodine, glycero-tannin, &c., she was soon on her feet again. The ulceration healed, and the lips of the uterus diminished in thickness, but the elongation remained—two and a half inches—and the expanded condition of the cervical canal, from which a little tenacious mucus was always hanging. It admitted the finger, and fitted it like a glove. Still, also, in a greater or less degree, the itching persisted, varying very much at different times; under the application of leeches or a saturated glycerole of iodine almost entirely disappearing, to re-appear when the effect of the treatment had

passed away, and to be aggravated by any cause which produced congestion of the organ.

Thus the case went on until January, 1866. She was now in excellent condition, with the exception of this one symptom. Having exhausted all resources at my command, both so far as treatment of the uterus was concerned and appliances to the external parts as well, and being convinced that the external irritation was purely a reflex matter, and that the interstitial changes in the cervix were such that any topical medication was powerless to restore it to its normal condition, I advised its removal, to which she readily assented. Accordingly, with the assistance of Dr. Smith, of this place, I amputated the organ, the operation being conducted in the same manner as in the preceding ones, except that here I used the *écraseur*, which divided the tissues, leaving a beautiful, smooth stump, with no hæmorrhage. She was kept in bed for ten days, on a light diet. But very little anodyne was required. The bowels were moved on the fifth day. In three weeks the stump was entirely healed; *no itching* since the operation, and she is today in excellont health, and menstruates regularly.

The above is the sum-total of my own experience in this operation —one which I believe to be of great value in *properly selected* cases. Of course, these are comparatively rare. I was called a few weeks ago to see a lady who was almost moribund with "cauliflower excrescence." The vagina was filled with the mass, but on carefully explorlng the parts I was enabled to carry the finger by it and reach the cervix, from the lower portion of which this painful, bleeding mass sprouted. The upper portion seemed healthy, and I have no doubt if amputation had been practised two months before she would have been saved. She was, however, too much exhausted by pain and hæmorrhage to allow of any operative procedure, and she died in three days.—*Boston Med. and Surg. Journal, Feb.* 21*st*, 1867.

Medical Pathology and Practical Medicine.

Art. VI.—*General Ganglionic Hypertrophy.*

THE pathological condition indicated by this title is not new; but it has never been described, and should not be confounded with the ganglionic engorgement peculiar to the scrofulous and to young persons of a lymphatic temperament. M. Nélaton saw for the first time a case of this kind, in 1850, at the Saint Louis Hospital. The age of the subject, the multiplicity of the tumors which he presented, disseminated through various regions, and the difficulty of accounting for their development, struck the observant and inquiring mind of this great surgeon, and prompted him to study more fully a disease which had not been described. Since this period, M. Nélaton has observed a number of similar cases, and if he failed to complete the study of this ganglionic hypertrophy, he has at least acquired some ideas relative to it, which he published together with

the history of a man aged forty-nine years, and laboring under this affliction. This case was one of hypertrophy of all the lymphatic ganglia.

It is difficult to determine the causes of this affliction. Many healthy subjects have presented this phenomenon and succumbed to its consequences. Many again have been similarly attacked subsequently to some serious malady—as typhoid fever, for instance. Three or four instances of the kind have been known to succeed to attacks of persistent malarious fevers.

In the case now reported, this hypertrophy was complicated with intermittent fever and mucous diarrhœa, which persisted for some time. The occupation of the patient was of a sedentary character, his residence unhealthy, and his diet not very nutritious. Four years previously he had been perfectly healthy, when, without any assignable cause, a tumor of an ovoid form and movable appeared on the neck, in the vicinity of the left parotid gland. This was soon followed by other tumors in the same situation, and below the clavicle. Subsequently the glands in the axillæ and groins became hypertrophied to an extraordinary degree.

Generally speaking these tumors are indolent, not exciting inflammation in *the integument, which can be moved over them.* They are distinguishable from scrofulous enlargement of the glands from the fact that they appear simultaneously, or in quick succession, in various and distant regions, never suppurate, and show no inflammatory disposition. The prognosis is also very different, as nearly all the subjects thus attacked have died; some from compression of the trachea (which will in all probability be the termination of this case, as laryngeal respiration is already very much impeded); others from various complications, infiltrations, œdema of the extremities, effusion into serous cavities, etc; a few from progressive inanition alone. Such is the experience of M. Nélaton. M. Trousseau, to whom this great surgeon imparted his observations, has also met with a large number of such cases.

Practically what can be done to obviate this pathological condition? M. Nélaton, it must be added, has derived no benefit from preparations of iodine or iodides for internal and external use. Vapor baths, raw meat, the most generous diet, have proved equally unsuccessful. Fowler's solution only has he found beneficial and even successful in one case, administered in doses of 2, 4, 6, 8, or 10 drops, without going beyond ten drops. This disease, however, is so fatal that it is permitted to be bold and to increase the dose of the arsenical solution, which is being done in the case mentioned. Should it terminate successfully, we shall make it known.—*Jour. de Méd. et de Chir. Prat.*, Dec., 1866.

ART. VII.—*Treatment of Diphtheria by Ice.*

THE treatment of diphtheria by ice, first employed by Hufeland, afterwards tried by M. Grand-Boulogne, has been the object of new experiments by M. Bleynic, father. He has made a series of observations, from which may be gathered the advantages of this

treatment. M. Bleynie gives ice constantly in small bits, administered successively as fast as they melt in the mouth. At the same time he prescribes syrup of perchloride of iron, 25 to 40 grammes a day in three or four portions; the chlorate of potassa, 4 grammes in a draught, 1 tablespoonful every hour or two; and finally wine in variable quantity, as stimulant and tonic. This medication is complex, and it appears difficult at first to determine how much, in the effects produced, is attributable to the ice. But M. Francis Bleynie observes that the use of the perchloride of iron, chlorate of potassa and wine has never given results so satisfactory as when ice was concurrently employed; and, on the other hand, the administration of ice alone has sufficed in three cases for a recovery. "Whatever be the explanation proposed for the action of this remedy," he adds, "we cannot fail to recognize its efficacy. The ice has at first a local action; it causes the false membranes to disappear, and prevents their reproduction. Has it a general action? M. Grand-Boulogne is disposed to think so. We cannot come to any conclusion from the cases observed by us, the malady always having been treated until the false membranes could be reached by the freezing water.

"If the ice is without action upon the diphtheritic affection itself, it counteracts at least the imminent danger, which is the principal thing, and gives to the other remedies, such as stimulants and tonics, time to act."—*Gazette Médicale de Paris*, Dec. 1, 1866.

Art. VIII.—*Change of Type in Disease.* Prof. S. H. Dickson.

I AM one of those who believe and maintain that great and decided changes have taken place during the last half century in the general type of diseases, both incidental and special, or in the condition of the human constitution, or, most probably, in both. The sthenic, formerly paramount, has progressively yielded to the asthenic type. Not that either ever prevailed to the exclusion of the other; our predecessors recognized both, but wrote and acted on the assumed general predominence of the inflammatory over the adynamic, a state of things which we find in a certain sense and degree modified, if not reversed. If my observation and experience, enduring through the above specified period, have clearly satisfied me of any one point in the Natural History of Diseases, it is this.

We are often tauntingly called upon by those doubters of the wisdom and common sense of our ancestors, who differ from us and deny that any such change has taken place, to fix the date of its occurrence. It began to be manifested certainly more than forty years ago. The time of invasion of typhoid fever has been ascertained, when, in this country at least, it forced itself upon the attention of physicians, and substituted progressively, and rather gradually than rapidly, the adynamic for the inflammatory character of our pyrectic affections, mingling with, rather than abruptly displacing, where they had been prominent or exclusive, our malarial fevers.

As a student of medicine at that period, I will avow that I was not unobservant, as my earliest writings will show, of the necessity

which had come upon us, of modifying the energy of the antiphlogistic or depletory practice then in vogue. My most intimate professional friend, educated under Rush, rarely omitted the use of the lancet in the treatment of the phlegmasiæ or other febrile disorders. Comparing the result of my more forbearing course with his, I became fully persuaded, that even if I could not boast of fewer deaths among my patients, they suffered somewhat less in constitution and recovered more readily.

All who are old enough to recall the history of that bygone time, will remember that constipation was far more uniformly an annoying element in fever than it is now. Cathartics were invariably administered among the first remedies, and it was often difficult to obtain their proper effect. At present, and indeed for a full generation looking back, a very different condition prevails. To the question, when this change manifested itself, two replies have been given. Many of my medical associates are unwilling to go beyond the invasion of cholera, which, coming among us in 1832, left, they affirm, an impression which has been permanent upon the general character of our diseases in this respect; exciting an obscure and indefinable influence, either upon the constitutions of our people, or by mingling and combining with the causes of our other maladies, indigenous or endemic. I am inclined to agree with them in the positive clause of the opinion thus expressed and admit the influence of Asiatic cholera, but I believe that the change was apparent long before, being coincident with the introduction and spread of the typhoid, enteric or abdominal form of fever.

My preceptor, honored be his memory, a zealous pupil of Wistar and Physick and Rush, a most sagacious and successful practitioner, who, through a long series of years, enjoyed the highest reputation and carried on the largest and most lucrative professional employment that ever fell to the lot of any private physician in this or perhaps any other country, made familiar and free use of the lancet, as all doctors then did. But his therapeutical speciality lay in his dependence upon purgatives. All cases that fell under his care—with exceptions so few as not to be worth noting—were indulged with some cathartic formula at the very beginning, and great numbers were carried through a febrile or inflammatory attack into convalescence, upon the same method, modified *pro re nata*. We, the inmates of his office, serving, each in his turn, passed whole days and evenings, not seldom far into the night, in the preparation of prescriptions, nine in every ten of which were cathartic formulæ. It may be well to say here, that at the period I write of and in that section of our country, it was the custom to make up the prescriptions of physicians at their own offices, and that it formed a very valuable portion of medical education, and thus the student became familiar with drugs and formulæ.

I have said that the gentleman spoken of was successful in every sense of the term, eminently so, as must be inferred from the lofty and long enduring estimation which he enjoyed, both among his brethren and his wide circle of clients. Yet, had he lived but a very few years more, he would have been forced, nay, he would of himself have promptly recognized the necessity to make a great change in his accustomed methods of treatment. I had not, I well remem-

ber, more than barely entered upon the responsibilities of practice, before I became aware that the class of remedies, which I had been so assiduously engaged in preparing and administering, were not demanded so generally, were not to be used so freely, were not unfrequently ill-borne and injurious, and that it was incumbent on me to resort to them with a certain degree of reticency and reserve. Yet they have held, and will always continue to retain a prominent place in the early management of fevers generally, as well as of many other acute affections.

A similar transition of views was going on coincidently, as regards venesection, and even more rapidly. It was the more marked, because under the teachings of the illustrious Professor of Practice, in the University of Pennsylvania, then the centre of medical instruction in our country, lavish and almost promiscuous blood-letting had become "the order of the day." The very equivocal, but indispensable argument, cutting with double edge, and convenient alike to sustain truth and error—"*post hoc, propter hoc*"—so fearlessly wielded by the ignorant pretender, so casuistically repelled by the undiscriminating sceptic, soon came to be absurdly applied here, as indeed it is still, and as all recoveries after venesection were formerly recorded as triumphs of the lancet, so now all deaths preceded by it were set down to its charge. I have stated my unequivocal opinion, that a change had taken place both in the prevailing types of disease generally, and in the constitutions of the subjects—both of them having become comparatively asthenic or adynamic; and of course, the loss of blood, like other methods of depletion, was less required, and not borne so well. Hence, venesection fell for a time into almost absolute disuse, and physicians soon ceased to carry lancets about them; nay, I know several who attained middle age without ever having handled such an instrument.

Farther, I will remark, that I look upon this specified constitution of diseases and subjects, as having culminated some years back and to be passing, or to have passed away in some measure. I do not know—I scarcely suppose—that cathartics are more demanded, but I am satisfied that depletory measures of every other character, venesection especially among them, are coming again not only more into fashion, but are really more frequently called for and better adapted to the general requirements of ordinary practice. We have ceased to be burdened with the recently prevailing timidity as to the lancet. Even if we are mistaken in our belief that we have past through the adynamic cycle, and in the advent of a new phase less asthenic, surely the experience of our late cruel war has proved, that under the most depressing contingencies of imperfect nutrition, shelter, ventilation, clothing, the loss of blood is far less impressive for evil than has been supposed; and we will hereafter bleed a patient in a doubtful case with vastly less misgiving, and offer him much more readily the chance of a reasonable experiment, the *anceps remedium*, which may require courage, but which, as I have maintained, we are bound to prefer to abstinence or inaction.

During the period of which I have been speaking, professional orthodoxy, ever ready to swing from one extreme to the opposite, repudiating the lancet of Rush, the leeches and gum-water of Broussais, and the purgatives of Hamilton and Piedagnel, progres-

sively attained the comfortable confidence in sustaining and stimulant medication shadowed forth by Brown, and carried to its height by Todd. The reign of this system has been short, however, and the vibrating pendulum seems to have settled down for the moment at what we call, after Chambers, "the restorative point," a little above the *médecine expectante*. It is well represented by Chambers and Bennett: a little and careful depletion, sometimes by a mild laxative, it may be an early emetic—a wet cup occasionally, or two or three leeches—a revulsive plaster, and in a severe attack a blister perhaps—an emollient poultice certainly—cod-liver oil, quinia and iodide, or chlorate, or bromide of potassium. This is all very well, and entirely unobjectionable; presents no appreciable risk to the sick man, and is very safe for the attending physician, who by this course avoids all chance of being accused of the death of his patient, if he does not recover. Following some such method in our habitual routine of business, as the great majority will, and prudently too, let the young physician be warned not to fall into any relaxation meanwhile of due attention to the varying conditions of the cases under his care. Some one among them may suddenly grow worse; aggravations of symptoms may happen, which will not bear neglect, while it will ruin him not to have observed or appreciated duly, and which may demand prompt and energetic action.

[*Rich. Med. Jour.*, March, 1867.

ART. IX.—*Waxy, Lardaceous or "Amyloid" Degeneration.*

THE organic change formerly described as "waxy," latterly as "amyloid," affects many parts of the body at the same time. It consists of a morbid deposit first occuring in the walls of the small arteries, afterwards penetrating their coats and infiltrating the neighboring tissues. It may be recognized by the action of iodine, which gives to the affected parts a reddish-brown color, instead of the yellow tint which the same reägent bestows upon the healthy tissues. The solid viscera are increased in bulk by the exudation, while the same change in the mucous membranes renders them liable to extravagant secretion. The change was described in detail in the kidney, and shown to consist of a fibrinous exudation into the substance of the organ, and into the tubes in the form of casts. The casts are sometimes susceptible of the characteristic reäction. The conclusion that the material is essentially fibrinous was based upon the results of ultimate analysis, the contractile tendency of the deposit, its convertibility into fibrous tissue, and its apparent identity with fibrinous casts. The disease was considered as affecting the whole body—not as confined to any particular organ. In the place of the general belief that the disorder is associated with tubercle, syphilis, or some other cachexia, it was shown that in a vast majority of cases it is produced by the loss of pus, or of some analogous discharge. This view was based upon an analysis of sixty cases of the "amyloid" or waxy disease, which came under the observation of the author. In fifty-two of these the change was apparently associ-

ated with the formation of pus. In detail, there were forty-seven cases out of the sixty, in which there was direct evidence of profuse and long-continued suppuration. In five the *post-mortem* appearances were such as to lead to the inference that the loss of pus had taken place at some antecedent period. Excepting in the concurrence of suppuration with "amyloid" change, these cases had no resemblance to each other. Syphilis had existed in some, tubercular disease in others, while in several there was no evidence but of local mischief. In eight cases in which there was no evidence bearing upon the ostensible discharge of pus, there were four in which there was reason to believe that there had been albuminuria of the kind connected with tubular nephritis, the quantity of albumen being very large. A drain of albumen by the urine is equivalent in some respects to a discharge of pus. There remain four cases in which, from the imperfection of the notes and other circumstances, the disorder was not traced to its source. The conclusion which associates the "amyloid" or waxy infiltration with the suppurative process, was tested by an examination of the cases of the disease recorded by Dr. Wilks and Dr. Grainger Stewart. These writers have together reported 109 cases in which the body was examined and the antecedent disease was traced. Eighty-three, or more than three-quarters, depended upon undoubted loss of pus, while in the remaining twenty-six the disorders are of such a nature that it is not possible to doubt that suppuration must have existed in the majority, if not in all. It is sufficiently striking that so large a proportion should have been mentioned as associated with suppuration, considering that these authors appear to have recorded their cases without particular regard to this condition. The connection between the discharge of pus and the so-called amyloid deposit is such that more or less of the organic change may be predicted, whenever the long continuance of suppuration has been ascertained. The view that the disease is necessarily associated with syphilis, tubercle, or any especial cachexia, is disproved by several of the cases recorded. In one case it came on in consequence of suppuration from dilated bronchial tubes; in another after suppuration from a compound fracture; in a third from profuse discharge after an amputation; in two after pelvic abscess consequent upon labor. The fact having been established, that the removal of pus from the system causes a deposition of the characteristic material in the organs, the nature of the connexion was examined. Pus is an albuminous fluid which is alkaline, owing to the presence of potass and soda. The alkaline and earthy salts of pus amount, on an average, to 1 per cent. of the discharge; of this, the salts of potass and soda form about nine-tenths. Details are given, showing that the proportion of alkaline salts in the secretion is greater than in the corresponding blood, and it was shown how large an amount of alkali is by this means removed from the system. A discharge of pus is equivalent to a removal from the blood of albumen or alkali. The characters of the "amyloid" deposit formed the next branch of the inquiry. Essentially consisting of fibrin, it remains to be seen on what the peculiar reaction depends. Ordinary fibrin is colored yellow by iodine, as are the healthy tissues; while the "amyloid" deposit takes the characteristic deep brown. It was shown that, if the diseased tissue were allowed to absorb a small quan-

tity of potass or soda the peculiar reäction was destroyed, the tissue afterwards behaving in all respects as in health. This power of destroying the "amyloid" reäction is confined to potass and soda. It was next shown that the "amyloid" deposit has a distinctive action with sulphate of indigo. Healthy tissue destroys the color, while the "amyloid" retains it. The power of destroying the color of sulphate of indigo is due to the free alkali present in the healthy tissue, absent from the "amyloid." Next were given the results of analysis of the healthy and "amyloid" livers, in which it appeared, from the examination of seven healthy and seven "amyloid" organs, that the latter contained a proportion of alkaline salts diminished, on an average, by one-fourth, the potass and soda being diminished equally. Finally, it was shown that the "amyloid" substance could be made artificially out of fibrin or albumen by removing or neutralizing the alkali with which they are combined. This artificial "amyloid" matter was shown to the Society, and had all the reäctions with iodine and indigo which are characteristic of the morbid deposits. The following were stated as the conclusions of the inquiry: The so-called "amyloid" deposit consists of dealkalized fibrin. It is not necessary to repeat the reasons for supposing the deposit to be fibrinous. That it is wanting in an alkali is shown by these considerations: 1. The morbid deposit loses its characteristic reäctions when it has been allowed to absorb potass or soda. 2. Organs containing this deposit yield on analysis a smaller proportion of the alkalies than do the same organs in a state of health. 3. Ordinary fibrin or albumen can be made to exhibit all the peculiarities of "amyloid" tissue by depriving them of alkali by artificial means. The morbid deposit is of the nature of a residuum. It occurs in cases where the system has been drained by an alkaline and albuminous discharge, the blood, therefore, retaining an excess of fibrin with a deficiency of potass and soda. The most frequent cause by which this deposit is produced is suppuration—a cause which is active certainly in five cases out of six. The loss of albumen by the urine has a feeble action of the same kind. The term "amyloid" must fall into disuse as founded upon error. The author proposes the word *depurative*—depending upon the removal of pus—as fitted to describe the disease. The frequency of the change, the generally obvious nature of its cause, and the readiness with which it is detected during life, combine to give it great practical importance. It supplies a large portion of the albuminuria which comes under the care of the physician, and is of constant occurrence in surgical wards, modifying the course of the disease and the results of operations. A suggestion may be made with regard to patients subject to a purulent discharge. The food may be regulated so as to compensate, as far as possible, for the loss of albumen, and liquor potassæ and liquor sodæ may be given so as to make up for the loss of alkali.—*Med. Times and Gazette, Feby.* 23*d*, 1857.

ART. X.—*Ossification of the Dura Mater.*

DR. MARCUS EUSTACE exhibited a specimen of osseous deposit in the falx cerebri, taken from the body of a gentleman who died in July last, having been two years and three months under the

care of the Drs. Eustace, in their private asylum, Hampstead House, Glasnevin.

The case at first was very obscure. About three years before his death he was under the impression that he had disease of the brain, and that he would die suddenly; and the late Dr. Mayne and Dr. Banks, having been consulted, recommended that he should travel. He went to Edinburgh and London, and sought additional advice there, as he suffered at night from occasional faintness; and at both places he received the opinion that there was nothing serious the matter. He soon after showed that he had the fixed idea that he had died on a certain day, and resisted taking food, acting in every way he could consistently with his delusion.

He was brought from London to Dublin; and on further consultation with Drs. Banks, Mayne and Gordon, it was thought there was some obscure disease of the brain.

There was a slight tendency to paralysis, at this time, on the left side, which soon partially passed off. He did not take sufficient food, and wished to remain in bed, He was brought to Hampstead House on the 21st of April, 1863; he was then a good deal reduced, and required assistance in walking; had a rapid pulse, and was feverish. Acting in accordance with his delusion that he was dead, he would not acknowledge that he suffered any pain. During the first ten days he had food barely sufficient to support life, and then refused to take any, and it was found necessary to introduce it by the stomach pump. The greatest difficulty was experienced in opening his mouth. The nasal tube, as recommended by Dr. Harrington Tuke, was tried, and on each occasion it appeared to pass into the larynx.

Dr. Mayne was consulted, who tried over and over again to pass the tube, but with the same result, and was perfectly convinced that it was useless to make any further effort to introduce it. It was found that the only means of success was by tiring the masseter muscles by attempts with the handle of a spoon, which caused him to clench his teeth, so that ultimately the muscles became fatigued and relaxed sufficiently to enable them to open his mouth to pass in the plug.

The stomach pump was used three times a day; the catheter also required to be used, and cold water enemata were given to produce action of the bowels, all of which he resisted with great force.

After four months, during which time this mode of treatment was constantly pursued, from being greatly reduced the patient had increased considerably in flesh; he had riding exercise, as he could not walk, being accompanied by an attendant. He continued to increase in flesh; and one day, seeing one of the servants eating he said he could eat also; he was in the habit of saying it was a shame to bring a dead man about, and that he ought to be buried, so that his family might get his property, his life being largely insured. He now yielded, and took food freely, but said it was a strange thing for a dead man to eat. He gradually recovered; and after nine months' residence at Hampstead House, he appeared to be perfectly well. He still had the same kind of gait, but walked without difficulty two or three miles daily. His mind appeared to be quite restored; his

delusion passed away; and on his friends visiting him, he frequently said, "I am still alive, and my life has been saved by the use of the stomach pump."

One day, while sitting in the drawing-room, he was remarked by the servant to sink, sliding off the chair; he was at once removed to bed, and within a few minutes had a severe epileptic fit, which was repeated throughout that day and night, each half hour. There was great prostration, the pulse 120, the breathing quick, sordes on the teeth, and insensibility. The following day he was something better, but continued to have convulsions every half hour. When they would pass off he would appear in his right mind. While conversing, the convulsions would come on, draw him up for a moment, and relax again, and he would then continue the conversation precisely where he had left off, apparently unaware of the attack. This continued four days; during that time his head was leeched and blistered, mercury was administered, sedatives were also given, and the catheter was used. On the fourth day a large belladonna plaster was applied along the spine. From that time until three months after he had no convulsions; and whether that was the result of the belladonna plaster, or that the convulsions were on the point of subsiding, cannot be decided. About a fortnight afterwards the delusion that he was dead again took possession of his mind; and after three months, he had another attack of epileptic convulsions, which lasted for three days, and passed off like the last; but in this instance belladonna was applied without producing any good effect. Again he recovered, but with partial paralysis of the lower limbs, and he was seldom without twitchings of the muscles of the neck and face; and about eighteen months after he came to the asylum it appeared that he was undergoing a great change for the worse. The spasms were more evident and increased; he took barely sufficient food; he slept but little, requiring draughts of chlorodyne frequently repeated; and in July, 1865, there was a fourth attack. After death the ossified falx cerebri now exhibited was discovered. The brain was perfectly healthy, and was moulded exactly to the nodules of the bony deposit. The spinal marrow and all the other organs were perfectly healthy; there was but little effusion or congestion. The case had been treated as one of reflex epilepsy, and bromide of potash was given all through with marked benefit.—*Dublin Quar. Jour. Med. Sci., Nov.*, 1866.

Midwifery and Diseases of Women.

ART. XI.—*Inversion of the Uterus: New Method of Reduction.* By DR. FESSENMAYER, *of Altkirch.*

THE 29th December, 1863, I was called to a young woman, 20 years old, primiparous, delivered on that day, and subsequently having flooded considerably. I recognized by the touch a complete inversion of the uterus. The *os tincæ*, which bounded the summit of the vaginal tumor, was very close. Attempts at reduction were

fruitless, and renewed the hæmorrhage. Moreover the volume of the uterus was too great for reduction through the *os tincæ*. I prescribed hemostatics and astringent injections.

A few days before I had made use of an india-rubber ball as a tampon, for a case of partial adherence of the placenta to the *cervix uteri*. Labor commenced as usual, with a very abundant flow of blood. The inflated ball arrested the hæmorrhage, at the same time promoting the contractions. The dilated neck allowed the introduction of the hand to detach the placenta and disengage the head, which was presenting. The numerous advantages offered in obstetrical practice by the inflated ball presented themselves to my mind, on returning home from my visit to this lady. I observed also that her perineum and fourchette were intact, and immediately conceived the idea of employing the rubber ball to attempt the reduction of the inverted uterus. I proposed this operation to the lady, making a delay of its trial for several weeks, that the uterus might become disgorged. It was six months before I had an opportunity to put in practice this plan of operation. The existence of uterine inversion was unknown to the midwife and the other wise heads of the neighborhood. I myself had only lived there six months, and public opinion was not favorable to me.

July 10th, 1863, she was brought to me in a carriage. Her features were greatly changed; she was very anemic; her lower extremities were edematous; a chronic bronchitis was wearing her out. From the vagina flowed a grayish sanies, profuse and fetid; her catamenia had scarcely an eight days' interval between periods. She was too weak to sit up, and they had to bring her from the carriage on a bed. On examination by the touch, I found the uterus inverted, very small, quite disgorged; the *os tincæ* was hard and flattened upon the neck.

As this woman lived several leagues from my residence, I had to give my instructions to her father, and explained to him the results which I expected from the inflation of the tampon ball. The one I had was tolerably strong, and one could easily give it the volume of a child's head at the eighth month of intra-uterine life. I required the woman to bear a pressure slightly increased every day, so as to attain, at the end of several days, the above-mentioned volume. I prescribed emollient injections morning and evening, and advised her to remove the apparatus at stool and in urinating, if there was too much pressure.

On the morning of the ninth day, the father used rather more force than usual in distending the ball, and she suffered all day from colic and pains extending from the hypogastrium to the breast. She had the fortitude not to alter the apparatus, thinking that it was producing its effects, and her instinct did not fail her. About 4, P. M., the pains ceased, and the next day the father no longer found the tumor in the vagina. The introduction of the ball was, however, continued.

Three days after, 22nd July, I visited my patient, who considered herself cured. The vaginal discharge was slight. By the touch I found the uterus in place: the finger still easily penetrated the neck, in the midst of which was distinctly felt a transverse ring, the size of the little finger. A fortnight subsequently this little opening was

still perceptible in the anterior and middle part of the neck, which besides was almost firm.

From 20th July she began to mend. The catamenia appeared three weeks later, thenceforth always regular as before her marriage. The cough slowly abated. Pills of protiodide of iron contributed to the recovery, and the anemia rapidly disappered.

This new method of reducing an inverted uterus had sustained the proof of trial, and given success in a case where I dared not hope for it. But how would it answer in a recent case of inversion? The following observation allows me to state fortunately.

The 4th December, 1865, I was called to a lady delivered two days before. There had been profuse flooding. She had vomiting and a swollen abdomen. I found her very weak and anemic. The abdomen was distended. In the hypogastrium there was a large tumor, which I took to be the bladder, from its elasticity. In endeavoring to confirm my diagnosis by vaginal examination, I was astonished to find a complete inversion of the uterus. I drew off with the catheter 4 *litres* of urine; I treated constipation with enemata and a laxative; and postponed for several weeks attemps at reduction, by reason of the large volume of the uterus. One month later I sent to her husband, not a tampon ball, for her perineum was impaired; but a large india-rubber pessary, with an inflater. This pessary presented a flat, horizontal portion, which gives a larger point of support when the perineum is ruptured.

After applying the apparatus and indicating the method of distending the pessary, I required the husband to act as in the preceding case. At the time treatment was begun, the uterus was engorged, but its volume was little greater than normal. She was always edematous, on account of excessive anemia. Notwithstanding this unfavorable condition, towards the evening of the third day, as I had foreseen, she felt *strong pains extend from the lower abdomen towards the breast.* At the end of four hours they ceased, and the uterus was reduced.

The catamenia returned only on 1st March. The 10th March, 1866, I could assure myself that the uterus was in its natural place and had recovered its normal volume. This woman was not confined to bed during treatment, as she was obliged to attend to household duties. An abundant serous discharge existed from delivery until the reduction of the uterus; from this time it entirely disappeared. She rapidly recovered, and her health soon became perfect. *Gazette Médicale de Strasbourg,* Dec., 1866.

ART. XII.—*Sore or Excoriated Nipples.* By DANIEL V. FOLTS, M. D.

"When fevers burn, or ague freezes,
Rheumatics gnaw, or colic squeezes,
Our neighbors' sympathy may ease us
Wi' pitying moan;
But thee—thou hell o' a' diseases,
Ay mocks our groan."

IF an aching tooth could thus arouse the Scottish bard to the utterance, if not of "thoughts that breathe," at least of "words that burn," I was wondering the other day, when his natal anniver

sary was being celebrated, what he would have said of the agony of nursing with sore nipples, especially had he been a mater-, instead of a pater-familias! Perhaps no other disease apparently so trifling, and never fatal, has caused a tithe of the sufferings in the lying-in chamber that this has. For centuries the profession has been devising means for its cure. On the shelves of every physician's library are found volumes containing long lists of remedies for this affection. The mineral, the vegetable and animal kingdoms have all been laid under contribution. The salts of silver, of copper, of lead, of zinc and mercury, as well as those of alumina and potassa, have had their advocates. Time would fail to speak of all the washes and lotions—narcotics, emollients and astringents—to say nothing of the unguents, plasters and fomentations that have been employed. And yet so common is this complaint that a distinguished professor in one of our large universities writes, "I am surprised when I hear one of my patients say that she does not suffer from it." It however affords me pleasure to be able to put it on record that my experience differs from that of the professor—for a very large majority of my lying-in patients, in a practice extending over more than a quarter of a century, have been free from this source of suffering. And yet but too often have I been compelled to witness the terrible struggle between bodily pain and maternal affection, when the infant called for its natural food and the mother was attempting to supply it. When the attention of the surgeon was first called to the value of collodion in closing incised wounds and healing abraded surfaces, I thought surely, now we have it! But after having brushed over many an excoriated nipple, thereby adding suffering to misery by the smarting caused by the ether in the compound used, I was compelled to abandon it. For, aside from the pain caused by its application, I found that the artificial cuticle formed was as worthless as the narrow strips of adhesive plaster recommended by Dr. Physick, the power of the original infant pump being usually sufficient in one application to disarrange the whole arrangement. At one time, in common with others of the profession in this city, I had some confidence in "Parker's oil and ventilating nipple shield." In some cases, indeed, it answered a good purpose, but in more it utterly failed, so that of late I have ceased to recommend it. It has always been my opinion that, to cure a sore nipple, absolute rest of the part was as necessary as to heal an incised wound; and generally, I think, we shall find, as Dr. Gooch has it, that "we are rowing against the stream so long as the cause, viz., the action of the child's mouth in sucking, is renewed at short intervals." To succeed, then, the chapped or excoriated surface should be protected from the friction of the infant's tongue and gums; and this not for a few hours, or days even, but until it is healed and covered by sound integument. To fulfil this indication and not wean the child, has hitherto been a task difficult to accomplish. The various shields of wood, metal and glass, with all manner of teats attached, have been called into requisition; and besides those found in the shops, I have had others constructed by skilful mechanics. With these I have sometimes succeeded, but more generally the matter has ended in mortification to myself and disappointment to my patient. * * * * [Dr. Folts then speaks of certain other nipple shields which he had found pos-

sessed of much merit, but gives the preference to the one described in this article.] It remained for Mr. Kent, a well-known apothecary of this city, in his "Metallic Nipple Shield and Caoutchouc Teat," to supply this long-felt need. This is the only artificial nipple that I have ever used with unvarying success, and so admirably does it answer the purpose that the worst cases of sore nipples have entirely recovered without any local application whatever to the excoriated surface, beyond cleansing the parts and wiping them dry when the shield was removed. Glycerin unguent, or some other emollient application, might in some cases be advisable to soften the skin and promote granulation. Mothers who had suffered untold agony in nursing, and had resorted to all other means in vain, have been at once relieved by this simple appliance. The valvular arrangement is so simple that it is almost impossible for it to get out of order, and yet so efficient that a few inspirations of the child cause it to adhere so firmly that nursing proceeds much as if no artificial medium were interposed. What the infant thinks of the arrangement, we shall not, perhaps, at present be informed; but the mother says, "blessings on the head of the man who invented it!" I will only add, for the benefit of those who may be so unfortunate as to need this mechanical substitute, and for the information of the profession at large, that T. Metcalf & Co., 39 Tremont St., are the general agents for its sale.—*Boston Med. and Surg. Journal, March* 14, 1867.

ART. XIII.—*Menorrhagia and Menorrhagic Pain Treated Successfully by the Spinal Hot-Water Bag.* By JOHN CHAPMAN, M. D., M. R. C. P.

IN 1863 I published six cases of menorrhagia, proving that the profuse menstrual flow may be arrested by the application of heat along each side of the lower third of the spine.* As many of the readers of this journal are probably aware, the curative influence of heat when thus applied in such cases is exerted directly on the sympathetic nervous centres, and through them indirectly on the uterine arteries which by the increased amount of nervous energy transmitted to their muscular coats are made to contract, and so to diminish the flow of blood to the womb. The record of the six cases in question was preceded by some explanatory observations, a part of which it may perhaps be well to repeat here.

"It would be difficult either to enumerate or to estimate the advantages which will accrue to women from the power of arresting or regulating the flow of blood from the womb. Certainly, the number of diseases indirectly caused by that anæmia to which many women are reduced by habitually profuse and too frequent menstruation is very great; in a large number of instances it is, I believe, the parent of consumption; it enfeebles the physical and mental energies, and impairs the constitution, and thus prepares a favorable nidus for the development of disease in general, and especially of any disease to

* See "Functional Diseases of Women: Cases Illustrative of a New Method of Treating them through the Agency of the Nervous System, by Means of Cold and Heat. Also an Appendix containing Cases Illustrative of a New Method of Treating Epilepsy, Paralysis, and Diabetes." By John Chapman, M. D. London: Trübner and Co. 1863.

which the patient may be predisposed. Apart from the consideration of the amount of actual disease from which many women may be saved by the power here explained and illustrated, the mere comforts which it is capable of conferring upon them is immense; if women who are in the habit of being subject to a sanguineous discharge during a third of their time can be so far relieved from it as to be troubled with it during only four days a month, the beneficial change they will thus experience will be very great indeed; while the soothing, pain-annulling influence of the treatment in question is not less remarkable. According to the general testimony of the patients, they feel soothed in a wonderful manner very shortly after the first applications of heat have been made. Indeed, *a priori*, this result might be expected; the circulation of blood in the womb is lessened, not by the direct application of cold, which acts as a shock, compelling those parts of the organ, including its blood vessels, with which the cold comes most in contact, to shrink and contract, thus also inducing different degrees of contraction in different parts; not by medicines mixed with the blood, and exerting an astringent force at the cost of changing the quality of that fluid throughout the body from its normal standard, but by a power acting exclusively through the agency appointed by nature herself—the nervous centres, and the lines of communication established between them and the parts over which they preside. This subtle power, from its mode of action, may be said to partake rather of the nature of persuasion than of force; its beneficial effects are not wrought by causing violent revulsions, or sudden stoppages of the sanguineous currents, but by inducing a gradual diminution of the volume and rapidity of those currents, and the fact that the changes in the blood-vessels are gradual, and subordinate only to the gentle influence of the ganglionic nervous system, may enable us to understand how it is that the action of heat in restraining uterine hæmorrhage is so peculiarly grateful to the patient.

"There is, however, another reason, I believe, why in cases of profuse menstruation, heat applied in accordance with the principles explained above exercises a powerful soothing influence. The undue loss of blood is commonly accompanied by a sense of weariness, and a continuous aching of the back. The sense of weariness is, of course, partly due to the fact that the brain is inadequately supplied with blood: but I venture to express the conjecture that the backache is due to a deficiency of blood in the spinal and ganglionic nervous centres of the affected part; that the pain is analogous to that form of headache due to exhaustion, or insufficient nourishment of the brain; and that it is removable by the same method as that by which the form of headache in question is removable, viz., by increasing the supply of blood to the nervous centres, which are the seat of the pain. If this hypothesis should be hereafter confirmed, it will afford an adequate explanation how menorrhagic pain is annulled by heat applied to the back."

The truth of these remarks appears to be strikingly exemplified in the following cases:

Case I.—A. B., aged thirty-five, housemaid, has suffered from profuse and prolonged menstruation during several years. She has a heavy, sickly, and weary look, and has been obliged to leave several

"places" on account of her general debility, and difficulty of carrying things up stairs. The menstrual discharge often lasts ten or twelve days, and is accompanied with great pain in the back, and a "sinking in the stomach." She says her back "feels as if it were coming to pieces." She finds some relief by pressure against it, and therefore places a pillow beneath it at night, and often sleeps with her arm beneath it. The discharge is so copious, that she is generally obliged to use about thirty thick napkins. She has been treated by a variety of medicines, and by mustard poultices applied along the spine until the back became very sore. At her menstrual period preceding the one in question, she became so ill, and was so weakened, that she was ordered, by her ordinary medical attendant, to leave her work, and give herself up to rest during a fortnight.

Having resumed her duties, she again became "unwell" early in the morning of November 1st, 1866, as profusely as usual. In the evening of that day, or about eighteen hours after menstruation recurred, an 8-inch, double-columned spine-bag, containing water at 120° F. (the bag having been warmed before the water was put in, so as not to lower its temperature), was applied along the lower third of the spine, and was kept on till the water became cool. The result of the first application was such wonderfully rapid and great relief to the patient's back, that she said, "I feel as if I were in heaven." The flow was meanwhile restrained to a very great extent. During her whole menstrual period, the bag was applied seven times, and each time remained on until it had become cool. The flow had quite ceased at the end of the fifth day, and had been so lessened in quantity, that but little more blood was lost during the four days after the treatment began, than was lost during the previous eighteen hours. Moreover, the patient found herself generally very much better and very much stronger than during her previous periods. She said she felt as if she had got a new back; and as a proof of her unusual strength, she adduced the fact that, whereas generally during her periods she is obliged to ask one of her fellow-servants to perform one of her duties for her—viz., that of carrying water up stairs to her master's room in the morning, because she feels as if she should faint in attempting to do so, and did on one occasion reestablish the flow by doing so, on this occasion she carried the water herself with ease. She also found that, whereas during her former periods, bending the body forwards and backwards caused great pain, she could, during her present period, readily do so without producing any pain at all.

CASE II.—Mrs. P., aged thirty, has long suffered from menorrhagia, so profuse that the blood at times literally streams from her, and has resulted in a terrible impairment of both her bodily and mental energy. The discharge usually continues six days, and towards the last, while still continuing extremely copious, presents all the appearance of pure arterial blood. She began to menstruate on the last occasion October 21st, 1866, and after the lapse of twenty-four hours, the spinal hot-water bag was applied in the manner described in the account of Case I, but with this difference, that the bag as soon as it became cool was refilled with water at 120° F., and was kept applied almost continually during each day. The result was a diminution of the discharge to one-half of the usual amount (the patient is

confident of this), and its complete arrest at the end of the fourth instead of the sixth day.

I may here observe, that I have received numerous testimonies from professional men of the efficacy of heat thus applied in restraining menorrhagia. I shall venture, even without asking permission, to mention the names of three gentlemen who have experienced the value of the remedial power in question, and who have given me assurances to that effect: Mr. Hammerton, of Picadilly; Dr. Goolden, of St. Thomas' Hospital; Prof. McLean, of Netley Hospital, and Dr. Fuller, of St. George's Hospital.—*Medical Mirror* (London), *Jany.*, 1867.

Materia Medica and Pharmacy.

ART. XIV.—*Cereus Grandiflora, Cactus Grandiflora (Linn.), Night-Blooming Cereus, Sweet-Scented Cactus, etc.* By A. F. PATTEE, M. D., Boston.

NATURAL ORDER—Cactaceæ.

Generic Characters—Stem creeping and rooting five to eight angles; flowers terminal and lateral, very large, showy; sepals brown on the outside, yellow within; petals white, spreading, shorter than the sepals.

Specific Distinction—Flowers bloom by night, commencing at twilight, withering as night advances, close and die before the dawn of day. Stem branching, armed with numerous clusters of spines. The stem is mucilaginous.

Habitat—Mexico and West Indies, and cultivated in Spain, Italy and some tropical countries, and hot-houses of the United States.

History.—The plant was used by the natives of Mexico previous to the conquest, for the cure of numerous diseases, such as intermittent fever, irritation of the urinary organs, and other maladies incident to the country. It was introduced into Germany as a therapeutic agent by Dr. Scheele, and lately brought to notice by Dr. Rubini.

Physiological Effects.—This cactus is sedative to the nervous and circulatory systems, and acts on the kidneys. Given in the regular medicinal doses, repeated at the proper intervals, and gradually increased if necessary, it is found to diminish the frequency of the pulse, and increase the secretion from the urinary organs largely; it is of great service in the treatment of dropsical diseases. In large doses it is irritant to the stomach, and has a peculiar effect upon the brain, producing mental confusion, hallucination and slight delirium.

REMEDIAL EMPLOYMENT—*Diseases of the Heart.*—The cactus was recommended as a specific in diseases of the heart, and it is in this disease that it has been used almost exclusively. That it has a very decided action on the heart we are well satisfied. It relieves irritation of this organ, whether dependent on local causes or due to re-

flex action from disorders of the stomach, lungs, or other viscera. The following case will illustrate its use in a complicated functional heart affection.

Mr. D. W., æt. 60; married; father of several children; health always good; an inveterate smoker. In January, 1866, he was troubled with palpitation, with irregularity of the heart's action on the slightest exertion, and great dyspnœa on lying down. His physician pronounced the case to be one of structural disease, and told the patient he was liable to die at any time. The disease continued to progress, the lower limbs becoming anasarcous; he was examined by a number of prominent physicians, who concurred with the attending physician with regard to the diagnosis and prognosis. We advised him to try the tincture of cactus in five-drop doses three times a day in water, and discontinue all other medicine. He commenced taking the medicine Oct. 1st, 1866, and with the most happy effect; the dyspnœa gradually disappeared, the limbs gave up their water, and at the present time the patient is able to rest all night in the horizontal position, and the action of the heart has become regular. I have used this remedy in many other well-marked cases, with much benefit to the patient.

This remedy is contra-indicated in diseases of an inflammatory nature with acute symptoms. In cardiac rheumatism, combined with bi-carbonate of potash, I have found the cactus worthy of confidence. In the condition of the heart which is generally associated with anæmia, and in which the tissue of the organ is enfeebled by defective nutrition, the cactus is indicated, in combination with chalybeates, the mineral acids and other tonics, to improve the character of the blood. An important incidental advantage in these cases is, frequently, its effect in removing the dropsical effusion, whether in the pericardium, the other serous cavities, or the general areolar tissue.

Functional Palpitation of the Heart.—Perhaps in no affection does cactus act more favorably than in palpitation, either from plethora, anæmia, or mere nervous disorder; but the remedy is applicable only to the cases in which the affection has a certain degree of permanency, and not at all to those occasional and fugitive attacks which occur under passing excitement.

Administration.—The tincture is preferred, as it is supposed to keep better; and, in order to insure uniformity, it should be *saturated.* Take of the fresh stem and flowers of the cactus four ounces, ninety-five per cent. alcohol one pint; macerate for one month and filter. The dose of this tincture is from one to five drops three times a day; if no effect is produced upon the disease in the course of three or four days, the dose should be gradually increased until unequivocal symptoms of its operation are manifested.

We believe, in conclusion, that if the profession will test the virtues of the cactus, there will be few who would be willing to dispense with its use.—*Boston Med. and Surg. Journal*, March 31, 1867.

Art. XV.— *The Sulphate of Bebeerine in Uterine Diseases.* By A. P. Merrill, M. D.

It will scarcely be doubted that most of the uterine diseases which are treated by surgical remedies with such varying success, are due to, or accompanied by, engorgements of the diseased organ, arising from local and constitutional irritations, inviting into its tissues an undue determination of blood, the natural consequences of which are hypertrophy and derangement of function. According to the degree and duration of this diseased condition of the uterus, there is an increase, decrease, or suspension of secretion, swelling, pain, leucorrhœa, hæmorrhage, and possibly obstruction of the cervix uteri. Displacements are also consequences of this tumefaction, and these are facilitated by vaginal relaxation, which is a constant concomitant.

These are the diseases which have of late years so occupied the minds of uterine pathologists, and led to the invention of mechanical and surgical remedies almost without number. Besides the volumes which have been published on this subject, the medical journals are laden with essays and discussions; but the disagreements among able and distinguished physicians are such, that they who are dependent for their opinions upon the observations of others, are still at a loss to understand the true character of the disease, and the remedial power of the surgical treatment which is so confidently recommended. If, therefore, these morbid conditions of the uterus and its appendages may be relieved in any degree by curative measures which tend to supersede the use of the speculum, pessary, tent, caustic, leech, hysterotome, cervical dilator, and other surgical appliances revolting to female delicacy, it behooves the profession to inquire into their remedial virtues; and the object of this brief paper is, to recommend the sulphate of bebeerine to such scrutiny.

Having occasion several years ago, to treat a married woman of nervous temperament for periodic fever and neuralgia, and finding that she suffered considerable inconvenience from the action of quinine, I was induced to try the effect of the sulphate of bebeerine as a substitute for it. Relief not being obtained, I proposed to withdraw the remedy, but she objected, saying, although it was of little service to her neuralgic pains, it had promptly relieved her of excessive menstruation, and she wished to keep the medicine by her to answer that indication as occasion might require. Several years subsequently this intelligent lady expressed to me her conviction that she owed to the use of this one remedy her relief from painful uterine disease of long standing, and also from the reproach of sterility.

The sulphate of beeberine is a remedy for dysmenorrhœa, excessive menstruation, hemorrhage, leucorrhœa, and all uterine disorders dependent, in whole or in part, upon hypertrophy and hyperæmia of the uterus and its appendages. It exercises, also, a tonic power over the kidneys and bladder, and a restraining influence over blennorrhœal discharges. I prescribe it in pills, made up with syrup, in doses of five to twenty grains, and commonly apply aloes as an adjuvant remedy.— *Med. Record* (N. Y.), March 1, 1867.

ART. XVI.— *Viburnum Prunifolium.*—(Black Haw.)

IN the November number of this Journal Dr. D. L. Phares, of Newtonia, Mississippi, in an article headed "Lines on Indigenous Medicinal Plants," calls attention to the medicinal properties of the Black Haw.

We are again induced to call the attention of the profession to this comparatively new medicinal agent, that we may give our evidence as further proof of the favorable results claimed for it. Dr. Phares regards the viburnum as a nervine, antispasmodic, astringent, diuretic, and tonic. He contends that, in the nervous disorders incident to pregnancy and uterine troubles, such as cramps, palpitatins, spasms, etc., it is a valuable remedy. He adds, "*that it is particularly valuable in preventing abortion and miscarriage, whether habitual or otherwise; whether threatened from accidental cause or criminal drugging.*"

Within the past few weeks we have given the above remedy in two cases of threatened miscarriage, and in both with the most satisfactory results. The first case in which we administered it, was that of an exceedingly delicate lady, who, fourteen months previously, had miscarried between the fifth and sixth month. For a week or more preceding the administration of this agent, we had persevered in the usual remedies for threatened miscarriage, without accomplishing more than the mitigation of the pains. For twenty-four hours before the use of the viburnum, it required from one to two teaspoonfulls of the tincture of opium, every six or eight hours, to control the pains. In six hours after the first dose of the viburnum, the pains were entirely arrested. As an evidence that the cessation was due to this agent, and not a mere coincidence, the infusion of viburnum, through mistake, was suspended, with a return of the pains, which were again arrested by resuming the remedy. Anodynes, which were required in such large doses, before the administration of this new agent, have not been necessary since its use. The case, in every particular, is progressing favorably.

The second case was a lady in her eighth month of pregnancy, who for a week or ten days had been suffering occasional pains, with constant pain in the lumbar region, and cramps in the lower extremitics, etc. Anodynes were administered, and sinapisms applied to the spine, with only temporary benefit; the pain and other troubles returning as soon as the effect of the remedies subsided. In this condition, the infusion of virburnum was given, which promptly relieved all the trouble. She continues to take the remedy three times a day, and is progressing favorably. Another case similar to the last mentioned, with the addition of neuralgia of the face, was reported to me today, by a physician of the city, which was promptly relievd by the infusion of viburnum.

The form in which we have used the viburnum has been the infusion, or decoction of the bark. If the symptoms are urgent, we give from one to two ounces every two or three hours, until the pain is relieved, then lessen the dose, and lengthen the interval according to circumstances. As a preventive, we give an ounce of the infusion, three or four times a day.—*Atlanta Med. and Surg. Jour.*, March, 1867.

Art. XVII.—*Syrup of Lime in Rheumatism.*

[The following has been sent us in the form of circular, having previously appeared in the pages of the *Boston Medical and Surgical Journal.* Though no therapeutical mode of action is suggested, we give place to the communication, thinking that it may be of interest to some of our readers, and, perhaps, worthy of trial on purely empirical grounds.]

TREATMENT OF ACUTE RHEUMATISM.—*Messrs. Editors:* Having for a year past used what I consider a new remedy for rheumatism, and with better success than from any other remedy, I consider it proper to ask the profession to make a trial of it. It is the syrup of lime, made according to Trousseau's prescription, as found in Parrish's Pharmacy. I have used it, according to the severity of the case and the age of the patient, in the dose of ten drops to forty-five drops, and repeated in from two to six hours, as symptoms have seemed to demand. In but one case has any opiate been required from the beginning. Two cases were complicated with Bright's disease, as indicated by the great abundance of albumen and the casts, as seen in the urine. In one of these the albuminuria entirely disappeared, and in the other it has been largely diminished.

There has been no constipation, but generally looseness of the bowels after a couple of days' treatment.

The medicine is best taken in unskimmed milk, in quantity from a tablespoonful to four ounces, according to the size of the dose of syrup.

Hoping that other members of the profession may meet with the success which I think I have had, I am very truly yours,

Boston, Feb. 23, 1867. Chas. E. Buckingham.

For the information of our readers, we copy from Parrish's Pharmacy the prescription alluded to in the communication above:

"Calx Saccharatum, Syrupus Calcis.—Trousseau used the following proportions for producing a solution of lime by the aid of sugar: 1 part of slaked lime, 10 parts water, and 100 parts syrup are boiled together for a few minutes, strained and diluted with four times the weight of simple syrup.

"This syrup has an alkaline taste and reaction, and is the solution of a chemical compound of sugar and lime. It is used for the same purposes as lime water, but on account of its causticity, it is necessary to dilute it considerably. It is given to children in the quantity of twenty or thirty grains during the day; adults take from two to three drachms during the same time."

The New Treatment of Rheumatism.—*Messrs. Editors:* I am glad you published Trousseau's formula from Parrish, as it enables me to correct an error. I had not read it before, but simply saw it was announced as in Parrish's book. Trousseau's own statement is of a syrup saturated with lime. "*Il se prépare en saturant le sirop de sucre par le chaux et en filtrant.*" On looking at Parrish, I find that it is to be made of *slaked lime.* This is entirely wrong. *It should be made of caustic lime.* The best formula would be to mix two ounces

of lime, unslaked, and eight ounces of sugar together in the mortar, and pour over the mixture a wine pint of boiling water. Add boiling water enough to make up the pint, and filter. By the use of boiling water, the operation is more rapid, and the formation of lumps is avoided. Of this I have given as much as forty-five drops every two hours in one case of acute rheumatism. Generally, thirty-five drops in half a tumblerful of milk every three hours have been enough. The diet in my cases has been left to the patient's choice. Very truly yours, CHAS. E. BUCKINGHAM.

Boston, March 2, 1867.

ART. XVIII. — *Perchloride of Tin in Affections of the Urethra and Vagina.*

IT is always with reluctance and with doubt that physicians make use of a new remedy; nevertheless, M. Mallez does not hesitate to recommend the above preparation in muco-purulent affections of the genito-urinary apparatus, in the proportion of two *grammes* to one hundred *grammes* of distilled water, used as an injection once daily. According to M. Mallez, this solution acts directly upon the purulent secretion of mucous membranes, causing the pus globules to disappear immediately, as observed under the microscope. He has employed it with success, for four months, in the acute stages of these diseases, and suggests its use in analogous inflammations of other mucous surfaces.—*Jour. de Méd. et de Chir. Prat.*, Feb., 1867.

ART. XIX.—*Loganiaceæ—the Strychnine Family.* By DR. J. M. BIGELOW, of Detroit.

GENERA.	SPECIES.
Mitreola	1
Polypremum	1
Buddlea	4
Emorya	1
Spigelia	1
Gelseminum	1
6	9

THIS small order of plants is nearly all tropical; a few outlying species are inhabitants of America and New Holland, but these also affect a warm climate. The relationship of this family by gradual approximation to Dogbanes in one direction, and Figworts in another, is well marked; while its affinities with Gentianworts on the one hand and Rubiaceæ or Cinchonads on the other, are so varied and obscure, as to render the fixation of their true limits a difficult task. This is made very apparent by the diversity of opinions on

their natural stations by our most celebrated botanical writers. Prof. Asa Gray groups Stellates, Cinchonads and Loganiads, as sub-orders under Rubiaceæ, which separates them quite widely from the Gential alliance, where Prof. Lindley places them immediately between Apocynaceæ and Gentianaceæ. With regard to the genera, especially those extra-topical, they have been stationed first in one place and then in another. Dr. Gray places gelseminum among the Scrofulariaceæ or Figworts, although he acknowledges it is for the want of a better place to put it, and he places Buddlea here, while Prof. Lindley arranges it among the Figworts. Mitreola, which truly belongs here, is placed among the Gentian worts by Prof. Lindley. As its affinities indicate, many of the plants of this family possess the most active poisonous properties. The powerful effects of strychnine obtained from a member of this family are too well known to require mention. The terrible Woorari poison is obtained from Strychnos toxifera, and the Strychnos tieute is another, producing effects the most frightful. Some of these, though so powerfully poisonous, form very useful medicines when judiciously exhibited and graduated in proper doses. The well known anthelmintic, Carolina pink, (Spigelia Marilandica), belongs to this family. Besides its anthelmintic properties, this drug has been long known to produce narcotic effects, such as dimness of sight, giddiness, dilatation of the pupils, muscular spasms, convulsions, and even death, when given in inordinate doses. Although its use has hitherto been confined pricipally to its vermifugal powers with children, yet I am informed by a practitioner of this city, that he has used it to control the excessive action of the heart, in organic diseases of that viscus, with more prompt success than with any other article of the materia medica. His doses are ten to fifteen drops of the saturated tincture. He considers it far superior to Veratrum viride, Gelseminum, Digatalis, Lycopus, etc., in its sedative effects upon the circulation of the blood. It is probable, however, that it is in symptomatic diseases of the heart that it will be found best adapted. From its botanical affinities such properties might be logically inferred, independently of what we know from experience. The botanical affinities of Gelseminum sempervirens are also very obscure. Willdenow Rafinesque and Dr. Porcher place it among the Bignoniaceæ; Dr. Torrey early placed it among the Dogbanes; Lindley and Burnett both inadvertently overlook it; Dr. Gray places it after Scrofulariaceæ; Dr. Riddell, of New Orleans, is the first to place it among the Loganiacæ. It is an acrid narcotic poison, very similar in its effects to poisonous doses of Spigelia. It has frequently been experimented with in killing dogs and cats. The Dogbanes to which the Gelseminum is so closely allied, is one of the most suspicious of the whole vegetable kingdom. Lindley says that for the most part they are plants of considerable beauty, with large gay colored showy flowers; but, notwithstanding their beauty, in many cases they are venomous and very generally to be suspected. Among the true poisons, Tanghinia venenifera—a plant of this family—stands foremost. The kernel of the fruit, though not larger than an almond, is sufficient to destroy twenty persons. Among the savages of Madagascar it was at one time used as an ordeal of guilt or innocence. The well known and beautiful Oleander, an ornament in almost every household, belongs also to this family, and although

not generally known as such, is a powerful poison. Lindley quotes, that in 1809, when the French troops were lying before Madrid, some of the soldiers from a marauding party brought back such provisions as they could find. One soldier formed the unfortunate idea of cutting the branches of the Oleander for spits and skewers for the meat when roasting. This tree, it may be observed, is very common in Spain, and attains considerable size. The wood having been stripped of its bark, and brought in contact with the meat, was productive of the most direful consequences; for of twelve soldiers who ate of the roast seven died, and the other five were dangerously ill. Burnett also testifies to their extreme activity as deleterious poisons. He says the plants contained in this sub-type, Apocynideæ, are remarkable for the activity of the principles they elaborate; but very few of them being innocuous. He then enumerates a dozen genera, nearly all of which are active poisons. The seeds of the Cerbera, with their milky sap, appear to be second to none in their energy as poisons; to their virulence, indeed, their generic name alludes, for their touch is as surely fatal as the bite of Cerberus was feigned to be. Christison, among other eminent toxicologists, in experimenting with the effects of strychnine upon animals, finds that its activity is much enhanced by the manner of exhibiting it. Thus it is well known that, when injected into a wound, or vein, it acts much more rapidly and energetically than in any other manner. This fact should be remembered, as it may explain why the poison may sometimes appear comparatively inert when taken into the stomach. The best essay upon the medicinal and alterative effects of Gelseminum we find in *Tilden's Journal of the Materia Medica*, December, 1861, written by Dr. Charles A Lee. He shows that it is a most valuable article in various diseases depending upon derangement of the nervous system, as well as in fevers. It is well worth the attention of every physician who seeks and desires the progress of medical science. A great deal of twaddle has also been written by the homeopathists upon this medicine, but (excepting their details of experiments in poisonous doses upon dogs, which are intereeting) it amounts to little or nothing. A sad occurrence of a fatal case of poisoning by the Gelseminum sempervirens happened in this city only a few years ago, a brief review of which gives point to the present inquiry in relation to the properties of these plants and their allies. The unfortunate case occurred in the family of Dr. Lodge, a homœpathist physician of this city. From some cause—probably from witnessing its non-effect homœpathically—the Doctor had imbibed the idea that the medicine prepared from the dry root was inert, and accordingly he commenced experimenting in his own family to test the fact. His tincture was made double the strength of the usual preparation, notwithstanding the assertion of a witness—Dr. Hale— that it was much weaker than the usual tincture. The effects of small doses upon himself and family were sufficiently marked and energetic to caution him against the danger of giving it in larger doses.

In his testimony before the Coroner's Court he says his daughter voluntarily took a second dose without injury, but it is very probable that the effects of the first dose had partially subsided before the second was taken; and, besides, all she took in the aggregate amount-

ed to very little more than that given to the one in whom it resulted fatally.

This may also be partially explained by the well known fact that narcotic substances, such as alcohol, tobacco, opium, etc., exhibit two opposite effects in the different stages of their manifestation. 1st, the stimulating, which is longer or shorter according to the drug, and the amount used. 2d, the stupefying and depressing effects upon the nervous system (proper narcotism), which are also remarkably modified by the peculiar narcotic exhibited. Now it is well known that the poisonous or depressing effects of alcohol (the effects of the poison with which we are best acquainted) are often relieved by the repetition of the dose, so as to have the stimulating, counteract the depressing effect. Another feature in this case is very interesting and instructive, if studied from a proper stand point. Both the unfortunate doctor who exhibited the drug, and his associates as professional witnesses were apparently astounded by the fact of death, resulting from so diminutive a dose, leading themselves and others thereby to believe that some hidden disease was the cause, but the *post-mortem* disclosed no cause of that kind. If they would remember how Christison, by injections into the circulating fluids, killed his dogs, cats and rabbits, in experimenting upon the effects of strychnine, they would cease to be astonished, because all physicians know that abrasions of the mucous surface of the mouth, throat and stomach, are almost of daily occurrence, and exist, when the system is otherwise in a perfectly healthy condition. Therefore, when acro-narcotic poisons come in contact with these abraded surfaces, and are directly absorbed into the circulatory system, it is not surprising that fatal effects should follow the exhibition of even minute doses. A knowledge of these occasional powerful effects, and the almost insuperable difficulty of determining *a priori*, when and where such heroic remedies may be given without danger, deters the prudent and educated physician from exhibiting them, except in such quantities as are known not to be poisonous, and should warn all of the danger of tampering with them. When will quacks take the lesson? A wide spread knowledge also of the fatality of ignorant experiments on the human system, would go far to correct a seeming indifference both professionally and among the people, of the importance of the study of medical botany, among even the better class of our physicians.—*Detroit Rev., Med. and Phar.*, March, 1867.

Hygiene.

Art. XX.—*The House We Live In.*

WHEN a boy, I heard a canny old surgeon say, in reference to houses, fools *build*, wise men *buy*, but wiser still *take*, he was at the time a tenant of a very convenient residence, but when obliged to turn out, he built a house for himself. It was clear then that the proverb had reference more to the pocket than to comfort or con-

venience. Can a man show himself more of a fool by constructing an edifice where and how he likes, than by tenanting another, faulty both in arrangement and position?

The majority of us, however, are unable to build in towns, where every available space is already filled up, and we are obliged to rent such dwellings as architects or contractors have devised for us: houses which are run up on the principle of making money go as far as possible, and bringing in as large an amount in the shape of interest as can be got out of the public using them. But, though often obliged to live in a dwelling we have not specially designed, there are few who do not indulge at times with building castles in the air, or fashioning mansions in the skies, in which there should be the largest amount of comfort, and the fewest possible annoyances.

In designing such a house, one naturally thinks of all the things which he grumbles at in his present abode, and of the many *desiderata* he requires. Sometimes, good fortune may so far favor him, as to give him the opportunity he seeks for, and he is enabled to exercise his skill in planning a comfortable family home.

I was once in such a condition, and amused myself by making plans today, only to alter them tomorrow; while going through my studies I met with an unexpected ally in a homœopathic physician, who was as successful in his architectural designs as if he had been both born and bred to the business. He kindly invited me to the house he had designed, and as I am somewhat cosmopolitan in my notions, and can enjoy social converse with those who differ from me in certain points, I accepted the invitation. The day was bitterly cold, and the walk from the adjoining railway station was through snow up to our knees. As an habitual sufferer from cold feet, visions of misery haunted me, and I feared that physical suffering would prevent mental enjoyment. My fears were vain, exercise kept me warm until we reached the door; and when once inside I forgot all about the cold I had gone through.

Let me describe in as few words as possible the characteristics of the house. The kitchen was near the dining-room, the front door and the heating apparatus. No staircase was to be seen. The drawing-room was large enough for a ball or concert-room, and the sitting-rooms opened into each other and the staircase. The bedrooms were all furnished with a ventilating apparatus in the ceiling, and communicated with a main shaft, along which a draft was produced by its opening just under the kitchen fire. This ventilating apparatus could be regulated at will by means of openings in or above the door, and a shutter to open or close the aperture in the ceiling. Another shaft, with openings for the different floors, communicated with the open air, and was furnished at the place of entrance with a small furnace and a serpentine arrangement of iron tubing for heating with boiling water, and a stop-cock for regulating the flow to and from the boiler, so as to keep the temperature of the heated surface at any point desired. So nicely had the servant learned to manage this, that I never once during my prolonged visit felt either too hot or too cold.

Neither before nor since have I been in a residence which seemed to be so thoroughly comfortable, and the doctor and myself were

soon at work over the plan of another. Just as mine was finished, upon paper, however, I found that I could buy a house, and circumstances almost compelling me to purchase, my plans were never carried out, and I had to put up with an ordinary brick and mortar tenement.

Though foiled in my scheme, I have not ceased to think of the conditions necessary for making a dwelling-house comfortable and healthy. The main requisites are, I think, that it shall be dry, airy, warm, and free from "smoking chimneys."

To be dry, a house should, of course, be well drained. It should also be free from the close vicinity of overshadowing trees. A country mansion or a lowly cottage embowered in woods is picturesque to the eye of the artist, and suggestive of love and domestic felicity to the imagination of the poet; but in stern reality it is too often the abode of rheumatism and ill-health, and its floors are favorite haunts of newts, ascards, frogs, and toads, with occasionally an intrusive snail. Preserves soon become sour, and wine is constantly sick. The chimneys usually in such places smoke abominably, and during the cold days of winter no amount of fire seems to give warmth.

To overcome such a state of things some plan of heating the entering air must be adopted, and pans of common quick lime kept in the dampest spots. The most effectual cure, however, is to cut down the trees. But there is another way by which a residence may be damp—*i. e.*, by daily, or at any rate by frequent washing. In days gone by the floating homes of our seamen were scoured daily, under the idea that as cleanliness was next to godliness, a good scrub of the floors would compensate for the profanity so common then in the navy. The result was, that disease was so common as to attract the attention of parliament, and if I recollect rightly, a commission was issued, one of whose recommendations was that the use of water in washing the covered decks was to be done away with. The advice was followed, and an immediate improvement was noticed. Prejudice might, however, induce an active-minded English matron to deride the experience of great he-fellows in ships: we will, therefore, give from memory, an account of Dr. Copeland's experience. He was, he tells us, consulted by a lady respecting the prevalence of scrofula in her school. She had been very successful as a teacher, and was particularly anxious to do her duty, as a mother, to those under her care. She fed her flock on the best, and lodged them in the cleanest and airiest of beds and chambers. The doctor inspected everything, and was at a loss to account for the frequency of the complaint, or suggest a remedy; everything inside and out seemed *en règle*. A casual remark of his upon the whiteness of the boards, where they were visible, elicited the information that all in the house were washed daily. The sagacious physician at once detected the flaw, and reccommended an almost total abstinence from the use of the pail. His advice was followed, and the scholars became as conspicuous for their health as they had previously been for the reverse.

Two or three days ago, I was myself consulted in a bad case of scrofula in a fine-looking young woman of twenty-one, who had suffered from it for many years, and I could trace it to no other cause than her mother's strong propensity to have the music of scouring daily in her ears.

Let housewives learn hence that an excess of cleanliness is prejudicial to health, rather than a means of ensuring its continuance, and to indulge ourselves in the whim of being *mal à propos*, let us recommend them also to notice that whenever a change of air is recommended for the cure of diseases which are allied to scrofula, they should, where possible, select some spot built on sand or gravel, and not embowered in woods.

The next point about a house is, that it should be airy.

Rooms heated by fire and gas, and kept as closely as possible from draughts, are the most fertile source of "colds;" I know it from prolonged experience. For many a night have I faced a cold rain or moist wind when going to and from our medical school to deliver my winter course of lectures, and have come back to a cozy arm chair in a snug study, heated by a jolly fire, and blazing with gas, only to find that I had somehow or other caught another nasty cold.

The sudden change from moist cold to dry heat will make the healthy catarrhal, while the change from a heated room to a cold passage or bed-room, will make a sickly patient worse.

When speaking of airiness, I do not mean individuals to encourage draughts of cold air about their persons, nor can I recommend them to do as a medical friend of mine is said to do, viz., open the windows of the bed-room at night to get the fresh country air, which the town smoke vitiates during the day, so as to make it too impure for use. There may be differences of opinion on the subject amongst those who observe little, but, amongst those who do more, the belief is entertained that warm air moderately impure (as in a closed bed-room where two or more are sleeping) is less noxious to the invalid and those whose health is shaky, than is cold air and absolute purity. The purity does not counterbalance the effect of the chill. Of this, more anon.

It will be asked, and naturally too, how can you prevent an airy house from being cold during the winter. The answer is simple: all the air which enters should be warmed. I have lived in a house, where during the coldest day in a very frosty winter, it was a matter of indifference whether the door of the sitting room was open or shut, and during the time of that residence, colds were almost unknown in the domicil.

Of the value of the heating apparatus the following case is an example: Mrs. ——, a lady living in the country, in a comfortable old-fashioned house, of active habits, and surrounded with luxuries, began to suffer from sneezing. As soon as she left the bed-room the fits began and continued with scarcely two minutes interval throughout the day. Her doctors could not cure her, nor did she find any relief until she reached a warmer atmosphere than that she had been breathing. Warned by a recurrence of the attack the following winter, the husband introduced a heating apparatus into the dwelling, and with its aid he was able to enjoy his wife's presence in person rather than through the medium of the post-office. Similar instances will be given in our chapter on the value of heat.

The value of airiness and the necessity for *warm*-airiness being once acknowledged, it becomes a matter for consideration how the *desideratum* is to be attained. This will become a question for the architect or the builder more frequently than for the physician. I

will content myself with noting one contrivance only which can be adopted in any town—viz., let there be in the hall or in any other convenient space a gas stove, and let it communicate below with a tin or other tube of large dimensions, which opens into the outward air. Never mind the gaseous products; theoretically they may be prejudicial; by this method they are practically harmless. In Italy, churches and galleries are warmed by braziers of charcoal, and so long as there is circulation of air no bad effect is to be noticed. The influence of gas and charcoal on air is chiefly perceptible and prejudicial, when it consumes the air we breathe as well as heats it. A gas stove without a feed pipe from the outer air does the one; with such a pipe it introduces far more fresh air than it can by possibility consume.

Lastly, if possible, the house should be without smoky chimneys. Respecting this we might write a dissertation, but we will content ourselves with a few observations. There cannot be a current up a chimney unless there be ingress, egress, and material to flow. It is clear that if stagnant air, or still worse, a back bounce from a neighbouring house, does not allow the smoke to get away from the top of the chimney, it will not flow along the flue. Equally clear is it that, if the doors and windows as so closed and the floor so pasted over with paper as to protect the carpet from being frayed unequally, no air can enter the room at all, and there can be no current up the chimney, even if the egress at the top be free.

It is equally clear if there are five fires in a house all burning at once, that air enough must be found to go up five chimneys. If, then, the doors and windows of the dwelling be so closely shut that little air can come through the crannies, it is clear that the requisite air must come down some chimney, and the chimney it comes down may be one in use for an upcast. An easy method of overcoming this difficulty is by carrying a tube behind the skirting board from the outer wall to the fire-place, where it may open by an ornamental stopper. Each chimney, however, requires a separate study, and we must leave much to the ingenuity of our readers.

Of the minor comforts requisite in a house we need not speak. If, in conclusion, we were asked to name which of those we have spoken of as necessary we could consent to forego, we should add first airiness, secondly dryness. The most important would be warmth and a ready egress up the chimney for the air consumed. And if still farther we were asked the temperature most desirable to be kept up, should say 64° of Fahrenheit's thermometer.

What is true of dwelling-houses applies equally to hospitals, asylums, work-houses, prisons, stables, cow-houses, and to whatever building living warm-blooded beings inhabit. Even a cat likes a warm chimney corner, and the dog basks in the sunshine; surely, therefore, we should let our young folks and old enjoy the same comfort which Providence ensures to the brute. The home of a rabbit ought not to be more comfortable than the home of a man, nor should a bedroom be as comfortless as a lodging upon the cold ground.—*Med. Mirror*, (London) Jany., 1867.

ART. XXI.—*Change of Air.*

AMONGST the many fluctuations of Medical opinion, we have met with few more curious than an opinion just brought under our notice on the value of change of air in disease, especially in phthisis. The author, Dr. J. C. Atkinson, not only sets aside change of air, in its usual sense, as a remedy for consumption, but in a wholesale way proclaims against the prevailing fashion of change, and change, and change again, with much force and, we may say, with much sense. Dr. Atkinson maintains that those modifications in the animal life which follow change of air, are determined not so much by the actual character of the air, or, we had better said, the chemical constitution of the air, as by the barometrical pressure of the atmosphere. He contends that dry air with the least amount of atmospheric pressure may be of service, where stimulation is required, but that in consumption (we suppose he means the third stage) the antagonistic action is the grand requirement, and that to stay the morbid action in the lungs, a moist, low, marshy situation is preferable to a high and dry situation. In short, the consumptive person demands *less* oxygen, an agent which is required in the slow pulses of scrofulous persons, but would infallibly destroy the consumptive patient, whose arterial circulation is already morbid by excessive action. We need neither endorse nor condemn these views, but we may add that they are enounced with a strong smack of common sense, and in most excellent and pleasant English. At the same time, they open a question of vast professional importance—viz., Is an indiscriminate method of crying up change of air as a panacea sound Medical action and practice?—*Medical Times and Gazette*, March 9th, 1867.

ART. XXII.—*Decrease of Population in France and New England.*

THE proposition of the Imperial Government of France to increase its army, has given rise not only to very serious political discussions, but has brought to light some very interesting statistical facts regarding the growth of population of that country—facts which would show that the "great empire" has for years been undergoing a process of decay, which is a very serious obstacle to further political and social progress.

The main fact, thus brought to light, is that there has been a steady decline of growth of the population of France, as compared to other European nations; and so marked has been this decline, that a Paris journal expresses a fear that the period will soon arrive, when the annual increase of population will be insufficient to balance the loss by mortality. The average number of offspring from each marriage in France, at the beginning of this century, was for the Provinces *five*, for Paris *four*. The proportion has sunk to *three* and *two* relatively. The mortality of children in France, during the first year of

life, at present is twenty per cent. The following table shows the decrease of population most markedly :

Year.	Population.	Decennial increase.	Yearly increase.
1821	30,461,875	———	———
1831	32,569,275	2,107,350	0.69
1841	34,230,178	1,660,053	0.59
1851	35,783,170	1,552,992	0.45
1861	36,717,254	935,084	0.26

The annual increase has thus declined from 0.69 to 0.26. Great Britain, on the contrary, has increased its population, since 1821, from 20,000,000 to 30,000,000, in spite of the numerous emigration, especially from Ireland. The Germans are also a much more emigratory nation than the French, yet in Prussia, the natural increase of population (not taking in that resulting from political annexation) has been 0.82.

But aside from the annual decrease of the number of births in France, a decline is shown in physical strength and stature. According to the recruiting lists during the years 1816—20, when the population had not yet reached 30,000,000 the number of young men inscribed annually was 290,000. At present with a population of 37,000,000, the number inscribed, according to the same ratio, should reach at least 348,000, but there are only 310,000. Thus, while the population is yet increasing 0.20, the number of young men, from 20 to 21 years of age, remains nearly the same.

These facts, as published by the New York *Belletristisches Journal*, in a very reliable correspondence by Mr. Blind, of London, are interesting to the student of social science and ethnology. What are the causes of this decline? The fact that the average of births to each marriage is so markedly lower in Paris, shows conclusively that city life, city habits, city luxury and effeminacy exercise a deteriorating influence upon the propagation of our race. Not only is infant mortality, beyond comparison, larger in the city than in the country, but the marriages themselves are less prolific. And this, we fear, as is also, unfortunately, the case in our large American cities, and particularly among the native poputation, is due, not so much to physiological reasons beyond control, *as to artificial means employed to prevent increase of our race.*

The decrease of the native population of New England has recently been pretty fully discussed. The astounding fact has been established, that were it not for the constant influx of foreign emigrants, the population would scarcely hold its own. In an article republished in the *Boston Med. and Surg. Journal*, from the *N. Y. Observer*, the following figures are given of an inland town in Massachusetts, which has been occupied by six generations. The first generation had an average to each family, of 9.50 ($9\frac{1}{2}$) children ; the second, 7.31 ; the third, 7.69 ; the fourth, 7.25 ; the fifth, 4.90 ; and the sixth, 2.84. We might quote statistics upon statistics, showing the same tendency to decline among the native population.

The writer of the article in the *Observer*, quoted above, says : "What cause, or causes could ever possibly bring about such disastrous results? Is it war? Is it pestilence? Is it famine? Is it disease of any kind? No ; the whole explanation may be summed up briefly under two heads : 1st, the *physical degeneracy of females ;*

and, 2nd, the settled determination among a large portion of those in in married life *to have no children, or a very limited number.*" It is gratifying that the non-professional press are taking this matter up and setting it in its true light. As total reform of female education must precede a total reform of social habits and social life, before this alarming tendency to decay can be arrested, American females must be educated more as *women*, and less as *ladies*. The absurdities and follies of extravagant fashion must be made to give way in the female mind to an understanding of the duties and the realities of life. If we wish "Americans to rule America," as has often been grandiloquently exclaimed, we must at once begin, before it is too late, to educate American women to *breed* Americans. The evil will not be remedied until they cease to consider children incumbrances.—*Med. and Surg. Rep.* (Philadelphia), Jan. 19th, 1867.

Bibliographical Record.

Transactions of the Am. Med. Association, Vol. XVII.

SIX years have elapsed since we sat down to notice the issue of one of the annual volumes of this great professional Congress. These years have been to us, as to most of our readers, years of suffering, of privation and of pain; we found but little time or disposition, during the enactment of so many scenes of crime and bloodshed which we were forced to witness, to bestow attention upon the American Medical Association, or any of the literature published by its authority. We now, however, welcome the volume again to our table, and sincerely trust future years will return each its accustomed production, but divested of the blemishes which disfigure some of those which have been lately published.

In its professional aspect the Association is still divided into sections, each one of which devotes itself to the consideration of one or more departments of medical study. One of these sections embraces Hygiene—a science little known and still less practically employed in America. The steps first necessary in the erection of Hygiene into a science have not yet been taken, at least the remark is indisputable, as it respects the great portion of this country. These initiatory movements are the collection and arrangment of vital statistics. Unless we first obtain the registry and collation of all instances of those three important events which so surely indicate the sanitary condition of a given population, we cannot by any sort of

possibility feel qualified to take measures calculated to improve its hygiene. We therefore most cordially second the movement made in the association at its last meeting, to memorialize legislatures to establish registration laws, compelling strict returns of all the births, deaths and marriages, occurring in the limits of their respective States. Of course Southern readers will understand these remarks to have a prospective bearing: to speak now of State legislative bodies in this latitude, is quite as much a satire as that just perpetrated by the Governor of a Northern State, in sending an aristocratic beggar here with a letter recommending him to the "*wealthy* families of the South."

The first report in the xvii vol. of Trans., is a very curious one. The subject is, "The relations which electricity sustains to the cause of disease." Unfortunately for science, for religion, for morals, for political establishments, for mankind generally, the point necessary to be first achieved in laying the foundation of a new theory or system of philosophy, is to tear away all superstructures, however substantial or venerable, which previously occupied the ground. Generally this is feasible; but alas! when they are toppled to the earth, does the promised reformer prove as sure and competent an architect as leveler? Not often, and instead of a better house than the old, those who trusted him are left without home or refuge. We publish two paragraphs of Dr. Littell's report, one showing in what manner he disposes of the long received doctrines of atmospheric poison, the other showing how he intends to supply the vacuum:

"One of these baseless assumptions is the doctrine of atmospherical poisons, or miasms, as an ordinary cause of epidemic and endemic diseases; a doctrine which has become thoroughly incorporated with our literature, and forms a part of daily medical thoughts and expression. In books, in lectures, in conversation—everywhere—it is the recognized language of physicians; and those who should have the temerity to intimate a doubt of the truth of a tenet thus universally admitted, would incur no small risk of having their own sanity questioned in turn. And yet, notwithstanding this prescription and assurance, it is not hazarding very much to say, that the opinions prevalent on this subject are not only unsound, but are hardly creditable to us as members of a learned profession; because they prove that we have neither been careful observers of facts, nor been guided in our reasoning by sound principles of philosophy. It is a maxim in logic not to assign more causes for the production of any given effect than may be necessary for that purpose; a restriction we have wholly disregarded in treating of subjects which, from their connection with the important matters of human life and

health, demanded the most careful scrutiny and rigid deduction; and, ignoring the constitution of the animal frame, as well as the influence of elements analogous to the nervous force, have needlessly invented a different origin for almost every departure from the healthy state.

Modern researches have partially developed the wonderful simplicity which characterizes all the operations of nature; a divine economy, if I may so speak, is everywhere conspicuous; results the most diverse and extraordinary are produced by the combination in different proportions of a few apparently elementary bodies; and we are warranted in believing that, as our knowledge increases, this simplicity will be still more strikingly displayed. Why should not the same be true also of the animal economy? It is a complex and intricate structure; composed of many different tissues and organs, varying somewhat in their manifestations of individual life, but all subjected to the control of a central power—the brain—having innumerable prolongations conveying its subtle intelligences to and from every part; and from any morbid change in the action of which manifold deviations from a normal condition might, *à priori*, be anticipated. How much more philosophical, then, to recognize the instrumentality of a single principle of kindred subtlety and essence, evidently capable of producing such change, than unnecessarily to multiply causes, and invoke the interposition of as many agencies as there are diseases in the nosology! We have imaginary miasms—several of them supposed to be often contemporary in their existence and even to be operating simultaneously in the same individual—for the various exanthemata, for influenza, for diphtheria, for cholera, for dysentery, for each of many different kinds of fever, for whooping cough, and for every epidemic by which we are assailed! In accounting for the phlegmasiæ, it is true, we are accustomed to veil our ignorance and to flatter our vanity under the convenient and comprehensive phrase of "taking cold;" an expression, however, to which we attach no very definite ideas; and which, in its literal sense, the commonest observation shows to be incorrect in most of the cases to which it is applied.

An etiology so multiform cannot be true; and if the abnormal consequences may, in very many cases, be more rationally and satisfactorily explained through the operation of a single principle, it must be abandoned. We are erroneously taught by it to expect some diverse effect peculiar to each imaginary poison; whereas the diversity and the peculiarity reside not in the external agent, but in the different tissues and organs of the system acted upon. The poisons thus falsely believed to be admitted into the circulation are, further, supposed to create a kind of fermentation, or change in the blood, and subsequently to break forth in various morbid manifestations. Nothing, in my judgment, is more gratuitous and unfounded. On the contrary, I believe that it is upon the nervous system, and not upon the blood, that the impression is primarily made. The blood derives and maintains its vitality through its connection with that system, with the minute ramifications of which it is everywhere brought into contact; the nervous influence it thereby receives is necessary to its healthful constitution; and when this is greatly impaired, or rudely subverted, it loses its property of coagulation, and

and falls, of course, into a state of dissolution; of which we have examples in the passive hemorrhages, purpura hemorrhagica, etc., and a very forcible illustration in the case of persons killed by lightning."

What an electrical shock this must be to Salisbury! Why has he not proved the existence of atmospheric poison? Did not we read that he had produced it—grown it in flowerpots, and made boys sick from crops of his own cultivation? We regret that time is not allowed us to examine the various reports more critically. There is one from J. J. Woodward, M. D., Assistant Surgeon U. S. A., on the "Causes and Pathology of Pyæmia," which we suppose to possess interest. We can only quote Ass't. Surg. Woodward's definition of Pyæmia:

"The affection to be considered is a peculiar constitutional condition, which may come on after wounds and operations, during puerperal convalescence, or the progress of certain diseases; which is characterized by febrile symptoms of a typhous character, and in fatal cases is frequently accompanied by multiple abscesses, by gangrenous foci, or by patches of parenchymatous congestion and degeneration, though, indeed, these local phenomena are far from being uniformly present."

The reader will find a report on diphtheria, and one on "Spotted Fever, so-called." We have read the latter report with much interest, and can speak of it as instructive and well prepared. There is likewise a very elaborately gotten up report by Dr. Lee, of Philadelphia, on "Correct Principles of Treatment for Angular Curvature of the Spine." The reporter takes strong grounds in favor of mechanical means of support, and illustrates, by engravings, the various instruments he employs. Dr. Lee relates several cases of cure of spinal curvature by his favorite method, illustrating one or more of them by drawings. Whenever we read a dissertation upon any subject in medicine, in which the views of the author are sustained by the citation of a group of *successful* cases chained to his triumphant car, we are disagreeably reminded of the testimonials accompanying quack advertisements. We do not wish to be understood as bringing such an accusation against Dr. Lee, but the analogy suggests a pardonable suspicion. It is getting to be too common, and ought to be frowned down in the profession, this habit of writing upon a specialty, and adducing, from private practice, the fortunate cases which have occurred under the author's observation. Many of the late European monographs possess this fault to a damaging extent.

The prize essay upon Digitalin is really a most admirable paper. We reprint two extracts, with which our experience and observation perfectly accord:

"A remedy acting so powerfully upon the heart as digitalin does, must be of essential service in diseases of that organ; and we find that in all those diseases where there is tumultuous excitement of the heart, or too great force or velocity of the circulation, the digitalin may be used with a view to lessen the heart's action. In pericardial and endocardial disorders, the heart frequently beats more frequently, though less powerfully, than would be supposed from a mere superficial examination, and yet it is in these very disorders that digitalin is found of such essential service. We are told that where the pulse is feeble, digitalin is contra-indicated, and yet, in nearly all endocardial disorders, the pulse, though very frequent, is feeble and easily compressible. When carefully given in these disordered conditions, digitalin nearly always lessens the frequency, but increases the force of the heart's pulsations. In these disorders, we should administer small and frequently repeated doses; we seek the pure sedative action of the medicine, and we should give it in doses merely sufficient to subdue undue nervous excitement of the heart, and not in such large doses as to derange nervous force. In endocardial disorders, if used in excessive doses, it causes nausea and vomiting, a rapid and irregular pulse, headache, vertigo, hurried respiration, irritability of the mucous membrane of the stomach, and subsequent disturbance of digestion, and these are all but results of derangement of the various branches of the vagus. In endocardial disorders, when given in small doses, carefully watching its effects upon the pulse, and giving with it some warm diluents, I have seen a a very powerful diaphoretic and diuretic action produced, and yet I should not argue from these effects, that it was either diaphoretic or diuretic, but only that the excessive and undue excitement had so deranged the nervous system, that reaction followed to restore equilibrium.

The effects of digitalis in producing irregularity of the heart's action have been but little noticed by those who have written upon the action of this medicine; and yet, in nearly all instances where it is given to its proper medicinal action, the heart becomes irregular, both in the frequency and force of its pulsations within short periods of time. Another effect is frequently produced—the heart's pulsations become intermittent. For example: watch the pulse carefully for five minutes, and it will be found that during no following minutes of that period does the heart beat with an equal number of pulsations; periods of intermittency also occur, skipping one beat in every eight or ten; the pulse then again becomes regular for many beats, and again an intermission occurs every three or four beats. These actions require to be very closely watched, and a mere casual observation of the pulse will hardly detect them; the stethoscope should be used.

Digitalin, when administered to persons in health, does not produce its effects so quickly as when given to those suffering with cardiac difficulties; even in functional disturbances, caused by dyspep-

tic or other troubles, the heart is effected earlier and more markedly than in a perfectly healthy state.

Next in importance to its action on the vascular system is its diuretic action, and although it is frequently given for its diuretic action alone, it probably owes this action almost entirely to its weakening the force of the heart, diminishing the pressure on the vascular system, relieving its irritability, and thus enabling the kidneys better to perform their functions. Although in many disorders, and in deranged conditions of the system, as in dropsy, for instance, digitalin is one of the best diuretics we possess, we cannot, I think, strictly call it a diuretic *sui generis*. Its diuretic action is only a sequence of, and dependent upon its special sedative action upon the vascular system; antimony and veratrum viride, upon the same principle, are quite as good diuretics, in many instances, and occasionally aconite is equally efficacious."

Especially has it been a point of frequent repetition with us, to impress upon those whom it has been our lot to instruct, the opinions advanced in the following paragraph:

"One of the most important points in discussing the effect of digitalin, is to carefully consider and give full attention to its so-called *cumulative action*. There are many who will not use this plant, nor any of its preparations, for fear that they will be overtaken by this dreaded *cumulative action*. I was educated in the full faith of this dreaded effect, and my most excellent preceptor, Prof. Beck, acknowledged to me that he had never given digitalis to its full medicinal effect, for fear the *cumulative action* would carry away his patient. Our materia medicas are to this day full of labored cautions against cumulative action; and yet, in all my practice, I have never once seen this effect, nor can I find an individual who has. Bad doctrines, like bad morals, are hard to be eradicated."

We would now willingly conclude our hasty remarks about this volume, if mingled feelings of duty and indignation did not call upon us to notice the social and political aspect of this last meeting, as far as it has been reflected in the published transactions. Our readers all know that, at these large professional assemblages, it must of necessity occur that men of all forms of Christian religion, or without religious belief at all, and all shades of political opinion, classifiable or enumerable, in this vast chaotic Babel of Politics, are thrown in temporary contact with each other. Heretofore it has been customary to taboo political discussions; and the idea of making, in open session of the convention, what his Political Reverence, Dr. Breckinridge, calls a "deliverance" on the subject, had not seemed to enter the brain of the most bigoted fanatic from that soil so prolific of false-*isms*. But since the inception of the war, tolerance and polite-

ness have lost rule, and now the speech of welcome, which even aboriginal delicacy was wont to frame in such shape as to please the visitor—even this must contain unpleasant allusions to the recent bloody conflict between the sections. But we beg pardon for the above fling at the New Englanders. The salutatory we criticise was from a Marylander, for aught we know a fresh proselyte to Simon-pure patriotism! If our memory serves us rightly, this welcome to his hospitality contains a reference to "the struggle for the nation's life, since so successfully achieved." We do not know upon what particular set of *symptoms* he bases his favorable *prognosis* in regard to the "nation's life." We know many persons obtuse enough to suppose his patient's life not yet out of danger. Indeed, candor would oblige us to add, that they go still further and say that, if this life is not taken out of the hands of the selfish and despicable quacks, to whose care it is now subject, the issue is not even doubtful. Such expressions, coming from the chairman of a committee appointed to welcome delegates to a purely scientific congress, are coarse and in bad taste. Our contempt for those who have so bitterly hated, and, as we think, so unjustly and impiously injured us, compels the use of stronger language, and we add, that such remarks, in such connection, are insulting to those Southerners who retain the only unmutilated possession which is left us to enjoy in common—that of self-respect. Many people of our acquaintance cannot rid themselves of a suspicion which the conduct of the speaker's own party strengthens day by day, that the majority of those who held winning cards in the late contest cared infinitely less about the "nation's life" than they did about the plunder and untold millions of stolen booty which somehow got mixed in the programme of saving the "nations's life." Scores and, it may be, hundreds of physicians have been despoiled of libraries and instruments by these immaculate patriots who are so noisy about saving the "nation's life," and thousands in this latitude well know that, in accepting hospitality in certain sections of the North, blind chance might so order that the ice-cream they ate would have its flavor improved by being served with utensils long since familiar to their lips.

Let us dismiss this disagreeable subject. We have heard the declamatory "Alliteration" above alluded to in former days, and do most earnestly congratulate ourselves that we did *not* hear the oration referred to.

We personally know the gentleman elected President of the Asso-

ciation at its last meeting, and with pleasure assure our readers that, in so far as his influence is paramount, an attendance upon the coming session will be, as far as may be practicable, divested of everything unpleasant to those of us whose lips are not yet dry of the bitter dregs we have been compelled to drain, at the hands of those sectionalists who now seek to suborn the American Medical Association to their partisan purposes.

Researches upon Spurious Vaccination; or the Abnormal Phenomena accompanying and following Vaccination in the Confederate Army during the recent American Civil War, 1861–1865. By Joseph Jones, M. D., Professor of Physiology and Pathology, University of Nashville. Pamphlet, pp. 132.

The author is personally known to us as one of the most persevering, energetic and laborious members of our profession. Enjoying as he did the confidence of the Surgeon General, his labors were not confined to a single hospital post, but, on the contrary, he had the widest latitude given him to use at his option.

The merits of the little work in question I conceive will be better understood and appreciated by a reference to its table of contents, of which the following is a copy.

Section 1.—Preliminary observations; accidents attending vaccination amongst the citizens and soldiers of the Confederate States; necessity for the investigation; method, extent and object of the enquiry. The injurious effects of vaccination referred to six causes. Circular letters addressed to the medical officers of the late Confederate Army. Facts illustrating the value of vaccination, and the fatality of small pox. Description of small pox, by Sir Mathew Hale. Dr. Jenner pointed out some causes of the accidents attending vaccination and gave rules for their avoidance.

Section 2.—Modification, alteration and degeneration of the vaccine vesicle, dependent upon depressed and deranged forces, resulting from fatigue, exposure and poor diet; and upon an impoverished, vitiated and scorbutic condition of the blood of the patients vaccinated and yielding vaccine matter. In scorbutic patients all injuries of the skin tend to form ulcers of an unhealthy character. Effects of scurvy upon the character and progress of the vaccine vesicle. Investigation upon the effects of vaccination amongst the Federal prisoners confined in Camp Sumpter, Andersonville, Ga. Examination of the charge urged by the United States Military Commission, that

the Confederate Surgeons deliberately poisoned or destroyed the Federal prisoners at Andersonville with poisonous vaccine matter. Dr. Hamilton on spurious vaccination in the United States Army. Dr. L. Guild on the Medical Records of the Army of Northern Virginia. Reports on spurious vaccination in the Confederate Army, by I. E. Habersham, M. D., of Augusta, Ga.

Section 3.—The employment of matter from pustules or ulcers which had deviated from the regular and normal course of development of the vaccine vesicle; such deviation or imperfection in the vaccine disease and pustule being due mainly to previous vaccination; and the existence of some eruptive disease at the time of vaccination; or, in other words, in the employment of matter from patients who had been previously vaccinated and were partially protected, or who were affected with some skin disease at the time of the insertion of the vaccine virus. Prof. Paul F. Eve on spurious vaccination. Dr. R. D. Hamilton, of Chattanooga, on spurious vaccination amongst the Confederate forces serving in East Tennessee. Investigations of Dr. Edward Jenner, on the varieties and modifications of the vaccine disease. Answer to Dr. Jenner's enquiries, by the Rector of Lockhamstead. Observations of Dr. James Davis, of Columbia, South Carolina, on the vaccine and varioloid diseases. Examination of the doctrine of John Hunter, on diseased actions as being incompatible with each other. Relations of the vaccine disease to measles and other diseases, with the observations of numerous authors.

Section 4.—Dried vaccine lymph, or scabs, in which decomposition has been excited by carrying the matter about the person for a length of time, and thus subjecting it to a warm moist atmosphere.

Section 5.—The mingling of vaccine virus with that of the small pox. Matter taken from those who were vaccinated while they were laboring under the action of the poison of small pox was capable of producing a modified variola, and comparatively mild disease in the inoculated, and was capable of communicating by effluvia, small pox in its worst character to the unprotected. Observations of Drs. Jenner, Woodville, Adams, Willan, Gregory, Hennen, Fowler and Bousquet, upon the relations of the vaccine disease and small pox.

Section 6.—Dried vaccine lymph and scabs, from patients who had suffered with erysipelas during the progress of the vaccine disease, or whose systems were in a depressed state from improper diet, bad ventilation, and the exhalations from typhoid fever, erysipelas, hospital gangrene, pyæmia, and offensive suppurating wounds. Dr.

Wm. Gerdner, of Green County, Tenn., on the relations of erysipelas to vaccination. Cases of erysipelas following vaccination. Views of Dr. Paul F. Eve on the possibility of inoculating erysipelas by vaccination. Dr. J. C. Nott, of Mobile, Ala., on erysipelas. Report of Dr. J. F. Bell, of Virginia. Report of Dr. Hunter McGuire, of Virginia.

Section 7.—Fresh and dried vaccine lymph and scabs from patients suffering with secondary or constitutional syphilis at the time and during the process of vaccination and the vaccine disease. Prof. S. M. Bemiss, M. D., of New Orleans, on the relations of syphilis to spurious vaccination. Prof. Eve, Drs. Kratz, Fuqua, Ramsey, Crawford, Percival, Stout, Woodward and Hubbard, on the relations of syphilis to spurious vaccination. Discussion of the relations of secondary or constitutional syphilis to vaccination. The possibility of communicating tubercle and cancer, by inoculation. The possibility of communicating secondary or constitutional syphilis, by inoculation. Testimony of Torella, 1498; William Clowes, 1637; Gideon Harvey, 1665; Daniel Turner, 1717; John Hunter, 1776; and of Drs. Duncan, Watson, Hamerton, Egan, Price, Rizzi, Waller and others, on the contagiousness of secondary syphilis, the possibility of communicating constitutional syphilis through the medium of the vaccine virus. Testimony of M. Viennois, Drs. Pacchiotti, Marone, Pogal and De-Paul.

This concludes the table of contents of this valuable little work, which will be constantly increasing its pages, and hence growing more and more instructive, as the following circular letter becomes more widely known:

North Vine St., Nashville, Tenn., 1866.

Dear Sir—I am at present engaged in drawing up a monograph upon "Spurious Vaccination," and "Modified Inoculation." In this paper, which will be published at an early day, I will endeavor to do full justice to the valuable labors of Confederate surgeons. In the circumscribed and distressed condition of the Southern States, cut off from the surrounding world, with the necessity of vaccinating the entire male population capable of bearing arms, and without any means of obtaining fresh and reliable matter outside of the Confederate States, the experience of the medical officers of the Confederate Army possesses a high and peculiar value. I shall be glad to receive from you a communication, setting forth your views at length upon the nature and value of modified inoculation, and

upon the nature and causes of the accidents resulting from vaccination ("spurious vaccination") in the Confederate army.

The subject of the transmission of syphilis through the medium of the vaccine virus, should be carefully discussed, and all conclusions should be supported by carefully recorded facts and cases. One well reported case, proving the transmission of constitutional syphilis, or any other disease, as erysipelas, by vaccination, is worth large volumes of mere opinions and assertions.

We should exercise the utmost caution in discussing the value of vaccination, and the causes of the accidents which have tended of late to bring it into disrepute with the public; for all conscientious physicians and lovers of mankind will agree that this question is interesting, not only to the physiologist and medical practitioner, but that it concerns every community on the earth, and comes home to every individual of the human race. It has been well said, by a writer who was not a medical man, "It is difficult to conceive that there should be one being who would not be affected by its decision, either in his own person, or by those of his nearest connections. To the bulk of mankind wars and revolutions are things of infinitely less importance; and even to those who busy themselves in the tumult of public affairs, it may be doubted whether anything can occur that will command so powerful and permanent an interest, since there are few to whom fame or freedom can be so intimately and constantly precious as personal safety and domestic affection."

It is important that we should carefully distinguish the accidents which result from carelessness in the selection of the matter, and from ignorance of the true character and progress of the vaccine disease.

You will oblige me by answering at an early day, and also by forwarding the address of any physicians who have made this subject a special study, and who have recorded trustworthy observations.

Very respectfully yours,

JOSEPH JONES.

We take this occasion to briefly express our judgment on the subject of "spurious vaccination." Our opportunities have been unusually good, having been Inspector of Vaccination for the Ocmulgee Hospital, post of Macon, Ga.

We associate much pride and satisfaction in the fact that, although we have personally vaccinated more than two thousand persons during the late revolution, not a single one from this large number ran other than its legitimate normal course. We never inserted the

floating virus so extensively resorted to, but insisted upon knowing something of the action of the material we employed, always in advance of its use.

The ordinary discharges from a healthy wound, if inserted in the arm or leg, after the manner of vaccine virus, will give rise to a phagedenic ulcer. We have seen this fact repeat itself, we may say a hundred times without exaggeration.

Nurses engaged in washing perfectly healthy wounds have inoculated themselves by bringing these discharges into contact with slight abrasions existing on the hands. We have ourself been inoculated by this very material several times.

That vaccination improperly performed is occasionally a vehicle for the introduction of syphilitic taint, we firmly believe, but cannot ourself furnish a case arising in our experience to clearly establish this as a fact.

By improper vaccination let me be understood to mean the admixture of blood with the specific lymph. We will suppose a case of constitutional syphilis to be vaccinated with Jennerian virus; that it succeeds and runs its normal course. We will take the clear lymph or scab thus resulting, and insert it into the arms of healthy individuals, and, in our judgment, we do not believe that anything beyond simple vaccinia will occur. If, however, the lymph is being converted to or is already pus, a syphilitic accident may be apprehended; and again, if any of the contaminated blood be introduced with the lymph or scab, constitutional trouble may also follow in due course. The scab, if it be rubbed or taken off before it has fully matured and dried, having much which does not belong to it adhering, is likewise dangerous. Of course it would be wiser and safer not to insert matter coming from such a source.

The numerous ugly and dangerous ulcers so common among the troops and citizens of the late Confederacy, unattended by nodes, the proper syphilitic eruption, and by the syphilitic rheumatism, were not, in our judgment, due to the contamination of the specific poison of syphilis. They were the sole offspring of the introduction of matter which had once been good, but was, at the time of its insertion, in a state of putrescence and decomposition, inert for good, powerful for harm. Scabs or matter taken from sores thus produced, and vaccinations from excellent material taking on erysipelas or gangrene, thus entirely change their nature. The introduction of such matter poisons the system with material fit to breed pyæmia.

C. H. TEBAULT, M. D.,
Visiting Physician, Charity Hospital.

Watson Abridged: A Synopsis of the Lectures on the Principles and Practice of Physic, delivered at King's College, London, by THOS. WATSON, M. D., *Fellow of the Royal College of Physicians, etc. (Abridged from the last London Edition.) With a concise but complete Account of the Properties, Uses, Preparations, Doses, etc., (taken from the U. S. Dispensatory) of all the Medicines mentioned in these Lectures, and with other valuable Additions.* By JOHN J. MEYLOR, A. M., M. D. 12 mo., pp. 277. Philadelphia: Published by the Author. 1867.

WE are indebted to Dr. Meylor for a copy of this Abridgement, of which a specimen was given in our November No. from the manuscript. His aim in introducing this to the profession in this country may be seen in the following extract from the preface:

"The principal object that induced the making of this Abridgement was to afford young practitioners, who are often at a loss what to do on their first "sick call," and country and other physicians, whom numerous professional duties prevent from consulting more extended works, a convenient and expeditious means of reference in their daily rounds. Another, but not less important, object was to supply medical students, during lecture seasons, with a ready means of reading over, in a few minutes, the various subjects treated of in his daily lecture by the Professor on Practice.

The merits of this Abridgement and the advantages claimed for it are: 1, that it is of pocket-size; 2, that it contains every thing of importance to be found in the large work; 3, that the lectures, being short, can be read in a few minutes; 4, that the matter of each lecture is divided, according to the subject, into parts, by such side-heads as Symptoms, Treatment, Causes, Diagnosis, Prognosis, &c., thus rendering it easy to obtain, at a glance, any required information; 5, that, being numbered as in the large work, the lectures can readily be compared with the original; 6, that, in addition to the various tables, and the List of Poisons, their Symptoms and Treatment, it contains a short account of the Uses, Preparations, Doses (taken from the United States Dispensatory) of the many medicines mentioned in the work."

The size of the volume gives it an additional advantage for country practitioners, that it can be taken in the pocket and read during the waiting period of a protracted visit. Thus it might be valuable by way of reference or a relief from tedium. The convenience of such a *multum in parvo* to students "cramming" for examination, must strike their discerning minds and make it a treasure in their time of need.

Of course it must not be considered a substitute for the unabridged work, or other large systematic treatises on Practical Medicine, and preceptors should be careful not to put it in the hands of their students.

As to the merits of the Abridgement, we consider the work well done and all that is claimed for it by the American Author, which is sufficient recommendation.

The Renewal of Life: Lectures Chiefly Clinical. By Thomas King Chambers, M. D., etc. Second American, from the fourth London edition. 8vo., pp. 646. Philadelphia: Lindsay & Blakiston. 1866.

This book consists mainly of clinical lectures, delivered before the classes in the theatre of St. Mary's Hospital School of Medicine, from 1857 to 1863.

What Prof. Chambers means by "Renewal of Life," may best be explained in his own words: "that the main point for the physician's consideration in disease is the deficiency of vital action, and that all successful medical treatment is a renewal of that vital action." * * * *

"To speak, therefore, of 'a superabundance of life,' or of an 'excess of vital action,' is a contradiction in terms. There cannot be too active a metamorphosis of the tissues into their complete form, for the fresher their organic constituents, the more serviceable they are, and the longer duration they have before them. There cannot be too close an adherence to that typical form which it is the business of metamorphosis to keep up, any more than there can be too exact an obedience to law and order.

"The most active metamorphosis of the body possible, the highest possible development of life in every part is Health.

"The complete cessation of metamorphosis is Death.

"The partial cessation, or the exhibition of materials in an incomplete form, however copious they may be, is Disease.

"In death, the flesh goes on being decomposed as during life; but not being renewed, the form is lost entirely. In disease, decomposition goes on, but renewal flags; the incomplete tissues are retained as part of the imperfect body—a sort of 'death in life'—and are rightly termed by the pathologist, 'degenerate.' They are generated, but not *re*-generated; they are generated in an inferior mould of form."

Of the general merits of these lectures, we feel bound to express our high commendation. They are eminently practical, written in a style familiar—almost colloquial—clear and forcible, abounding in apt illustrations and very readable. One is reminded of the charming lectures of Watson, which are still the delight of students; though this work is different in plan and more limited in scope.

Here we will remark that we find no more reason why medical works should be the heaviest of all reading, than that religion should

require one to wear a solemn countenance. Clothe Science in fair speech; endow her with pleasing address; mingle the *utile dulci;* let her sometimes speak to the tastes and sensibilities of her followers; she will then be no gorgon to change their hearts to stone, when eyes, long heavy with dull weariness, turn to behold her.

But while praising Dr. Chambers' rhetoric, we regret having to find fault with his grammar. Is he authorized to introduce such strangers into the family of English as *albuminuriacs, mucogenous, typh* and *typh-fever?* He is guilty, too, of bad syntax, in many instances. To illustrate: speaking of pneumonia, he remarks—"for of all unfortunate complications, there is none so bad as looseness of the bowels." Probably he does not intend to, as he certainly does, exclude diarrhœa from the complications of pneumonia. If it be said that this is not a proper place to notice such errors, we answer that they will be criticised in none but the medical journals, and that medical writers ought to use as good English as any others.

Having done with this point, we are sorry to observe this gross inadvertence on page 54: "The majority of our medicines are intended to act on mucous membrane, and all are introduced into the body through it."

He devotes a chapter to the consideration of alcohol, and we give his views on this interesting subject some notice. From experiments in the administration of alcoholic stimulants to patients in hospital, varied as to time and quantity, he arrives at some practical conclusions on their action and use. A moderate quantity, taken with food, is found to produce the following effects: (1) "Increase the quantity of urea daily excreted, and, in a much minor degree, that of the chlorides and sulphates. (2) It does not increase the aqueous part of the urine. (3) It decreases the quantity of phosphates. (4) The augmentation is temporary, and, after a time, is followed by a reduction to the normal measure, which reduction is coincident with a loss of appetite." From other observations, he says: "We may conclude that the effect of continued small doses of alcohol is to diminish vital metamorphosis, to make it irregular, and to induce, in healthy people, the necessity for crises of evacuation. Its first action is upon the stomach, enabling more food to be digested, and increasing vitality; but if advantage is not taken of this first action, its secondary effect is a diminution of vital functions in general, and of digestion among their number."

He observes that the chief source of the phosphates in the urine

must be the nervous structures, and as their excretion is diminished under the influence of alcohol, it follows that the vital metamorphosis of these structures is retarded. If there is any direct relation between these vital changes and the activity of the tissues in which they take place, it may be difficult to explain the stimulating effect of moderate alcoholic potations upon the whole nervous organism. The number of observations on which he bases his conclusions appears to be very limited, and we think that he should have extended his researches much farther before enunciating and publishing to the world doctrines of so great importance.

In his closing chapter, the author mentions his having profited by criticisms of the previous editions. We trust that he will still profit; and, should this edition be as successful as the preceding, that he will soon favor us with another and further improved one.

The Indigestions; or Diseases of the Digestive Organs Functionally treated. By Thomas King Chambers. Honorary Physician to H. R. H., the Prince of Wales, Consulting Physician and Lecturer on the Practice of Medicine at St. Mary's Hospital, etc. 8vo., pp. 287. Philadelphia: Henry C. Lea. 1867.

This is the last published work of Dr. Chambers, whose previous book, entitled "The Renewal of Life," has just been noticed. The present volume is divided into nine chapters, the first of which is devoted to an introduction of the subjects thereafter treated. The subsequent chapters are severally occupied with "Indigestion of Various Foods;" "Habits of Social Life leading to Indigestion;' "Abdominal Pains;" "Vomiting;" "Flatulence;" Diarrhœa;" "Constipation and Costiveness;" "Nervous Diseases connected with Indigestion."

Commencing with the natural history of dyspepsia, in its relation to the various aliments in general use, he next discusses its ætiology as connected with modes of life more or less artificial and, it may be added, proportionably unnatural and pernicious. Then follows a consideration of the principal morbid symptoms incident to, and complicating the principal disorder. In his chapter on the different foods, he displays a profound knowledge of the science of alimentation; and there is little doubt that, had he applied himself to cooking, whether as a useful or a fine art, he would have achieved an eminence not inferior to that of the celebrated French artist, M. Blot. At the same time there is equally little doubt that he would have

reaped pecuniary emoluments quite proportional to the dignity of the art professed by the above named *savan*, with which those of the medical art are nowise comparable. Seriously, however, the importance of dietetics cannot easily be overrated in its bearing upon the whole process of nutrition, and we thank Dr. Chambers for making it prominent.

Among the habits inducing indigestion, he first notes eating too little, one to which the people of this country have been very little addicted. It is worthy of remark that, in place of a mixed animal and vegetable diet, he sometimes recommends the decided preponderance of one and alternately the other, as being more easily assimilated. Sedentary habits, to which so many cases of dyspepsia are commonly accredited, he does not consider a fruitful cause. Tight lacing comes in here for its share of credit, as well as the shoemaker's practice of encroaching upon the abdominal cavity while sitting at work. We have neither time nor space to notice the other habits included among the exciting causes of indigestion, and must pass over the complications, simply remarking that the various manifestations which these assume he treats under their common vernacular names, and thus effectually escapes the imputation of pedantry.

This book, like his other, is abundantly illustrated with cases from his hospital and private practice. His habit of keeping a record of cases shows great perseverance and industry, and has enabled him to gather material for the instruction of his juniors, and others less observant than himself. The example is worthy of imitation by all, for the accumulations of years may often be valuable to the author, by way of reference, and by making experience an efficient teacher.

We are gratified to find that he preserves the same agreeable style as in the other work, with fewer of its faults. While displaying less ingenuity in the invention of new words, he commits fewer breaches of the rules of syntax.

On the Action of Medicines in the System. By FREDERICK WILLIAM HEADLAND, M. D., B. A., F. L. S., etc. Fifth American from the Fourth London Edition, revised and enlarged. 8vo., pp. 431. Philadelphia: Lindsay & Blakistone. 1867.

WE hail with pleasure a new edition of this work, well-known and highly appreciated by the profession in Britain and in this country. The author here incorporates the discoveries made in therapeutics

during the seven years elapsed since the previous edition; so that his book, while preserving its distinctive features unchanged, keeps pace with advancing science.

It is, doubtless, a source of satisfaction to him, that the recent discovery of an *animal quinidoine* in the human structures confirms his theory of the action of quinine. He remarks that his suggestion of the possible molecular action of remedies specifically affecting the nervous system (a theory as plausible as ingenious), "has also received much corroboration from recent researches."

We deem it quite unnecessary to enter into an analysis of a work so familiar to most of our readers, or to reiterate the praise which it has previously received on all hands. It is issued in the usual type and binding of the late publications of the above enterprising house, and in its mechanical appearance has certainly nothing to be ashamed of.

Vivisection: What it is, and what it has accomplished. By JOHN C. DALTON, M. D., Professor of Physiology, College of Physicians and Surgeons, New York. Pamphlet, pp. 40.

WE are glad to see, from the first of American physiologists, a vindication of this most valuable auxiliary in the prosecution of physiological studies. Something of the kind has been needed, to answer the senseless hue and cry raised by those perfectionists who have nothing better to do than hunt for motes in their brothers' eyes and compel the world to acknowledge how much better they are than their neighbors.

"The objections urged against vivisection are principally threefold, viz:

First, that it is cruel;

Secondly, that it is liable to uncertainty and deception; and

Thirdly, that, in point of fact, it has not led to valuable results."

The two latter objections, being capable of refutation by evidence as to matter of fact, he takes pains to answer at some length, and in our opinion, so as to satisfy every reasonable intelligent mind.

The first one he treats calmly and candidly, but very briefly. We could wish that he had given it more attention, for this is the one which will have most weight in the popular mind, and consequently the chief consideration of legislators. In a late newspaper, under the

caption of "Cruelty to Animals," we observe that the "Society for the Prevention of Cruelty to Animals," of New York, are considering the propriety of the use of chloroform in slaughter-houses. Whatever contempt the absurdity of this proposition may provoke at the present time, signifies nothing, if we but consider the growth and fruits of fanaticism in the present generation. Let this insignificant "Society" agitate stoutly and perseveringly, investing moderately and judiciously in that most remunerative of all speculations—persecution—and we may live to see it developed into a political "Party of Great Moral Ideas;" and not only vivisections of inferior animals, but all dissections of the human body, legally prohibited, and the use of anæsthetics enforced in the shambles, not forgetting the oyster saloons. As an obvious corollary, behold in the next generation an executive proclamation emancipating the weaker members of the animal creation from the predatory assaults of the stronger, followed by a legislative enactment putting all on an equality, and for the sake of security placing them in charge of the War Department. We presume that the functions of this department would then be limited to matters of a like peaceful nature, for the resistless march of Progress must have left war behind as an obsolete barbarism. In fact, then would be consummated the millennium of which the prophet wrote, and which some children of light discern already dawning. This glorious event has been reserved for the wisdom of the legislators of our land and age to determine, and they will not shrink from the responsibility.

Guide for using Medical Batteries: (Being a Compendium from his larger Work on Medical Electricity and Nervous Diseases.) Showing the most approved Apparatus, Methods and Rules for the Medical Employment of Electricity in the Treatment of Nervous Diseases. By ALFRED C. GARRATT, M. D., &c. 8 vo., pp. 180. Philadelphia: Lindsay & Blackiston. 1867.

IN the first chapter the author gives a lucid description, aided by numerous illustrations, of a great variety of electrical instruments adapted to therapeutic uses. These include a number of his own invention. The remaining chapter gives "Methods and Rules for the Medical and Surgical Employment of Electricity."

It would, of course, be impossible for the general practitioner to procure and use any considerable number of the profuse *armamentarium* spread out in this book, nor can we see the propriety of making a specialty of this particular kind of practice. The tendency

of the latter course would be to magnify it vastly beyond its true merits, and the natural result would be disappointment and disrepute of the system. Nevertheless, it is well for the profession to be more instructed in Medical Electricity, not only for its own merits, but, not less, to keep it out of the hands of quacks; and we have seen no other book so well suited to this purpose.

An enthusiastic mind might easily be carried away with the idea that the great desideratum for the relief of nervous diseases had been secured, and that henceforth the nervous system must be as docile in the hands of science as the tamed lightning has become. Experience would not fail to curtail these expectations to reasonable limits, but the cost might be too great, had each one to learn his lesson simply from his own personal experience. Though hitherto so little success has attended the application of electricity as a remedial agent, that systematic writers generally depreciate its virtues, we hope that a better selection of cases adapted to this treatment and a better knowledge of the appropriate apparatus will determine its true value; and this, we are sure, will be about midway between the ardent expectations of those who see in it a panacea for the neuroses, and the skepticism of those who place it in the same category with mesmerism.

Paris Correspondence.

Paris, Feb., 1867.

It was at Sadowa, a few days after the battle, that I presented my credentials as a volunteer surgeon, to the chief medical officer of the Prussian Army. The same kindness and courtesy with which the Prussian minister at Paris and other authorities facilitated my journey to the field of operations, were shown to me on my arrival and during my seven weeks' stay. Chief General Staff-Surgeon Grimm informed me, that the list of casualties was not then so heavy as the previous week, and my services could better be given in hospitals established near and upon the battlefields, than by going further to the front. The twenty days' war which had raised Prussia to a first class power, had left in her track to Vienna a mass of wounded—Frautenan, Galitz, Nachod, Gitschin, and Sadowa, were bloody footsteps which marked the way. In the succession of rapid victories, the surgical staff was unequal to the double duty imposed, of attending to its own wounded and those of the enemy. Volunteers came from all parts of Northern Germany, and in a short time every attention which well organized public and private charities could bestow, was liberally afforded. At different cities where the more

lightly wounded had been transported, public buildings, such as barracks, churches, colleges and work-houses, were changed into hospitals. All classes and professions were working with will and giving aid to the authorities; concentration of purpose to alleviate the suffering of friend and foe seemed to govern all, and general accord hastened the good work. Women could be seen at stations, contributing comforts to the wounded, cheering the soldier going to the front and extending politeness to the prisoner sent to the rear. Kindness did not stop there; at the bed-side in the field hospitals, Sisters of Mercy, Protestant and Catholic, were found attending all nationalities alike, enduring fatigue night after night, suffering discomforts day by day, and braving the danger of cholera-infected wards. Whenever and wherever Saxon, Bohemian, Pole, Hungarian and Venetian lay wounded together, all were Prussian to Prussia. In this late war, Bismarck, Molkte and Roon will live in brilliant types to mark the mental power of their country; but that intellectual civilization which has produced an individual moral force in the king and peasant, to treat the wounded of an enemy as their own, is a higher example for other nations to follow in future wars, and will make Prussia a power for all time.

That the severe wounds might receive more attention in the field hospitals, the more lightly wounded were sent to the rear as fast as practicable. The facility for transportation by ambulance wagons was not nearly so great as in our late war, and the farm wagons generally used were little adapted to such purposes, from their very rude construction. On the battle field the litter is the chief mode adapted for collecting and removing the wounded. In small combats this answers very well, but to give early attention by quick concentration at the infirmaries, special wagons are required in general engagements.

At Königgratz (Sadowa) this was evident, where during several days after the battle the wounded lay exposed to the influence of a summer's sun in the fields of growing grain. On this battle plain of ten or twelve miles, the little towns and villages of Horzirz, Nechanitz, Cerekvitz, Chlum, Castle of Hradek, Sadowa and others, are found. At these several points the wounded were collected in churches, castles, and private buildings. There was abundance of shelter for all; but the private dwellings being built of stone, with low ceilings, thick walls and deeply inserted windows, were little suited to afford that proper ventilation, so essential in the treatment of gunshot wounds. No medical officers or ambulance train were sent by the Austrians, and the pressure upon the Prussians for collecting the wounded of both sides made this work slow, though faithful activity was shown. The great advantage of primary amputation was thus frequently lost; and the necessity for delay on account of tumefaction, prostration and febrile action, in the majority of the heavy wounds of the lower extremities, was apparent. Besides this, an inclination to expectant surgery was manifested, which in many knee wounds was afterwards irreparable.

Although the campaign had been short, it was active, and the Austrians had been badly fed in the forced marches prior to the battle. Moreover the *physique* of the Austrians, as a rule, did not compare favorably with that of the North Germans; and their new

levies were composed, in many cases, of young and raw material, little fitted to the rapid work which had been done. Then also the *morale* of the conscript or recruit who has received a wound, is never so good as that of the veteran, who has his scars and has seen his wounds heal. In the one case, depression is with difficulty shaken off, even under the cheering words of surgeon or nurse; in the other, the necessity of taking care of himself is as apparent in the hospital, with his broken arm, as in the field, where he can shoulder his musket. To the true soldier the depression of defeat is a wound in addition to his other wounds, which retards his recovery; and this, with other causes mentioned, was effective in producing that low vitality so prevalent, and which manifested itself in pyæmia, gangrene, low diarrhœa, irritative fever, secondary hemorrhage, and sometimes typhus. Add cholera to these evils, which took off the feeble and strong, the wounded and well, and we see some of the principal causes which greatly increased the mortality.

To give an outline of the organization of the medical department, in the officers which compose it, the infirmary corps, the ambulance train and the formation of hospitals will serve as sufficient data upon which a general opinion can be based of the means used for the relief of the wounded in the Prussian service. In peace, the Medical Staff is composed of one General Staff-Surgeon, chief of the Medical Department, ranking as Colonel, in the case of the present incumbent, by courtesy, a Brigadier-General; nine General Surgeons, one in charge of each army corps, with the rank of Major; 143 Over-Staff-Surgeons, 233 Staff-Surgeons, and 466 Assistant Surgeons, with the respective grades of Captain, 1st and 2d Lieutenants. The number is necessarily increased in time of war, and such changes are made in the different appointments as exigencies in the service may require. There exists no difficulty in procuring the medical officers needed, and in finding them qualified for the military duties to which they may be assigned. In Prussia, every man by law is compelled to serve as a soldier, and the medical man is prepared for his military duties, as well as any other class in the country. In the Schleswig-Holstein war, the wise provision of the appointment of Consulting Surgeons, having the grade of the General Surgeons, was instituted; and in this war, the number was more extended. Those appointed are chosen generally from the chairs of surgery in the different Universities of the kingdom, and they are placed in charge or attached to the field or general hospitals. Thus, Lagenbeck, Middeldorpf, Busch, Wagner, Bardeleben, Esmarch, R. Valkmann, Wilhelms and others, bring into the service that constant experience which their daily duties entail, and carry back to their schools the information gained in military surgery. In peace, the battalion (1002 men) has an Over-Staff and an Ass't Surgeon; in war, a Staff-Surgeon and an Assistant. The Staff-Surgeon of the 1st battalion in the regiment has charge of the regiment, composed of three battalions, and is the Regimental Surgeon. An Over-Staff and an Assistant Surgeon are the two officers of a cavalry regiment, composed of five squadrons; and the three batteries forming the complement of artillery for a division, have attached an Over-Staff and an Ass't. Surgeon. The General and Over-Staff-Surgeons of corps and divisions are under the orders of the chief officer of these

commands. To each corps are attached three heavy and three light *lazarettes*, designated as the first, second and third divisions, and three sections in like manner numbered form a division. One Over-Staff, three Staff, and ten Ass't, Surgeons are the the officers to each division. The *attachés* to the heavy *lazarette* are five officials, having rank by courtesy, *i. e.*, three inspectors, one secretary and one paymaster, fifteen stewards, thirty-two waiters, nine sub-inspectors, three apothecaries, three cooks and washerwomen, and for the train, one lieutenant, eight non-commissioned officers, forty privates, sixty-nine horses and eleven wagons, including one for the medicines.

To each division of the light *lazerette* (composed of two infantry and one cavalry division) are one Over-Staff, four Staff and eight Assistant Surgeons. To the *lazarette* are attached one Inspector, one Secretary and Paymaster combined, eight stewards, five sub-inspectors, sixteen waiters, two cooks and washer-women; and for the train, one lieutenant, six non-commissioned officers, thirty-one privates, sixty-five horses and ten wagons, including one for medicines. The train to the heavy and light *lazarettes* is composed of two kinds of wagons, a heavier and a lighter variety. In the latter, less capacious, are found all the appliances, dressings, etc., requisite for forming field infirmaries; in the former, all articles needed for the organization of more permanent hospitals. These wagons have painted upon them the name of the corps, division and section to which they belong; the contents are also marked upon the wagons, and all valuable property, such as cases of instruments, bed-linen and utensils, are stamped. The apothecary wagon is so made as to serve a complete supply of medicines to each division, in the event of separation. The litter-bearers number 350 to each army corps, and are taught their duties for six months. There are four stewards to each battalion, and each steward has charge of twelve litter-bearers, or of one section, as it is called. Physical, mental and moral worth is the standard for the selection of these men. The stewards study for one year, and are then examined upon their duties; during three months of this course of study, pharmacy is taught. Volunteers for the position, if found qualified, receive the appointments, as well as those who may be particularly chosen for this duty. Each steward carries supplies for the battle-field, consisting of opium, liquor ferri, liquor ammoniæ, sugar, bandages, charpie, tourniquets and diachylon; also a pocket-case of instruments, containing scissors, forceps, probe, spatula, lancet, thread and needles. They perform the light dressings, and superintend the transportation of the wounded to the surgeons directly on the field. Four litter-bearers are assigned to each litter. Two bear at a time the wounded man, who has his head always carried forward, that the bearer at the foot of the litter, who is in charge of the other three, may give directions for the assistance he may need. The litters are strong, without being cumbrous; the cloth is very stout linen drill, tacked and tightly corded to well seasoned painted poles, with a part for the head, which can be elevated or lowered. At six inches from the ends of the poles, there is a hinge-joint, with hook and staple attached, and so arranged that, on being turned downwards, legs are furnished for the litter, and being again brought upwards, they serve as handles. The poles are only so far separated as to permit the bearer to stand

between and to raise the litter in a line direct from the shoulder. Loss of power, in raising the litter by too great abduction of the arms, is thus prevented, while it affords ease and endurance to the bearers, and increases the comfort of the wounded by the cloth not sinking. In fractures of the lower extremity, a plain surface is especially needed to prevent pressure upon the soft parts.

Minuteness in the description of such a *simple* affair as a litter may appear useless to many; yet there is no military surgeon of any experience in the field who will not add testimony to the difficulty of procuring a litter which combines the proper requisites for service and transportation of the wounded. The suffering, the shock produced, the laceration of soft parts by broken bone, are known to all who have seen the litter improvised from the soldier's blanket, or in such furnished litters as little better answer the purpose.

My own experience is, when the shock is not great, or depression can be obviated by timely use of stimulants from the field knapsack of the steward, that it is best for all who are wounded in the upper extremity to walk to the infirmary; in the head, trunk and lower extremity, it is better to be transported by litters than the ambulance wagons. The "Dorley" was found, by Williamson, of great service in the war in India; and, with men trained to its uses, this means of transportation would be most valuable, particularly in a rough country and mountainous sections. Cacolets possess fewer advantages than any other method, and should be thrown aside. During an engagement, the stewards, all in charge of their several sections, follow the troops, giving directions to the litter-bearers; the medical officers attached to regiments station themselves in groups, under charge of the regimental surgeons, at points a little in rear of the line, and there the first dressings are applied. The light *lazarette* of a division is divided into two sections: one, the aiding section, goes forward and superintends the removal of the wounded from the place where the first dressings are made to a position selected at a comparatively safe distance; there the wounds are re-examined, and such attentions afforded in the application of bandages, splints, dressings, remedies, and the performance of minor operations, as are actually needed. The other section establishes the field infirmaries out of the range of fire, where water, buildings and other conveniences may be found, and here all operations are performed. After the battle, the sections on the field assist at the infirmaries, precedence being given, in all operations, to the surgeons in charge of their respective divisions and sections. The higher officers are responsible for the surgery performed, and permission to operate is given by them to the officers of inferior grade. Under orders of the General Surgeon in charge of the corps, the heavy *lazarettes* are brought up to supply the places of those on the field, that these latter may move with their divisions as early as possible. Medicines, instruments, brandy, wine, utensils, splints, bandages, lint, charpie, wadding, pillows, sheets, blankets, mattresses, bed-sacks, air-cushions, under-clothing, oil-cloths, litters, tents, etc., are supplied in sufficient quantity to well establish field hospitals. These supplies are so arranged that a division or section can be independent one of the other, in case of necessity, and such system is employed, that the lowest *attaché* is as fully cognizant of his duties as the highest official in charge of the *azarette*.

This discipline, order and knowledge of duties readily place a field hospital in working order; and the reserve system of medical officers promotes the interests of the service by proper attention being given to the sick and wounded in the rear, whilst, at the same time, the troops in the front have all the attention of an undiminished staff. If found necessary, officers are sent from the rear to convert the field into more permanent hospitals, for the treatment of those wounds which do not admit of early transportation, and to permit the heavy *lazarettes* to be removed nearer the army.

General hospitals were established at Berlin, Breslau, Dresden, Leignitz, Leipsic, and other cities, with a staff in charge of divisions and sections similar to the field organization. Receiving hospitals, for shipment of sick and wounded at the stations; relief societies, to furnish food, drink and dressings; and sick-trains, with full corps of attendants, were soon established on the lines of railroads. Tents of strong, close linen duck, forty feet in length, twenty in width, fifteen in height, with a wall of five feet, affording space for sixteen patients, were used as a hygienic measure against low forms of disease. At either end is a partition, formed by a curtain, the width of the tent, dividing it into three parts; the largest and central is used for patients; another, as sleeping quarters for two nurses, and a storeroom for medicines and dressings; and a third, the smallest, is fitted with sick-chairs and a water-closet. The supports are hollow iron rods, varying from $2\frac{1}{4}$ to $\frac{3}{4}$ of an inch in diameter, four for the centre, an equal number for the roof, and fourten on either side, upon which rest a succession of rods, equalling in length those which form the ridge-pole. Each centre rod rests in the socket of a pedestal, firmly fastened in the earth, and the two in the central portion of the tent project twelve inches above the ridge-pole, and are surmounted by a cap, to prevent the entrance of rain through an opening in the cloth, eight inches in diameter. The wall is attached at the upper free border by hooks, into eyes from that part of the roof which is fastened to and overhangs slightly the rods resting on the wall-rods. This arrangement allows the wall to be unhooked and dropped, and, with the two openings in the top, abundance of fresh air is readily supplied. When the tent is pitched, it is firm, strong, steady, water-tight and well ventilated, thus possessing excellent requisites for a sick ward. The objection is the great weight from its size, and, in consequence, it is better adapted to stationary hospitals of permanent character, than for campaigning purposes. These tents were supplied by the "Johanniter Society" (an organization resembling our State Relief Societies), under control of a regular order, with insignia to mark the grades of members, and founded for the special succor of the sick and wounded. Officers of the order were in charge of depots of supplies at all the field hospitals, and distributed from abundant stores delicacies, luxuries, and every article which could promote comfort. Temporary wooden buildings were not used to any extent, but the good service rendered by the few which were erected on models similar to ours, was sufficient to justify others, had the war continued longer.

The flag voted by the General Conference, a red cross on a white ground, to designate hospitals on the battle-field, and a badge of similar device to indicate those attached to the medical department, were universally used.

In the sketch given of the arrangements made for sick and wounded, and as a further proof that the Prussians were not indifferent spectators to medical improvements, bought at such sad experience in America, it is best to let the official records tell how much was done in so short a time.

The Prussians had under arms, 363,109; the killed were, of all arms and grades, 2109; the wounded, 15,554; the missing, 3022, giving a ratio to the 1000 of 8.01 killed, 42.83 wounded, and 8.32 missing. Of the Austrians below the grade of sergeants, of all arms, the losses amounted to 71,267, of which 9671 were killed, 24,096 were wounded, and 37,500 were prisoners; 8770 were losses of the army of the South, and 62,497 of the army of the North. The Prussian loss at Sadowa was 1097 killed, 6455 wounded, and 1817 missing; the Austrians, 4220 killed, 12,015 wounded, and 21,684 prisoners. These statistics do not include deaths from disease nor from cholera.

[Dr. Darley kindly promises to continue his letters, furnishing his interesting experience of the Prussian campaign. His next will contain a description of surgical operations, among others of the transplantation of periosteum for fissures of the hard palate, referred to in the letter of Dr. Chaillé.].

London Correspondence.

Lewis' Library, 136 Gower St., London, W. C., March, 1867.

Sirs—Since I last wrote to you the entire energies of the London profession of Medicine have been devoted to the clitoridectomy business, and a very unpleasant circumstance has taken place. Mr. Baker Brown, F. R. C. S., the founder of the *London Surgical Home* for women suffering from curable surgical diseases, is, as you know, the advocate of *clitoridectomy*, and according to him, it cures hysteria, epilepsy, and many other diseases and irregularities to which females are subject. Mr. Baker Brown seems to consider that masturbation is extensively practiced by the "fair sex," and his panacea for all their ills lies in the excision of the offending member. There are others in the profession equally eminent with Mr. Baker Brown, who deny this practice and consequently object to the operation. There are others again, who not denying the occasional practice among females of masturbation, even to the derangement of the health, yet stoutly maintain that clitoridectomy is not the remedy, but the reverse, viz., an *aggravation* of the disease. Mr. Baker Brown and his adversaries in the medical world, have been carrying on a correspondence in the medical papers, with reference to the utility of the aforesaid operation. It has been evident that general medical and surgical opinion has run very high against the operation, and Mr. Baker Brown, therefore, has considered it proper to state that, until a committee of investigation on the merits of the operation has reported on it, he will not again operate. This was regarded by the

great body of general practitioners as an eminently fair conclusion on the part of Mr. Brown, and his fairness and candor called for some little praise and commendation from a section of the medical press. It was therefore with feelings of the most profound astonishment and not a little disgust, that the independent members of the profession heard of a proposition by the Council of the Obstetrical Society of London, to remove Mr. Baker Brown from the list of their Fellows.

There had been already one stormy meeting of this society, who were bound by their rules to show the cause of the removal at the first meeting after they had come to the conclusion that such cause existed. This they did not do, but appeared to consider the announcement that, in the supreme wisdom of the Council, such a cause existed, would be sufficient for the great body of the fellows. The friends of Mr. Brown spoke in a most manly and straightforward manner against the injustice of not mentioning the cause of removal, as per by-laws of the Society. Since this meeting the Council has determined to circulate among the members the cause of their wish to expel Mr. Brown from their Society. It is said to lie in the "published writings, etc., etc., with reference to the operations for clitoridectomy:" A ballot is to be held at the beginning of next month, and it will then be determined by the votes of the fellows (ballot), whether or not Mr. Baker Brown shall remain on their list. The ballot will either bring in an indictment against Mr. Brown or against his accusers—the Council of the Obstetrical Society. Differences of professional opinion have often ran pretty high in England, but certainly it has never led to such an extraordinary exhibition of party feelings and apparently professional jealousy as *this case* indicates.

The death of Prof. Budd, F. R. S., is announced. I need scarcely inform you that this distinguished physician was the very able lecturer on Medicine at King's College, London, after the great Sir Thomas Watson, whose very large consulting practice hindered him from keeping the professional chair. Dr. Budd resigned the chair of medicine at King's College a few years ago, on account of his very large private practice. His place was filled by Dr. George Johnson, who is still the incumbent. This latter gentleman will be known to your readers from his "eliminative" proclivities. He has made his name notorious by his persistent advocacy of the castor-oil treatment of Asiatic cholera. He has shown a considerable amount of perseverence in the advocacy of this eliminative treatment, and it remains for the profession to judge from actual cases treated, the worth or the reverse of the proposed treatment. It has not found favor with the profession in the United Kingdom, and, as far as as I have observed, it has excited little attention in the United States. I may mention, before leaving the subject of the chair of Medicine at King's College, that the late Dr. Budd was highly respected by all his pupils, who indeed subscribed to a testimonial on his retirement from office. Dr. Budd was a graduate of the Cambridge University, and was an excellent specimen, not only of a clever, painstaking physician, but also of a highly cultivated classical scholar and English gentleman. As a former clinical clerk of his, I have reason to speak most highly of Dr. Budd, and I can do so with authority.

Dr. Brown-Séquard's lecture at the opening of the Harvard University, U. S., on medical work and medical errors, has been printed in the British Medical Journal (19th March.) We are accustomed to receive reports of Continental medical lectures and medical news, but we are seldom favored with the doings of the American Universities. You are fortunate in the fact of the world-known Dr. Brown-Séquard taking up his abode with you, and I trust a race of American medical men will spring up, from whom we in the old world may glean as much information, as the new world has hitherto gleaned from the old. Nothing strikes the British medical observer more than the extraordinarily rapid development of your American Medical and Surgical Schools. The details of your war experience have contained much excellent practice, from which the Surgeons of all countries will benefit largely. The climate of your vast country varies so materially, that you will become authorities on many medical points that are still debatable ground in the United Kingdom. The true pathology and a successful treatment of cholera have yet to be written, and it remains for the physicians of America, conversant equally with the fevers of the tropics and Asiatic cholera, to say whether the extraordinary likeness between the cold stage of intermittent fever and the cold stage of cholera shows any relationship, or whether there is nothing in common between these diseases. The strong likeness between cholera and intermittent fever of severe type has been pointed out by those of our medical brethers in England who have served with our British troops in India, but, of course, those of our profession who have never been found beyond the shadow of the dome of St. Paul's, are not competent to form an opinion, or at any rate are not competent to sit in judgment on this matter. It is contended by many Indian observers, that the hypodermic injection of quinine afford a considerable chance of recovery to the cholera-smitten, while its exhibition as a prophylactic is pronounced to offer success.

Dr. Chambers' recent work on the Indigestions has been largely enquired for, and there is no doubt that practitioners will gain much information from the careful array of cases so beautifully and so clearly condensed and epitomized.

Dr. Parkes' Manual of Practical Hygiene appeared in a second edition some few months ago, the first being entirely sold off. It is an 8 vo volume of 624 pages, and contains an immense amount of practical information, useful not only to military doctors, but to medical men of all grades throughout the world. In the chapter on water, it gives instructions as to how an estimate may be made of the quantity of any area by certain calculations. It also shows how the amount of the rain-fall may be measured, and the quantity thus to be obtained estimated. It then goes minutely into quality, composition of rain-water, of ice and snow, spring, well and river water. It gives the sources of contaminations and the characters of good drinking water. It gives the physical, microscopic and chemical examination of water; the mode of purifying it, both with and without filtration; how to store it; the method of distribution, with its action on lead; the consequences to be expected from a deficient or an impure supply are noted. The air is thoroughly entered into; the quantity for healthy men; the amount necessary for the sick The

various impurities are also entered into in great detail, and with a practical accuracy that must commend the work to every man of business. Ventilation is thoroughly discussed, and the mode of determining the cubic space. The mode of examination of the air is also given, and the remarks on disinfectants and on the diseases likely to occur from impure air. It is not a work that conveys a theory, but it is a book for a working man; not for book-worm in a study, but for a practical philanthropist.

In the chapter on food, Dr. Parkes writes a most exhaustive treatise, containing, 1st, the general principles of diet; the food in health—total amount required—its chemical compounds and the fundamental dietetic principles absolutely necessary to support vitality; food in sickness; the digestibility of various foods; the variety of foods; and lastly, in this section, the diseases that are connected with foods. The next is still on food, but it enters into minutiæ, and teaches the practitioner how to determine the quality, how to choose and how to cook food; and it gives the diseases arising from altered quantities. The physical, chemical and microscopical examinations of all foods are given in great detail, and sufficiently so to be most valuable to the owner of the work in any part of the globe. Medical men on service, or in out-of-the-way villages and remote regions, are often required, on the spur of the moment, to undertake sanitary duties, and perform services which the hitherto bad system of education has not rendered them fit for. It is a great boon for those that, within the compass of a volume, the many exigencies of a hard-working sanitarian are provided for. Everybody can buy a copy of Dr. Parkes' work, and can thus make up for want of knowledge, and can transform himself from a scientific cypher into a living and useful demonstration of the value of applied science in the cause of the preservation of human life.

The value and constitution of beverages and condiments is then looked into, with the same painstaking research that characterizes the other portions of the work. Alcoholic beverages, non-alcoholic beveraves, condiments and lime-juice, all meet with equal consideration. The chapter on soils is very instructive, and it gives some capital hints as to the suitable sites for houses and camps. Habitations next receive comment. The advantages of the same and of their surroundings next receive attention. The warming is next considered. Then clothing receives attention. Book II is devoted to technicalities, with reference to soldiers in the various climates that British enterprise has sent its soldiers to.

A Book has just been re-issued on "Consumption—its true Nature and successful Treatment," by Dr. Godwin Timms, senior physician to the North London Consumption Hospital. He seems to combat the generally received notion, that tubercle is a lower vitalized tissue, placed in lieu of healthy lung-tissue in the lung, owing to a debilitated constitution. His work is ably written, and as he has seen many thousand cases of consumption, his views must be taken with respect. Dr. Timms states that consumption arises from an excess of destructive assimilation, and that therefore the blood is overcharged with effete matters, which are deposited as tubercle in the lungs. He stimulates the excretory functions, and uses emetics of ipecacuanha and sulphate of zinc to clear the tubercle out of the lung. This is

not a new idea, as it was written on many years ago. Both antimony and ipecacuanha have had their champions. Bleeding in old times was thought a highly advantageous plan in pulmonary phthisis, and it was superseded by antimonials and *hoc genus omne* in nauseating doses, with a view of *expelling* the tubercle. The best physicians of the present day seem to prefer to attempt to *hinder the development* of tubercle, more than its expulsion. But there can be no doubt that a treatment which could combine the arrest of development of tubercle and its expulsion at the same time, would commend itself to men of common sense.

Dr. Timms' book contains about 450 pages of excellent matter; and, although we cannot understand his treatment by small doses of bichloride of mercury, yet, as his treatment would appear to have had some little success, it would be well for us all to read his views and his cases before condemning his treatment altogether. He is very fond of the emetic treatment. He also gives a very good mixture, with moderately large doses of dilute hydrochloric acid. He employs steel and other tonics, and, of course, he uses cod-liver oil. He combats the excessive destructive assimilation by means of opium, and this chapter we consider very valuable. If phthisis is really due to destructive assimilation being too active, anything that can check it must be regarded as a great medical agent. Opium certainly decreases the rapidity of the pulse, and if the pulse is diminished in frequency, it stands to reason that the patient lives less quickly than before. Dr. Timms seems to consider that phthisis pulmonalis does not necessarily imply a "deficiency of vital forces." He classifies consumption as being sthenic and asthenic, respectively. The asthenic variety requires great support, while the former requires great attention to the excretions. It will be seen, therefore, that Dr. Timms' theory depends entirely upon the proposition that phthisis is caused by a too great activity of *destructive assimilation*.

The Royal Medico-Chirurgical Society, of London, may be considered to be the "*crême de là crême*" of medical and surgical opinion in England, and its transactions are, therefore, looked forward to with pleasure. The papers read before this Society are supposed to be something rather above the common run, and if they are not always rare or extraordinary, they are, at any rate, the reflections of cases by gentlemen of some little eminence in the medical profession.

The 49th volume (yearly volume) of the transactions of this Society is rather smaller than usual, and contains but seventeen papers, with five plates and three wood-cuts. I will enumerate the cases treated of, but as most of them have appeared from time to time in the columns of the medical journals, it will not be necessary for me to enter into particulars. The first paper is on the Effects of Coffee on the Urea and Chlorides in Health. II. A Case of Trephining of the Spine is rather remarkable on account of the success which attended the operation. The posterior arch of the vertebra, the spinous process of which was detected to be unduly prominent, was removed. The patient seems to have been a native of the United States, who was violently thrown when out hunting near Dublin. III. Arterio-Venous Cyst in the Popliteal Nerve, for which the limb, was amputated. IV. Multiple Neuromta, affecting the nerves both

within and external to the spinal canal, some of the tumors being of a cystic nature. V. On Granular Degeneration of the Voluntary Muscles. VI. Notes on Fever observed on one of H. M.'s war ships off the coast of Mexico. VII. Case of Lumbar Colotomy (Amussat's operation) successfully performed for the relief of vesico-intestinal fistula. VIII. A case of Hydatid Disease of Liver. IX. A case of Disease of Ear (disease of internal bones), by the late respected Mr. Toynbee. X. Case of premature Menstruation. XI. Case of Myeloid Transformation of the Lungs. XII. Atrophy of Muscles of Upper and Lower Extremities, from Disease of Spinal Cord. XIII. A case of Elephantiasis Arabum, or Elephas, *successfully treated* by the application of a *ligature to the main artery of the limb.* XIV. Case of Oblique Inguinal Hernia, with retention of testes, the bowel protruding into and returning upwards upon aponeurosis of external oblique muscle. XV. A case in which the Corpus Callosum was defective. This patient died at forty years of age. Had always been of weak intellect, and had the look of an imbecile. Was the son of a gentleman. The patient had practiced masturbation as a youth, and the parents and friends referred the imbecility to this habit. The mental specialist employed had diagnosed congenital imbecility, which the *post-mortem* proved to have been the case. The patient was curiously devoid of the power of *calculation.* XVI. Case of Chronic Albuminuria, originating during convalescence from Scarlet Fever. XVII. Paper on the Detection of Lung-tissue in Expectoration of persons affected with Phthisis. These are the entire contents for the volume just issued.

As the American Mail closes to night, I must now conclude.

A. T. M.

Editorial.

Quarantine.

As the season is approaching when the act establishing this institution in Louisiana may be expected to be put in force again, it is perhaps not amiss—nay, may be expected—that this journal will express its views on the subject. In compliance with this expectation, rather than that of adding to the accumulated knowledge of the subject already published by abler investigators, or of modifying in any degree what appears to be the settled, as well as generally entertained policy now existing, we shall speak our mind. It is not our object to *agitate* the subject, with a view of starting a movement to revolutionize public opinion, nor even to create a temporary sensation for popular amusement. Of course our readers do not expect us to in-

dulge them with an exhaustive treatise, which could hardly be compassed in a single volume; and as neither space nor time would warrant even an essay, we shall merely offer a few observations, and promise them to be reasonable, at least in length.

The scope of our present purpose is limited to a brief consideration of the following questions:

(1) What is the object proposed in the establishment of a quarantine?

(2) Has this object been attained?

(3) What are we to expect of its future workings?

(1) The object of a quarantine, plainly, is to prevent the importation of contagious and infectious diseases, and in this country has reference chiefly to cholera and yellow fever. Whether these two diseases justly come within the scope of quarantine control, involves the consideration of their nature and mode of propagation. We shall not attempt to augment or canvass the mass of testimony which has accumulated on this vexed question, *pro* and *con*, having been so befogged in its investigation ourselves, that it would be the height of arrogance to attempt to guide any one else through the darkness. This much is obvious: that the prevailing opinion, both in the profession and out of it, has undergone a decided change in the last quarter of a century. It must not be concluded, however, that we have arrived at a correct solution of the matter in dispute, for revolutions in scientific opinion are greatly governed by the ruling spirit of the age, Progress (supposed to be modern English for Proteus). And when the observer of this most eventful and progressive quarter of a century has seen how the sovereign people have gradually come round to the conviction that *black is white*, and their chosen legislators have enacted accordingly, will he wonder at this lesser triumph of progress? We think not. But the fact is admitted, and what does it prove? That the change is wise and proper and salutary? Not at all; but merely that the advocates of the *contagion* theory and of quarantine have been more industrious than their opponents, and have "educated a whole generation" in their doctrines.

An intercurrent question might here arise, whether the yellow fever of 1853–4–5 was of a different type from that of previous visitations. This has been the belief of many, from its remarkable prevalence and virulence. Such a fact can be accounted for in only one of two ways—first, a change of type in the disease, involving a prin-

ciple now generally rejected by the profession; or, secondly, the introduction of a different disease from that previously known as yellow fever. But it was found that a previous attack of yellow fever afforded protection against this fever, which could not be the case, were it a distinct disease. Nevertheless the occurrence of this epidemic of 1853, recurring the following year, seems to have determined the public mind, and a large share of the profession, to a change of opinion, which resulted in the reëstablishment of the quarantine in 1855, after a discontinuance of thirty years.

Leaving now these speculative considerations, let us take a practical view of the case, and observe (2) the success of the quarantine system. As cholera is only an occasional visitant and ever intolerant of quarantine restrictions, we might as well leave it out of the question. If, according to the advocates of quarantine, yellow fever is an exotic and contagious disease, it should have been epidemic here every year from 1825 to 1855, when there was unrestricted intercourse with all parts of the world; and since the latter date it should have ceased to exist here. Leaving a reasonable margin for the necessary imperfection of all human contrivances, let us notice these points. As it is simply a matter of fact and history, the task is quite easy.

Going back to 1818, we find a quarantine act of the legislature for the first time in force. This year 43 patients with yellow fever were admitted to Charity Hospital, beginning Aug. 30. In 1819 there was an epidemic, the quarantine act having been repealed. The fever also prevailed in 1820. In 1821 there was again quarantine;—no case of the fever admitted to the hospital. In 1822 it prevailed again in New Orleans, attributed by contagionists to importation from Pensacola late in the season; while it is noticeable that its introduction to Pensacola has been traced with equal zeal, if not certainty, to the previous arrival of a lady from New Orleans, who died soon after of the fever. It is a disputed point whether the disease prevailed in New Orleans in 1823; but the fact that only two cases occurred at Charity Hospital is strong negative evidence. It is, however, remarkable that Natchez this year experienced a most destructive visitation, though there was quarantine against boats arriving from this city, and the cases appeared remote from the landing, which was not visited by the disease for two weeks. It is also remarkable that no other town in the Mississippi valley this year suffered an invasion. In 1824 the disease again prevailed in New Or-

leans; in 1825 with less severity, the quarantine having been abolished. During the thirty years following cases occurred every year, doubtless, and the fever was epidemic, in varying degrees of violence, about half as many times.

In 1846–7–8, while the Mexican war was waging, yellow fever existed at Tampico and Vera Cruz, where troops were landed for the interior. In 1847 there was a severe epidemic in New Orleans. Most of these troops were proper subjects, and yet, after passing through these cities, they were neither scourged themselves nor carried the malady into the country with them. On their return, in 1848, their exemption was almost equally marked.

Since the reëstablishment of quarantine, in 1855, it was epidemic the same year, and again in 1858. Every other year up to the present time, sporadic cases have occurred. In 1863–4 numerous cases occurred on board the gun-boats moored opposite the city, but the cases in the city are reported as few. There is no evidence that the fever was introduced from abroad, and no doubt exists that those cases originated spontaneously on board. Parallel instances occurred at Pensacola, on board the U. S. naval vessel *Natchez*, in 1826; and in 1831, on the *Vincennes*. More remarkable was the outbreak of yellow fever at Gallipolis, on the Ohio river, in 1796; and at New Design, Mo., 15 miles from the Mississippi river, and 20 from St. Louis, in 1797. At those dates these places were so isolated, that there is not the slightest reason to believe that the disease was introduced from abroad. Last year 134 deaths from yellow fever were reported previously to Oct. 24th, and no one pretends that the disease was imported into the city.

Donaldsonville, Port Hudson, Fort Adams and Waterloo were not visited by the fever till 1839, though it had repeatedly prevailed at some of the larger towns farther up the river, and though intercourse had always been unrestricted with New Orleans. In 1844 it first reached Woodville, an interior town in Mississippi, and was very prevalent. All the river towns above New Orleans escaped that year, and the evidence of importation rests upon the slenderest possible foundation.

On the principle of transportability, how did yellow fever fail to reach this city until 1791 (some say 1796), after visiting the Atlantic cities of the country repeatedly for nearly 100 years? Why did it never reach Rio Janeiro and the other cities south of the equator before 1849? Why has it never been carried to the Pacific ports be-

yond the Isthmus? Certainly not for want of commercial intercourse, nor by virtue of quarantine restrictions.

It cannot be denied that numerous instances have occurred, affording a presumption of the personal infectiousness of this malady, and of its transportability in *fomites* for long distances. A number of such instances may bring conviction to a credulous mind taking a narrow view of the subject, and no one may be able satisfactorily to account for them on any other supposition. Nevertheless we are of the opinion, that whoever reads the history of yellow fever and studies its prevalence in the various quarters which it has visited, must rise from the task profoundly impressed that it is one of the mysterious and tremendous dispensations of the Creator, that man is unable to comprehend and impotent to control. Mitigated it may be, by measures of sanitary police, like other epidemic diseases, but as "the wind bloweth where it listeth," no barriers of man's erection can exclue it. We conclude, therefore, that quarantine has not reasonably answered its proposed object, nor, we apprehend, the expectations of its advocates.

(3) From past experience, may it be presumed that quarantine will hereafter prove more efficacious or satisfactory? We candidly think not. The demon which it would exorcise has sprung up repeatedly under circumstances of absolute non-intercourse with any focus of infection; it capriciously declined visiting its present favorite haunts during many years of unrestricted intercourse between them and stricken localities. After the most dreadful ravages in the Spanish peninsula during the first quarter of the present century, in spite of all the impediments at the command of a despotic government, it has as mysteriously ceased its assaults, and only occasionally threatens. The same disposition, gradually to discontinue its civilities, has long been manifested towards the cities of the Atlantic coast; and the Gulf cities have reason to hope that eventually its attentions will be diverted from them to more recent attractions in southern latitudes. As the reasoning *post hoc, ergo propter hoc*, commends itself to ordinary understandings by its simplicity and plausability, this is set down to the credit of quarantine. Moreover most people feel a certain degree of security in the vigorous enforcement of a quarantine, and this reassurance in the face of danger doubtless lends some protection against the reality. Little children sent to bed in the dark, cover their faces and feel more secure against goblins. It is useless to reason with them, after listening to ghost stories, and

it would be cruel to strip them of this defense, imperfect as it may be to dispel their terrors. So we should say of quarantine, were it as harmless an expedient. It is not necessary here to speak of the expense of the system, the damage inflicted on commerce and the personal annoyances involved—these are well understood by all.

But this is not now to the point. The law exists, and the authorities are disposed to enforce it. Enough discretion, however, is left them to make it oppressive, or to relax some of its severities and make it endurable. As our Board of Health is composed of intelligent men, and a portion of them physicians, we hope that they will take a broad and enlightened view of this subject. A microscopic examination of a few individual cases affords no fair basis for judgment, and must lead to partial opinions, one way or the other, as they happen to occur. In times of danger, of difficulty, of doubt, of dispute, it is wise to return to first principles, guided by the thread of history. This course we have endeavored to take in the foregoing remarks, and if they shall induce others, and especially the administrators of our quarantine, to examine more thoroughly than we have been able to do this subject by the light reflected from the past, we shall be content to abide by their judgment and sustain their action.

"*Quousque tandem abutere patientia nostra?*"

WITH a mingled sense of indignation and disgust, we have for several months been an unwilling witness to a series of personal assaults on the part of one of our exchanges upon a cotemporary. The vindictiveness of these attacks is equalled only by their injustice and coarseness; and the violation of the recognized courtesies of professional intercourse and of the amenities of medical literature has at length become so excessive as to demand the severest rebuke from a disinterested party. Whatever palliation the heat of a political contest may afford for the use of intemperate language between rival candidates and their respective partizans, there can be no excuse for the hurling of abusive epithets in our theater of action, and the perpetration of such offenses must be injurious and dishonorable chiefly to their authors.

We have no disposition, time nor space to dilate on this disagreeable topic, nor does it require any exposition or admit of discussion. Thus much we think necessary, to show that this journal

does not countenance nor tacitly tolerate conduct derogatory to professional honor and injurious to science, in perverting an engine intended for the promotion of knowledge and truth and making it a weapon to serve the purposes of personal spite.

While on the subject of propriety, we shall here take occasion to express our decided disapprobation of certain dirty anecdotes which have, at different times, appeared in some of our exchanges. By way of illustration, or to rouse the drowsy class from the narcotic effects of a prosy discourse, medical lecturers occasionally indulge in sallies not more humorous than indelicate; and while we have been doubtful of their utility, we never have been of their impropriety. Still, this may be some way excusable, and, at any rate, we should never be puritanical about a trifling matter. This, however, is quite a different affair, for medical pages are liable to fall into the hands of the laity, and such blemishes might create an impression injurious to the profession in general, and to their publisher in particular.

It is not our ambition to become a censor of the medical press, but having its fair fame at heart, we are unwilling to see it tarnished without uttering a word of caution. The tendency of all unchecked abuses is to a rapid aggravation, and they should be checked at their very inception. We shall, therefore, take the liberty of erecting here a finger-post, and inscribe thereon these words of warning: "*Facilis Descensus Averni.*"

Vital Statistics of the Colored Population.

We desire to collect materials, with the view of presenting in a future No. of the Journal the comparative prolificacy of the negro race in this country, as now existing, with that of a date anterior to the war. To this end we shall ask of our subscribers—all who are interested in this matter and are willing to promote its investigation—to make accurate observations, within the range of their actual acquaintance, of the births and deaths among the negro population for one year, say from June 1st, 1866 to June 1st, 1867, if these dates be found convenient. By way of comparison, we would like also an opinion, or still better, an accurate report of the births and deaths in a given community for one year before the war.

An opinion from each one of the comparative frequency of abortions and still-births, and of the period of life affording the greatest

mortality, is likewise solicited, as well as upon the prevalence of prostitution among the women, and venereal diseases in both sexes. Any other facts and observations relative to this subject may be communicated. We would like the returns to be made by July 1st, to the Editors of this Journal.

To Subscribers.

The number for May completes the nineteenth volume of this Journal. During the past year many difficulties have been surmounted; and the proprietors entertain the belief that the future will afford important advantages in the conduct of this periodical. We, therefore, solicit the continued patronage of the numerous practitioners of medicine located in the fertile districts of the Southwest; and we, at the same time, urgently request parties desiring to subscribe for the next volume to forward with promptitude the amount due.

The proprietors will transmit to former subscribers the actual condition of their accounts as shown by the registry of the business department; and we entreat those who may be indebted for the past year to send the amount of subscription to which the proprietors certainly consider themselves justly entitled. It is as highly important for our friends to pay the annual sum of their indebtedness, as it is that the proprietors should send them the successive issues of the Journal, or satisfy the demands of the printer. Otherwise, neither can the proprietors sustain their labors in this publication, nor gratify the wishes of their patrons in forwarding a journal replete with instructive literary and scientific contributions.

Postage.—The amount due for the transmission of this Journal to our various subscribers is only *four cents* for each number, or *twenty-four cents* per annum. Prior to the substitution of the flexible binding, the increased weight of the pasteboard cover rendered the postage *six cents* for each number, or *thirty-six cents* per annum. This statement is in accordance with the decision of the Postmaster of this city, and is announced for the purpose of preventing any misunderstanding between our subscribers and the various postmasters through whom the Journal may be transmitted.

Private Medical Instruction.

The circular of Drs. John D. Jackson and S. P. Breckinridge, assisted by Prof. Ormond Beatty, A. M., of Centre College, is before us. Their proposition, to organize a private medical class at Danville, Ky., suggests the benefit that might flow from the establishment of similar classes in other towns throughout the country. At the present day such schools could not, nor should, be substitutes for the regular colleges of Medicine; but it is well enough to recollect that, within a few years, these afforded the best available opportunities to the great majority of medical students in this country, and to consider how well they answered their purpose. We cannot help regretting that an improved system of public instruction has caused so complete a revolution as to lead to their almost total discontinuance; and to this day the want of private tuition is felt as an irreparable deficiency in our own medical education.

We give place to some remarks in their circular, as expressing views which meet our hearty concurrence:

"It is unfortunately a general truth, that large numbers of medical students begin the regular course of Lectures without adequate preparation. The too short period of three years which custom and the rules of the Medical Colleges of the country have allotted as the the term of medical pupilage, it has been pre-supposed, was wholly occupied in the *systematic* study of medicine; yet, unfortunataly for the interests of the profession, the very important period known as office pupilage, occupying the time antecedent to, and in the intervals between the periods of lectures at the colleges, is as a rule merely nominal. This period of private office pupilage, embracing two of the three years assigned, though so generally misspent in a sort of listless, ill-directed and desultory reading of text-books, without proper explanation or illustration, may certainly be passed with as much profit as the time of attendance on public lectures, and to cause it to be, to those gentlemen placing themselves under their charge, will be the effort of the association."

These unpretending schools might be made preparatory to the medical colleges, as the grammar schools are to our colleges of arts; and when a preliminary examination shall be imposed on all medical students as a requisite for registration at the colleges, their importance will amount almost to a necessity. This preliminary examination is already enforced in the British medical schools, and we are glad to observe a tendency in that direction in our own country. It will, in our opinion, go far towards removing the reproach from American schools, of a low standard of proficiency for the acquisition of medical honors and their implied responsibilities.

Obituary.

Died, March 20, at 10 minutes past 10 o'clock, P. M., Thomas Hunt, aged 56 years and 10 months, President of the University of Louisiana, and Professor of Physiology and Pathology and Special Pathological Anatomy in the Medical Department of the University.

[As a learned physician, accomplished orator and lecturer, Dr. Hunt had few equals. After a long and earnest labor for the promotion of science and education, he sleeps with his fathers. In a future issue of this Journal, we shall take occasion to record the many virtues of this distinguished professor.—Eds.]

To Contributors.

Since our last publication, we have received papers from Dr. J. M. Pace, Camden, Arkansas, and Mr. J. H. Hart, of New Orleans, which, together with others previously on hand, want of space compels us to hold over for a future number. We would ask of our friends, who contribute to our pages, to write on one side only of their paper, in a legible hand, and to indicate their paragraphs in the usual manner.

Books and Pamphlets Received.

The Transactions of the American Medical Association. Vol. XVII, 8vo., pp. 713. Philadelphia: 1866.

Minutes of the Proceedings of the Thirteenth Annual Meeting of the Medical Society of the State of North Carolina, held at Raleigh, N. C., 5th June, 1866.

Medical Register of the District of Columbia, 1867, *Embracing Notices of the Medical, Benevolent and Public Institutions of Washington.* By J. M. Toner, M. D.

The Science and Practice of Medicine. By Wm. Aitken, M. D., Edin., Professor of Pathology in the Army Medical School, etc. Vol. II. From the Fourth London Edition, with Additions, by Meredith Clymer, M. D., late Prof. Institutes and Practice of Medicine, University of N. Y., etc. 8vo., pp. 1114. Philadelphia: Lindsay & Blakiston. 1866. [From Krull & Dickey, Booksellers, 106 Canal street, N. O.]

On the Action of Medicines in the System. By Fred. Wm. Headland, M. D., B. A., F. L. S., Fellow of the Royal College of Physicians, etc. Fifth American, from the fourth London edition, revised and enlarged. 8vo., pp. 431. Philadelphia: Lindsay & Blakiston. 1867. [From Krull & Dickey, Booksellers, 106 Canal street, N. O.]

The Indigestions; or, Diseases of the Digestive Organs Functionally Treated. By Thomas King Chambers, Consulting Physician and Lecturer on the Practice of Medicine at St. Mary's Hospital, etc. 8vo.; pp. 287. Philadelphia: Henry C. Lea. 1867. [From Krull & Dickey, Booksellers, 106 Canal street, N. O.]

Guide for Using Medical Batteries: (Being a Compendium from his larger Work on Medical Electricity and Nervous Diseases) Showing the most Approved Apparatus, Methods and Rules for the Medical Employment of Electricity in the Treatment of Nervous Diseases. By Alfred C. Garratt, M. D., etc. 8vo., pp. 180. Philadelphia: Lindsay & Blakiston. 1867. [From Krull & Dickey, 106 Canal street, N. O.]

Berkshire Medical College: A Summer Medical School, commencing June 13, 1867. *Forty-Fifth Annual Announcement and Catalogue of all the Graduates of the College.* Pittsfield, Mass.

Researches upon Spurious Vaccination; or, the Abnormal Phenomena accompanying and following Vaccination in the Confederate Army during the recent American Civil War, 1861–1865. By Joseph Jones, M. D., Prof. Physiology and Pathology, Medical Department, University of Nashville, Tenn. Pamphlet, pp. 132. 1867.

National Medical College. Valedictory Address delivered before the Graduating Class, March 6, 1867. By John Ordronaux, M. D., LL.B., Prof. Physiology and Medical Jurisprudence. Washington, D. C.: 1867.

Summary of the Transactions of the College of Physicians of Philadelphia. New Series. Vol. IV., Nos. 1–2–3.

Practical Dissections. By Richard M. Hodges, M. D., formerly Demonstrator of Anatomy, Medical Department of Harvard University. Second edition thoroughly revised. 12mo., pp. 286. Philadelphia: Henry C. Lea. 1867.

Semi-Annual Report of Superintendent and Board of Managers of the Texas State Lunatic Asylum, from 21st August, 1866, *to 1st March*, 1867.

Injuries of the Spine, with an Analysis of nearly Four Hundred Cases. By John Ashhurst, Jr., A. M., M. D., Surgeon to the Episcopal Hospital, Philadelphia, etc. 12mo., pp. 127. Philadelphia: J. B. Lippincott & Co. 1867.

Code of Medical Ethics adopted by the American Medical Association. Revised to date. New York: Wm. Wood & Co. 1867.

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The Cincinnati Lancet and Observer—February, March and April.
Medical and Surgical Reporter (Phila.)—Feb 16, 23; March 2, 9, 16, 23, 30; April 6.
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